

科目コード (Code)	科目名 (Course title)	Course title (English)
10B014	建築環境計画論Ⅰ	Theory of Architectural and Environmental Planning I
10B037	建築設計力学	Design Mechanics for Building Structures
10B231	高性能構造工学	High Performance Structural Systems Engineering
10B032	応用固体力学Ⅰ	Applied Solid Mechanics I
10B033	応用固体力学Ⅱ	Applied Solid Mechanics II
10B222	環境制御工学特論	Environmental Control Engineering, Adv.
10B024	生活空間学特論	Theory for the Preservation and Restoration of Architecture and Environment Design
10B015	建築環境計画論Ⅱ	Theory of Architectural and Environmental Planning II
10B035	人間生活環境デザイン論	Design Theory of Architecture and Human Environment
10B036	建築史学特論	History of Japanese Architecture
10B013	建築設計特論	Theory of Architectural Design, Adv.
10B016	建築論特論	Theory of Architecture, Adv.
10B019	建築プロジェクトマネジメント論	Project Management
10B038	人間生活環境認知論	Theory of Cognition in Architecture and Human Environment
10B040	構造解析学特論	Analysis of Structures, Adv.
10B043	コンクリート系構造特論	Concrete Structures, Adv.
10B044	耐震構造特論	Earthquake Resistant Structures, Adv.
10B234	鋼構造特論	Steel Structures, Adv.
10B052	構造安全制御	Control for Structural Safety
10B046	建築振動論	Dynamic Response of Building Structures
10B241	都市災害管理学	Urban Disaster Management
10B238	建築風工学	Environmental Wind Engineering
10B069	建築技術者倫理	Architectural Engineer Ethics
10B053	建築環境物理学特論	Physics in Architectural Environmental Engineering, Adv.
10B054	建築設備システム特論	Building Systems
10B226	建築地盤工学	Building Geoenvironment Engineering
10A832	構造材料特論	Theory of Structural Materials, Adv.
10A856	居住空間計画学	Dwelling Planning
10B100	静粛環境工学	Silence Amenity Engineering
10B259	音響空間設計論	Theory of Acoustic Space Design in Architecture
10X401	デザイン方法論	Design Methodology
10X413	建築構造デザイン論	Design Theory of Architectural Structure
733707	環境デザイン論	Environmental Design Research
10i017	建築学コミュニケーション	Architecture Communication
10i045	実践的科学英語演習Ⅰ	Exercise in Practical Scientific English I
10i042	工学と経済(上級)	Advanced Engineering and Economy
10B088	建築学総合演習	Exercises in Architecture and Architectural Engineering
10B062	建築学特別演習Ⅰ	Seminar on Architecture and Architectural Engineering, I
10B063	建築学特別演習Ⅱ	Seminar on Architecture and Architectural Engineering, II
10i010	工学研究科国際インターンシップ1	International Internship in Engineering 1
10i011	工学研究科国際インターンシップ2	International Internship in Engineering 2
10i049	エンジニアリングプロジェクトマネジメント	Project Management in Engineering
10i059	エンジニアリングプロジェクトマネジメント演習	Exercise on Project Management in Engineering
88G101	研究倫理・研究公正(理工系)	Research Ethics and Integrity (Science and Technology)
88G201	学術研究のための情報リテラシー基礎	Basics of Academic Information Literacy
88G203	データ科学:理論から実用へⅠ	Data Science: From Theory to Practical Use I
88G204	データ科学:理論から実用へⅡ	Data Science: From Theory to Practical Use II
88G301	大学院生のための英語プレゼンテーション	Presentation for Graduate Students
10B071	インターンシップⅠ(建築)	Internship I, Architectural Design Practice
10B073	インターンシップⅡ(建築)	Internship II, Architectural Design Practice
10B075	建築設計実習	Architectural Design Practice
10B077	建築設計演習Ⅰ	Architecture Design Studio I
10B079	建築設計演習Ⅱ	Architecture Design Studio II
10B080	建築工事監理実習	Construction Supervision Practice

Numbering code					
Course title <English>	建築環境計画論 Theory of Architectural and Environmental Planning I	Affiliated department, Job title,Name	Graduate School of Engineering Professor,MIURA KEN		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Thu.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Japan will have a very super aging society. In order to maintain the vitality of society, a plan for building and environment that extends healthy life expectancy is required. This class explain the cases of international medical welfare architecture and human environment design focusing on physiological psychological indicators to gain an advanced understanding relation between human well-being and architectural planning and design.					
[Course Goals]					
In this class students acquire subjective thinking abilities and advanced planning skills to discover and solve problems themselves through discussions and exercises.					
[Course Schedule and Contents]					
1 class: This class explain the position and goals of this lecture and points to be noted in term.					
3 classes: Human-Environment Design and Research: medical welfare architecture ,These classes deepen students' understanding of trends and research techniques incorporating human environmental design.					
3 classes:Human-Environment Design and Research: Theater and human behavior : Understand the changes in the relationship between the performer and the audience, these classes deepen understanding of the transition of theater plans.					
2 classes:Analysis of building plan from user's point of view : Evaluation of building changes greatly depending on the user. Setting specific users, evaluate building plans. Based on the analysis results, students deepen understanding of methods and techniques for planning improvement.					
6 classes : Comparative analysis of building environmental plan: Taking specific building type as a case, analyze considerations and problems in building plan from comparison and analysis, deepen understanding of building plan and design.Oral presentation is required.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Based on written reports and presentation					
----- Continue to 建築環境計画論 (2) -----					

建築環境計画論 (2)

[Textbook]

Classes will make use of printed handouts and projected slides.

[Reference books, etc.]

(Reference books)

Introduced during class

[Regarding studies out of class (preparation and review)]

Subjects will be given written reports to be completed outside class, with corresponding presentations in class.

(Others (office hour, etc.))

Appointments can be made by email.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築設計力学 Design Mechanics for Building Structures	Affiliated department, Job title, Name	Graduate School of Engineering Professor, TAKEWAKI IZURU Graduate School of Engineering Associate Professor, KOHEI FUJITA		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Mon.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Basic mechanics and inverse problem for design of building structures are explained. Structural optimization methods are also presented. Rational structural design approaches are introduced in place of conventional try-and-error approaches.					
[Course Goals]					
Obtain the knowledge on basic mechanics for design of building structures. Also obtain advanced knowledges on new theories and methodologies of structural optimization and inverse-problem formulations.					
[Course Schedule and Contents]					
<p>Concept of inverse problem, 1 class, Examples of inverse problem in terms of shear building models</p> <p>Hybrid inverse problem of structural systems, 1 class, Examples of hybrid inverse problem in vibration and classification of hybrid inverse problems. The solution procedure of hybrid inverse mode problems is discussed.</p> <p>Strain-controlled design method for moment-resisting frames, 1 class, Simple examples are used for understanding fundamental concepts of strain-controlled design.</p> <p>Inverse problem via design sensitivity analysis, 1 class, An inverse problem formulation via design sensitivity analysis (direct method) is explained.</p> <p>Earthquake-response constrained design, 1 class, A method of earthquake-response constrained design for shear building models is explained. Design loads in terms of the design response spectrum are used in the design method.</p> <p>Performance-based Design, 1 class, A design methodology based on the concept of performance-based design is explained.</p> <p>Exercise 1, 1 class, Exercise on inverse problems.</p> <p>Fundamentals of mathematical programming, 2 classes, Fundamentals of mathematical programming methods are explained. Linear and nonlinear programming methods are introduced and some examples are presented.</p> <p>Design sensitivity analysis, 1 class, Basic methods of sensitivity analysis for computing derivatives (sensitivity coefficients) of static responses</p>					
----- Continue to 建築設計力学(2)					

建築設計力学(2)

and frequencies of free vibration with respect to variations of design parameters are explained.

Application to optimization of framed structures, 1 class,

Application of mathematical programming methods to optimization of framed structures is presented.

Optimal design for base isolation and structural control , 2 classes,

Several methods for optimal design of structures using base isolation and structural control are explained.

Exercise 2, 1 class,

Exercise on structural optimization

Confirmation of the Learning Degree, 1 class,

[Class requirement]

Mechanics of Building Structures, Basic Linear Algebra, Basic Calculus

[Method, Point of view, and Attainment levels of Evaluation]

Grading is based on the examination at the end of semester.

[Textbook]

Not used

[Reference books, etc.]

(Reference books)

Design Mechanics and Control Dynamics of Building, Architectural Institute of Japan, 1994.

[Regarding studies out of class (preparation and review)]

Solve the exercises presented in the first class in parallel to the class advancement.

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	高性能構造工学 High Performance Structural Systems Engineering	Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,KOETAKA YUUI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,1time, ,6times, ,5times, ,3times, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	応用固体力学 Applied Solid Mechanics I	Affiliated department, Job title, Name	Graduate School of Engineering Professor, OOSAKI MAKOTO		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Thu.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Fundamentals of stress tensor, strain tensor, and constitutive relations are discussed. Based on these concepts, boundary value problem is formulated. Finite deformation and nonlinear constitutive relations are also discussed.					
[Course Goals]					
To learn fundamentals of solid mechanics					
[Course Schedule and Contents]					
1-4. Stress tensor and strain tensor: Fundamentals of tensor analysis, stress tensor, strain tensor, constitutive relation. 5-7. Conservation laws and boundary value problem: 8-10. Geometric nonlinearity: Stress and strain tensors considering finite deformation. 11-14. Material nonlinearity: Fundamentals of nonlinear elastic and elastoplastic constitutive relations. 15. Final examination/ Learning achievement evaluation					
[Class requirement]					
Structural mechanics, linear algebra, vector analysis					
[Method, Point of view, and Attainment levels of Evaluation]					
Final examination					
[Textbook]					
Not used					
[Reference books, etc.]					
(Reference books) Introduced during class					
[Regarding studies out of class (preparation and review)]					
Explained in the class					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	応用固体力学 Applied Solid Mechanics II		Affiliated department, Job title,Name	Graduate School of Engineering Professor,OOSAKI MAKOTO	
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Tue.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Based on displacement method, approximate formulations for beams, plates shells are discussed.					
[Course Goals]					
To learn fundamentals of solid mechanics					
[Course Schedule and Contents]					
1-3. Plate theory: Displacement-based thick and thin plate theories are formulated from the basic equations for 3D continua. 4-10. Rod theory: Based on the virtual work principles, St. Venant's and Wagner's torsion theories are derived. 3D beam theory including bending and shear is also presented. 11-14. Shell theory: Arch and cable theories are discussed. Based on membrane theory, formulations for shell theory is presented. 15. Final examination/ Learning achievement evaluation					
[Class requirement]					
Structural mechanics, linear algebra, vector analysis					
[Method, Point of view, and Attainment levels of Evaluation]					
Final xamination					
[Textbook]					
Not used					
[Reference books, etc.]					
(Reference books) Introduced during class					
[Regarding studies out of class (preparation and review)]					
Explained in the class					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	環境制御工学特論 Environmental Control Engineering, Adv.		Affiliated department, Job title, Name	Graduate School of Engineering Professor, HARADA KAZUNORI	
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Tue.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
This lecture deals with functional aspects of building envelope as a shelter from outdoor climate. Lecture will be given on specified topic on principles of thermal and moisture insulation, control strategy of indoor environment, the prediction methods of air flow, thermal radiation and indoor air quality. Examples will be shown for use in building design for thermal environment control and safety problems during fire.					
[Course Goals]					
To acquire basic concepts on fundamental concepts on thermal environment control for preparation of master thesis development.					
[Course Schedule and Contents]					
introduction, 1time, The history of numerical methods in architectural environmental control is briefly introduced, followed by introduction of mathematical formulation of physical phenomena. numerical methods in heat conduction, 4times, As a common knowledge, heat conduction equation is dealt with in order to understand the basic framework in numerical methods. At the end of this term, report will be obligatory to understand the meaning of discrete equations and their nature. numerical methods on fluid motion, 5times, Lecture will be given for standard methods of calculation of fluid dynamics. At the end of this term, simple practice on control volume method and SIMPLE algorithm will be obligatory. simultaneous system and turbulence, 4times, Lecture will be given for simultaneous systems of fluid motion and thermal field. In a similar way, turbulence model is to be introduced. The participants are expected to have learned on environmental engineering in architecture at bachelor level. Evaluation of achievements, 1time, Evaluation of achievements will be conducted.					
[Class requirement]					
The participants are expected to have learned on environmental engineering in architecture at bachelor level.					
[Method, Point of view, and Attainment levels of Evaluation]					
Score is evaluated by end-term examination.					
[Textbook]					
None specified.					
----- Continue to 環境制御工学特論(2) -----					

環境制御工学特論(2)

[Reference books, etc.]

(Reference books)

To be specified during the course.

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

Questions will be accepted at occasions via Email.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	生活空間学特論 Theory for the Preservation and Restoration of Architecture and Environment Design	Affiliated department, Job title,Name	Graduate School of Engineering Professor,TAKEYAMA KIYOSHI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,1time, ,3times, ,3times, ,3times, ,5times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築環境計画論 Theory of Architectural and Environmental Planning II	Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, YOSHIDA TETSU		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Thu.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>In explanatory theory of human psychology and behavior in built-environment, formation of privacy feeling between family members and that feeling based on territorial behavior or owing to others sight line is explained. How privacy is dealt changes much firstly in the field of information and then architectural planning and urban planning and so on. Those topics are widely explained. Especially, to understand privacy of residents living in detached houses and apartment houses in built-up area designed and built by successive rebuilding way is major issues. Furthermore, through field survey and presentation, understanding about subject matter will be enriched.</p>					
[Course Goals]					
Enriching understanding about privacy dealt in architectural and urban planning field					
[Course Schedule and Contents]					
<p>Privacy in post modern society, 2times, Explain outline how privacy is dealt in post-modern society in relation to advancement of informatization, and change of family conception.</p> <p>Data privacy, 2times, Explain outline how privacy is dealt mainly in informatization field, such as change led after using SNS, handheld terminal and so on.</p> <p>Privacy between members in family, 2times, Privacy between members in family in one house which began to be considered after the modern Enlightenment in Europe in general and Japan especially in architecture and urban field is explained</p> <p>Privacy dealt in houses rebuilt by successively in built-up area, 1time, Development in built-up area designed and built by successive rebuilding way is explained. And get a better grasp that understanding of privacy feeling of residents in such area is important</p> <p>Privacy after possession of territory, 2times, Formation of privacy feeling after possession of territory explained by proxemics theory is explained</p> <p>Privacy dealt after comparing windows of houses and buildings to eyes, 3times, Formation of privacy feeling after comparing windows of houses and buildings to ones eyes is explained</p> <p>Presentation by students, 2times, In addition to knowledge got from lecture, based on field survey and so on, presentation by students</p> <p>Confirmation of level of attainment, 1time,</p>					
----- Continue to 建築環境計画論 (2)					

建築環境計画論 (2)

Confirmation of level of attainment

[Class requirement]

General knowledge about proxemics (territorial) theory

[Method, Point of view, and Attainment levels of Evaluation]

Presentation in class - 50%, Report at the end of period - 50%

[Textbook]

Instructed during class

[Reference books, etc.]

(Reference books)

Distributed hand-out at lectures

[Regarding studies out of class (preparation and review)]

Please carefully read the materials distributed in the lesson and review the content of the lesson.

It would be good enough, if you could get an understanding that "privacy" thought to be general can change at pre-modern, modern, post-modern throughout the lesson.

To this end, it is recommended obtaining information on how privacy should be treated and the relation to place in architecture and city from newspapers, television, and the internet.

(Others (office hour, etc.))

[Grading evaluation] 1time presentation in lesson, and 1report after all lessons. [Office Hour] (reception of questions, etc.) Monday 12: 00-13: 00

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	人間生活環境デザイン論 Design Theory of Architecture and Human Environment	Affiliated department, Job title, Name	Graduate School of Engineering Professor, KANKI KIYOKO		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Tue.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
, 1 times, , 6times, , 2times, , 5times, , 1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築史学特論 History of Japanese Architecture	Affiliated department, Job title,Name	Graduate School of Engineering Professor,TOMISHIMA YOSHIAKI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,1time, ,5times, ,4times, ,4times, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築設計特論 Theory of Architectural Design, Adv.	Affiliated department, Job title,Name	Graduate School of Engineering Professor,HIRATA AKIHISA		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Tue.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,3times, ,2times, ,2times, ,2times, ,5times, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築論特論 Theory of Architecture, Adv.	Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, TAJI TAKAHIRO		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Tue.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,2times, ,2times, ,2times, ,1time, ,2times, ,2times, ,2times, ,1time, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築プロジェクトマネジメント論 Project Management	Affiliated department, Job title, Name	Graduate School of Engineering Professor, KANETA TAKASHI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Thu.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Overview of Project Management and Construction Management in Japan. Lecture and discussion.					
[Course Goals]					
To acquire the knowledge and the ability of project management.					
[Course Schedule and Contents]					
1-2. PM/CM Basic knowledge of project management and construction management. 3-8. PM/CM Projects Real projects and success in project management and construction management. Professional applications. 9-10. Method of PM/CM Methods and tools in project management and construction management. 11-12. Topics of PM/CM Topics of project management and construction management in Japan and overseas. 13-15. Discussion on PM/CM Discussion and feedback on project management and construction management.					
[Class requirement]					
Construction Engineering and Management I and II (undergraduate program) should be mastered.					
[Method, Point of view, and Attainment levels of Evaluation]					
Report. Attendance of lectures and site visit are also evaluated. Absolute evaluation (raw score) Attendance and individual reports will be assessed on the basis of achievement level for course goals. - Those who are absent more than four times will not be credited. - Students will submit all reports. The reports with originality will be given a high score.					
Continue to 建築プロジェクトマネジメント論(2)					

建築プロジェクトマネジメント論(2)

[Textbook]

Not used

[Reference books, etc.]

(**Reference books**)

Introduced during class

[Regarding studies out of class (preparation and review)]

Read the material introduced in the class.

(**Others (office hour, etc.)**)

Contact to:

kaneta@archi.kyoto-u.ac.jp

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	人間生活環境認知論 Theory of Cognition in Architecture and Human Environment	Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,ISHIDA TAIICHIROU		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Based on human visual perception in the living environment, lectures are given on fundamental concepts of visual environment design. Additionally, the basic matters and latest trends of related illuminating and color engineering will be explained. Students' presentations and class discussions will be adopted in order to obtain proficiency in understanding.					
[Course Goals]					
Understanding the human visual perception in the living environment, and being able to consider the problem of the visual environment from the basics by applying knowledge, such as visual perception, illuminating engineering, color engineering. Additionally, acquiring the knowledge and the fundamental concept for designing a visual environment that is suitable for human beings.					
[Course Schedule and Contents]					
1. Introduction (1 time) Visual environment and human beings Light and color of living environment 2. Description of light and color (2 times) Photometry and colorimetry system Development of color system Perception of light and color in the environment 3. Visual perception and its theory (1 time) Perception of brightness and color of a surface Spatial perception Theory of visual perception 4. Design of clear vision (1 time) Visibility Light source and its characteristics Color rendering 5. Design of lighting environment (2 times) Psychological evaluation of lighting environment Perception of brightness and activity of an illuminating space Effect of colored light illumination Light and physiological response Examples of lighting					
----- Continue to 人間生活環境認知論(2) -----					

人間生活環境認知論(2)

6. Visual function of seeing (1 time)

Field of view and eye movement

Central vision and peripheral vision

Visual search

7. Foundation of visual and color information (1 time)

Classification/search by color

Color category

Changes in color according to viewing conditions

8. Diversity of visual characteristics (1 time)

Visual impairment

Effect of aging

Color vision deficiency

Universal design

9. Psychology of color (1 time)

Color psychology

Color scheme

Architectural color

10. Student assignment presentation (4 times)

Student presentations and discussions on subjects of visual environment surveys will be conducted.

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

Report assignments, student presentations, and points (attendance and participation in class) are evaluated comprehensively.

[Textbook]

The lecture materials will be delivered in class.

[Reference books, etc.]

(Reference books)

Reference books are introduced in class.

[Regarding studies out of class (preparation and review)]

students are encouraged to deepen their understanding by reviewing each lecture. Students will also be required to reconsider our visual environments by applying the knowledge acquired in this course.

Continue to 人間生活環境認知論(3)

人間生活環境認知論(3)

(Others (office hour, etc.))

Questions are accepted during and after class or via e-mail.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	構造解析学特論 Analysis of Structures, Adv.		Affiliated department, Job title, Name	Graduate School of Engineering Professor, OOSAKI MAKOTO	
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Fundamentals of finite element method (FEM) are presented for based on variational and energy principles. Formulations are derived for 2D and 1D finite elements. Basic theories and algorithms for nonlinear FEM are also presented.					
[Course Goals]					
Understanding of fundamentals of FEM					
[Course Schedule and Contents]					
1-2. Fundamentals of FEM: Fundamental theories and concepts are presented. As a concrete example, formulations for 2D triangle element are derived. 3-4. Isoparametric and structural elements: Isoparametric and structural elements are presented. 5-6. Displacement method and stress method: Displacement method and stress method are presented, wherein displacement and stress are respectively selected as unknown variables. Based on Lagrange's multiplier method, hybrid displacement and stress methods are also presented. 7-9. Fundamentals of nonlinear FEM: Fundamentals of nonlinear FEM are presented. Based on Newton's method, basic theories and algorithms are presented for solving quasi-static and dynamic problems. 10-11. Elastoplastic and buckling analysis: Basic theories and algorithms for elastoplastic analysis and buckling analysis are presented. 12-14. Nonlinear beam elements: Nonlinear beam elements are formulated. Both geometric and material nonlinearities are discussed. 15. Final examination/ Learning achievement evaluation					
[Class requirement]					
Applied solid mechanics					
[Method, Point of view, and Attainment levels of Evaluation]					
Final examination					
----- Continue to 構造解析学特論(2) -----					

構造解析学特論(2)

[Textbook]

Not used

[Reference books, etc.]

(**Reference books**)

Introduced during class

[Regarding studies out of class (preparation and review)]

Explained in the class

(**Others (office hour, etc.)**)

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	コンクリート系構造特論 Concrete Structures, Adv.	Affiliated department, Job title, Name	Graduate School of Engineering Professor, NISHIYAMA MINEHIRO Graduate School of Engineering Associate Professor, TANI MASANORI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.4	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>This course will cover the structural design theory of concrete building structures (reinforced concrete buildings, steel-reinforced concrete buildings, prestressed concrete buildings, etc.), based on material theory and structural mechanics theory relating to concrete and steel. It will explain the rules for the composition of hardened concrete under multi-axial stresses and applications for methods of structural analyses such as the finite element method. Lectures will explain the relationship between properties related to durability (such as concrete carbonation and salt erosion) and concrete mixing, and describe measures to extend the lives of buildings and ensure durability in aggressive environments.</p>					
[Course Goals]					
<p>To understand and use the structural design theory of concrete building structures (reinforced concrete buildings, steel-reinforced concrete buildings, prestressed concrete buildings, etc.), based on material theory and structural mechanics theory relating to concrete and steel. To understand the rules for the composition of hardened concrete under multi-axial stresses, and be able to apply it in methods of structural analyses such as the finite element method. To understand the relationship between properties related to durability (such as concrete carbonation and salt erosion) and concrete mixing, and be able to propose measures to extend the lives of buildings and ensure durability in aggressive environments.</p>					
[Course Schedule and Contents]					
<p>Ultimate Limit State of Concrete Structural Members (3 classes) These classes will explain the basic knowledge and design methods relating to material ductility capacity that are considered to be necessary for high earthquake-resistance in concrete structures. Specifically, these classes will describe basic theory relating to the effect of confined concrete on mechanisms resisting bending in plastic hinge regions of beams and columns, and basic mechanisms resisting shear forces. Additionally, these classes will introduce methods of calculating deformability of members based on ultimate flexural strength, ultimate shear strength, and the ratio of these strengths used in performance evaluation design method.</p> <p>Long-term Properties of Concrete Structural Members (3 classes) These lectures will explain cracks and deformation, which can cause problems for concrete members under long-term loads. Methods for assessing creep and dry-shrinkage of concrete and the influence exerted by such factors on individual member and a whole structure will be described.</p> <p>Earthquake-resistance Evaluation and Strengthening for Existing Reinforced Concrete Buildings (3 classes) These classes will explain seismic strengthening design and the construction methods used, based on the methods and results of evaluating earthquake-resistance capacity of existing reinforced concrete buildings. Evaluating buildings' strength will be described in detail, based on determination of the aging deterioration of a building based on concrete carbonation; irregularity in elevation and in plan of a building; and the deformability and ultimate strength of members. New upgrading construction methods will also be introduced.</p>					
Continue to コンクリート系構造特論(2)					

コンクリート系構造特論(2)

Post-Earthquake Diagnosis of Damaged Reinforced Concrete Buildings (3 classes)

These lectures will describe methods for determining the degree of emergency risk and of classifying the level of damage as methods for diagnosing a damaged reinforced concrete building after an earthquake. The objectives, positioning, specific procedures, and theoretical background of the evaluation methods will be explained with examples of buildings damaged by past earthquakes.

Prestressed Concrete Structures: Design and Theory (3 classes)

These lectures will explain the behavior of prestressed concrete (PC) structures under service load and in earthquakes. PC structural member analyses, and structural design theory that uses such analysis, will be described. These lectures will describe analyses of the response of PC building structures to seismic excitations based on PC structure's deformation and stress redistribution based on concrete creep; mechanisms that resist bending and shear; and the hysteretic restoring force characteristics of members. They will also explain the structural design of PC buildings.

[Class requirement]

Basic knowledge of concrete materials and architectural structures is assumed.

[Method, Point of view, and Attainment levels of Evaluation]

Results will be assessed through a combination of examination results, submitted reports, and attendance.

[Textbook]

Instructed during class

[Reference books, etc.]

(Reference books)

R. Park and T. Paulay 『Reinforced Concrete Structures』 (John Wiley&Sons)

T. Paulay and N. J. Priestley 『Seismic Design of Reinforced Concrete and Masonry Buildings』 (John Wiley&Sons)

T. Y. Lin 『Design of Prestressed Concrete Structures』 (John Wiley&Sons)

M. P. Collins and D. Mitchell 『Prestressed Concrete Structures』 (Prentice Hall)

The Japan Building Disaster Prevention Association 『Seismic Evaluation and Retrofit』

Other texts will be introduced in lectures.

[Regarding studies out of class (preparation and review)]

Active participation in lectures, with questions, is expected.

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	耐震構造特論 Earthquake Resistant Structures, Adv.	Affiliated department, Job title, Name	Graduate School of Engineering Professor, NISHIYAMA MINEHIRO Graduate School of Engineering Associate Professor, TANI MASANORI		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Tue.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>These lectures will discuss the basic theory, applied theory, and practical design methods associated with earthquake-resistant design of architectural structures. Lectures will cover the basic elements of earthquake-resistant design: benchmarks and strength rankings for each structural element (pillars, beams, walls, etc.) and their meaning in earthquake-resistant design; the relationship between irregularities in horizontal and elevational planes in the frame and earthquake-response; mechanisms for consuming seismic energy, and desirable structural collapse behavior. The lectures will also explain how to use the strength, rigidity, hysteresis restoring force characteristics, and equivalent viscous damping coefficient of materials and frame elements (obtained from structural testing) in earthquake-resistant design. The lectures will also describe methods of approximation such as the equivalent linearizing method, with which one can easily deal with elastic-plastic response. Appropriate exercises will be given.</p>					
[Course Goals]					
<p>To understand the basic theory, applied theory, and practical design methods associated with earthquake-resistant design of architectural structures, and how to evaluate earthquake-resistant design. To understand current earthquake-resistant design techniques in Japan and overseas (and the differences between those methods) and gain the ability to conduct earthquake-resistant design for simple real structures and evaluate earthquake-resistance.</p>					
[Course Schedule and Contents]					
<p>Lessons from the previous earthquakes, 3 times, Typical damages and their causes in the earthquakes in 1990s and 2000s are discussed.</p> <p>Seismic design using the capacity design concept, 4 times, Seismic design using the capacity design concept are discussed. The topics are Essentials of structural systems, Definition of design quantities, and Philology of capacity design.</p> <p>, 4 times,</p> <p>, 4 times,</p>					
[Class requirement]					
<p>Knowledge of vibration theory and knowledge concerning reinforced concrete structures is assumed.</p>					
[Method, Point of view, and Attainment levels of Evaluation]					
<p>Results will be assessed through a combination of examination results, submitted reports, and attendance.</p>					
<p>----- Continue to 耐震構造特論(2)</p>					

耐震構造特論(2)

[Textbook]

No other materials are specified. Material will be distributed as appropriate.
Lecture materials, exercises, etc., will be distributed through KULASIS.

[Reference books, etc.]

(Reference books)

Some chapters from Seismic Design of Reinforced Concrete and Masonry Buildings by Paulay and Priestley will be distributed for reference.

[Regarding studies out of class (preparation and review)]

R. Park and T. Paulay, Reinforced Concrete Structures, John Wiley & Sons

T. Paulay and N. J. Priestley, Seismic Design of Reinforced Concrete and Masonry Buildings, John Wiley & Sons

Other texts will be introduced during lectures.

(Others (office hour, etc.))

Active participation in lectures, with questions, is expected.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	鋼構造特論 Steel Structures, Adv.	Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, KOETAKA YUUJI Graduate School of Engineering Assistant Professor, TAKATSUKA KOHEI		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Wed.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,2times, ,1time, ,3times, ,2times, ,3times, ,1time, ,2times, ,2times, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	構造安全制御 Control for Structural Safety	Affiliated department, Job title, Name	Disaster Prevention Research Institute Professor, IKEDA YOSHIKI Disaster Prevention Research Institute Associate Professor, KURATA MASAHIRO		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
Earthquake resistant structure, base isolation, protective systems, 1time, Tuned mass damper, 1time, Active control, 1time, Structures with tuned mass dampers, 1time, Displacement-dependent dampers, 1time, Velocity-dependent dampers, 1time, Base isolation of lateral motions, 1time, Dynamic characteristic evaluation of building using vibration monitoring, 1time, Fundamentals of seismic design, 1time, Simple structural performance evaluation, 1time, Probabilistic assessment of seismic performance, 2times, Actual Effect of Seismic Retrofit, 2times, Damage evaluation, 1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
----- Continue to 構造安全制御(2) -----					

構造安全制御(2)

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築振動論 Dynamic Response of Building Structures	Affiliated department, Job title,Name	Graduate School of Engineering Professor,HAYASHI YASUHIRO Graduate School of Engineering Associate Professor, S U G I N O M I N A Disaster Prevention Research Institute Associate Professor,NISHIJIMA KAZUYOSHI		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Wed.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>In designing earthquake-proof structures, it is important to consider the nonlinearity and coupled behavior of the construction site ground as well as the structure, and there is a need for more practical design plans. In this course, we will first study major theories related to structure earthquake response evaluation, followed by analytical methods and earthquake-proof design methods involving dynamic interactive factors related to the ground and the coupling of the structure.</p>					
[Course Goals]					
<p>To enable accurate evaluation of the behavior of buildings in earthquakes, as well as accurate evaluation of earthquake resistance.</p>					
[Course Schedule and Contents]					
<p>Basics of frequency analysis and time-history analysis (4 classes) Based on the example of earthquake resistance evaluation in single degree of freedom systems, we will explain frequency analysis and time-history analysis in an integrated fashion, explaining the characteristics of both as well as points to bear in mind in analysis from a practical point of view.</p> <p>Structure response analysis and damping evaluation (4 classes) We will explain an evaluation method involving the damping ratio of the structure based on experiments and observations. Also, the damping evaluation method will be explained as a means of creating an earthquake response analysis model of the structure.</p> <p>Dynamic interaction between the structure and the ground (2 classes) We will discuss the relationship between the characteristics of soil springs and foundation-input-motion as expressions of dynamic interaction on the one hand, and building response on the other. Next, we will discuss the influence of differences in the ground and the foundation type upon interactive characteristics. Finally, we will explain practical analysis methods, bearing in mind dynamic interaction.</p> <p>Random vibration theory (5 classes) We will discuss the basics of random vibration theory, which evaluates the response of the structure as a stochastic quantity. In particular, we will explain linear stationary random response, non-stationary random response, and first passage theory.</p>					
<p>----- Continue to 建築振動論(2)</p>					

建築振動論(2)

[Class requirement]

Basic knowledge of vibration theory (linear response in single degree of freedom systems and multiple degree of freedom systems) is required.

[Method, Point of view, and Attainment levels of Evaluation]

Grading is based on both attendance and reports.

[Textbook]

Not used

[Reference books, etc.]

(Reference books)

[Regarding studies out of class (preparation and review)]

Review contents of Earthquake Resistant Structures which is a course of undergraduate school before taking classes. Review theories explained in classes about our hour every time.

(Others (office hour, etc.))

For details of office hours, please check KULASIS.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	都市災害管理学 Urban Disaster Management		Affiliated department, Job title, Name	Disaster Prevention Research Institute Professor, MATSUSHIMA SHINICHI Disaster Prevention Research Institute Associate Professor, NISHINO TOMOAKI	
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Tue.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>The natural disaster to urban society is getting complex and difficult to predict along with the density growth and high performance build-up, and so the risk of the disaster has risen more and more in recent years. Therefore, the necessity of the integrated disaster mitigation measures before the disaster, immediately after the disaster, and long after the disaster is pointed out. In this lecture, we provide the lessons learned from earthquake disaster in the past, prediction methods of strong motions and building damages, earthquake-proof performance evaluation technique in a real building, and a pros and cons of the present building code for the disaster mitigation.</p>					
[Course Goals]					
<p>Understand the seismic vulnerability evaluation of structures and urban systems, the disaster impact evaluation scheme, and the disaster prevention countermeasures. Then learn basic knowledge needed to foresee and prepare for the earthquake disaster in future by themselves.</p>					
[Course Schedule and Contents]					
<p>Mechanism of disasters by earthquakes, 4 times, What is urban disaster management? Mechanism of disasters by earthquakes, source mechanisms for disastrous earthquakes in and around Japan, ground motion generation process, seismic intensity and magnitude, characteristics of observed ground motion will be explained from previous earthquake disasters.</p> <p>Basics of wave propagation and strong ground motion, 3 times, Wave propagation analysis and strong motion simulation</p> <p>Structural response estimation, 3 times, Modeling of structures and prediction of their responses</p> <p>Mechanism of post-earthquake fires and disaster estimation, 3 times, Earthquake risk analysis taking into account of the post-earthquake fires</p> <p>Mechanism of Tsunami and Tsunami fire and disaster estimation, 2 times, Evaluation of hazard by Tsunami fires</p>					
[Class requirement]					
Basic knowledge of seismic design and earthquake resistant structure					
[Method, Point of view, and Attainment levels of Evaluation]					
Grading will be based on the attendance and report.					
Continue to 都市災害管理学(2)					

都市災害管理学(2)

[Textbook]

[Reference books, etc.]

(Reference books)

Earthquake Ground Motion and Strong Motion Prediction - Key items for learning the basics - (AIJ)\Ground motion - phenomena and theory (AIJ)\Vibration of Architecture (Asakura Publishing)\Urban disaster prevention: Theory and practice of earthquake countermeasures (Gakugei Shuppan)\Building fire prevention (Asakura Publishing)\Introduction to building fire safety engineering (The Building Center of Japan)

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築風工学 Environmental Wind Engineering	Affiliated department, Job title, Name	Disaster Prevention Research Institute Professor, MARUYAMA TAKASHI Disaster Prevention Research Institute Associate Professor, NISHIJIMA KAZUYOSHI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Thu.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>This course will explain wind characteristics which is essential to wind resistant design of architecture and evaluation of wind environment including the mechanism of wind genesis and the effect of weather condition, topography and surface roughness. The characteristics of strong wind of typhoon or tornado causing damage to buildings is discussed. We will provide an overview of strong wind damage and explain the method of damage mitigation and disaster prevention. We will discuss the flow around building, the wind pressure and force on building, and the vibration of building caused by wind. We will provide a short history of wind resistant design and some exercises of calculating wind load on building.</p>					
[Course Goals]					
Acquisition of knowledge on prediction and evaluation for wind load and wind environment around new construction planned building.					
[Course Schedule and Contents]					
<p>Mechanism of wind genesis and wind characteristics, 3 classes: This course will explain the mean and instantaneous wind speed, i.e. the characteristics of wind in atmospheric boundary layer, which is essential to wind resistant design of architecture. We will discuss the cause of wind genesis by examining the forcing mechanism and the balancing wind speed and direction.</p> <p>Strong wind disaster in Japan and its characteristics, 2 classes: This course will explain the strong wind characteristics of typhoon and tornado causing damage to buildings and houses by comparing other natural disasters. We will have an overview of historical strong wind damage in Japan and explain the features.</p> <p>Wind flow around object, 2 classes: We will discuss the foundation of fluid dynamics describing the flow around a body which is essential for the evaluation of wind load on buildings and demonstrate the wind flows around buildings and houses.</p> <p>Method of wind environment prediction - 1, 1 class: This class will drive the similarity law for wind tunnel test using scale models which is one of useful tools for wind load evaluation. We will also explain the wind tunnel test.</p> <p>Method of wind environment prediction - 2, 2 classes: These classes will explain the foundation of fluid dynamics and provide the examples of calculation.</p> <p>History of wind resistant design and wind load evaluation, 2 classes: These courses will provide an overview of the history of wind load evaluation in the Recommendations for Loads on Highrisebuildings.</p>					
----- Continue to 建築風工学(2) -----					

建築風工学(2)

Procedure of wind load evaluation based on the Building Standards Act and AIJ Recommendations for Loads on Buildings, 2 classes:

These courses will provide the evaluation method of design wind load on real buildings based on the Building Standards Act, Building Standard Law Enforcement Order and AIJ Recommendations for Loads on Buildings and practical training of calculation. We will explain the cautionary note on strong wind cause by tornado such as the wind glass breakage which is not include the law.

Confirmation of learning attainment, 1 class:

This class will summarize the course and confirm learning attainment.

[Class requirement]

Architectural structural engineering, fluid dynamics and meteorology will be desirable but not be obligated.

[Method, Point of view, and Attainment levels of Evaluation]

By reports or examination

[Textbook]

Instructed during class

Non, References, documents will be distributed

[Reference books, etc.]

(Reference books)

Introduced during class

Non

[Regarding studies out of class (preparation and review)]

To be indicated during the lecture.

(Others (office hour, etc.))

Questions : directing during class

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築技術者倫理 Architectural Engineer Ethics		Affiliated department, Job title, Name	Graduate School of Engineering Professor, TAKANO YASUSHI Graduate School of Engineering Professor, NISHIYAMA MINEHIRO Disaster Prevention Research Institute Professor, MAKI NORIO Graduate School of Engineering Associate Professor, YOSHIDA TETSU Disaster Prevention Research Institute Associate Professor, NISHINO TOMOAKI	
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Thu.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>Rapid developments in science and technology since the start of the 21st century have made our lives surprisingly convenient and rich. On the other hand, it should be noted that misuse of science and technology carries the risks of destroying human life as well as the environment. This risk is held by architectural engineers.</p> <p>In this course, as well as broadly considering the nature of the ethics demanded of architectural engineers in terms of the relationship between the ethics of science and technology and the ethics of engineering, we will deal with specific ethical issues that have arisen in the processes of architectural design, structure design, environment and utilities design, and building production, operation, and maintenance. By thinking concretely about how best to deal with these issues, students will nurture robust senses of ethics and responsibility. This course will be meaningful for students who intend to undertake an internship because it will allow them to acquire an awareness of the importance of responsibility for architectural designers (which is necessary in actual practice) in advance.</p>					
[Course Goals]					
[Course Schedule and Contents]					
<p>Architectural Design and Ethics (6 classes)</p> <ol style="list-style-type: none"> 1. Architects/registered architects and architectural ethics (architects and ethics, the case of Registered Architect Aneha, Architects and Building Engineers Association ethics regulations, architectural design and ethical issues, etc.) 2. Landscape issues and architectural ethics (landscape issues and ethical issues, landscape issues and architects/registered architects, ethical issues relating to landscape disputes in Kyoto, etc.) 3. Environmental and energy issues and architectural ethics (architecture and reuse, environmental and ethical issues and ethics, environmental consciousness and architectural technology, etc.) 4. Ideas and technology concerning nature and architecture (forest resources and architecture, consideration and control of nature, architectural reuse technology and concepts, etc.) <p>Structural Design and Ethics (5 classes)</p> <p>The fraudulent earthquake-resistance issue brought about real ethical problems, and the safety and security of</p>					
Continue to 建築技術者倫理(2)					

建築技術者倫理(2)

a building as secured by its architectural structure is extremely important. It is imperative that structural designers have a sense of engineering ethics. Through consideration of examples, roleplaying, and debates, we will think about what kinds of norms structural engineers should adhere to.

1. Adding water to pre-mix concrete (AIJ Ethics Committee e-learning), the value of human life, etc.
2. The Building Standards Act as a minimum standard? (AIJ WG Report on Minimum Standards)
3. Defective steel frames, earthquake damage to buildings created with hand-welded steel frames, and activities to eradicate these problems.
4. As expected seismic motion increases, how should engineers design earthquake ground motion? The case of Uemachi fault zone earthquakes.
5. Problems concerning setting strength standards and earthquake reinforcement (determination based on earthquake-resistance grades and seismic index).

Environment and Utility Design and Ethics (3 classes)

Environmental issues are taken very seriously in architectural design, construction, operation, and lifespan; the role that environmental and utility design plays has increased to an unprecedented level. Accordingly, the demand that engineers involved in environmental and utility design have an ethical perspective has also increased. Here, we will consider the ethical issues relating to environment and utility design through the following examples.

1. We will consider ethics for engineers on themes such as noise problems in architectural and urban spaces, examples of audio evacuation guidance/disaster prevention radio.
2. We will consider ethics for engineers through issues such as the deterioration of murals in burial mound mural preservation zones, and accidents caused by large rotating doors.

Student Assessment - 1 class: Assessment of the level of learning achieved.

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

Based on written reports

[Textbook]

Instructed during class

[Reference books, etc.]

(Reference books)

Introduced during class

[Regarding studies out of class (preparation and review)]

Continue to 建築技術者倫理(3)

建築技術者倫理(3)

(Others (office hour, etc.))

Active participation in lectures is expected in terms of questions and the expression of opinions.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築環境物理学特論 Physics in Architectural Environmental Engineering, Adv.		Affiliated department, Job title, Name	Graduate School of Engineering Professor, OGURA DAISUKE	
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Mon.2	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>From among the architectural environment physics, we discuss the underlying theory and application of prediction and control method of heat, humidity, and air that is required when performing environmental target values of the planning and design of building equipment. From the standpoint of transport phenomena, the basic theory concerning the transport of heat, mass and momentum is lectured and the perceptions and analysis method of phenomena that can be applied to the prediction method of each physical quantity in the built environment and equipment.</p>					
[Course Goals]					
<p>Mechanism of transport phenomena of heat, mass and momentum in the built environment and building equipment, similarity relationship, The students acquire proficiency in the concept of balance equations, grasping the microscopic or macroscopic transport phenomena.</p>					
[Course Schedule and Contents]					
<p>General remark, 1time, The outline of lecture contents and how to proceed class are described. Transport of momentum, 4times, the mechanism concerning the transport of momentum of isothermal fluid and explain the balance formula of momentum transport are explained. The flow of the turbulent flow field, the coefficient of friction and the wind speed distribution in the circular tube and the flat plate are explained. Transport of heat, 5times, The mechanism relating to heat transport of fluid with temperature change and the balance formula of heat transport are explained. The heat transfer in the turbulent flow field, the temperature distribution in the circular pipe and the flat plate, the heat transfer amount of the heat exchanger, and the like are described. Transport of mass, 4times, The mechanism concerning multicomponent fluid movement and the balance formula of the transport of each component are explained. Transportation of substances in turbulent flow field, evaporation from porous material, principle of psychrometer etc. are explained. Academic achievement test, 1time, Academic achievement degree is confirmed.</p>					
[Class requirement]					
<p>It is assumed that you take undergraduate subjects such as Building Environment Engineering I, Building Facilities System.</p>					
[Method, Point of view, and Attainment levels of Evaluation]					
<p>Terminal Exam.</p>					
Continue to 建築環境物理学特論(2)					

建築環境物理学特論(2)

[Textbook]

Transport Phenomena, R. Byron Bird, Warren E. Stewart and Edwin N. Lightfoot, John Wiley amp Sons, Inc., Revised Second Edition, 2007

[Reference books, etc.]

(Reference books)

Supplemental textbook is instructed during lecture.

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code		G-ENG04 5B054 LJ74			
Course title <English>	建築設備システム特論 Building Systems		Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, IBA CHIEMI	
Target year	1st year students or above	Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Wed.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>空調に用いられる各種設備に関して、その容量の決定法、建築計画と統合したシステムとしての設計方法について講義する。最適設計の観点より、経済性や温熱環境性などの評価基準と制約条件、それらの物理的・数学的モデル化、実行可能解の探索と種々の最適化の手法などについても説明する。以上の基礎として、熱水分収支の考え方、熱交換器周りの伝熱、配管・ダクト・ポンプなど搬送系の扱い、吸収式冷凍機をはじめとする相変化を伴う物質移動の理論についても講述する。</p>					
[Course Goals]					
建築設備システムにおける熱物質収支の考え方とシステムとしての捉え方を習熟する。					
[Course Schedule and Contents]					
<p>概論(1回) 講義内容の概要説明と授業の進め方の説明を行う。</p> <p>設計問題(3回) 建築設備システムの定義、設備計画の考え方、経済をはじめとする評価の考え方と、最適計画法の必要性について説明する。</p> <p>建築設備システムを構成する要素(3回) 熱交換器、ファン、二種混合媒質、相似側などの建築設備に関連する基礎的事項を説明する。</p> <p>最適化問題(2回) 設備システムを対象として、最適化問題としての定式化を行う。</p> <p>最適化手法(6回) 微分法をはじめとし、探索法、線形計画法、動的計画法など種々の最適化手法について説明する。</p>					
[Class requirement]					
建築環境工学、建築設備システムなどの学部科目の履修を前提とする。					
[Method, Point of view, and Attainment levels of Evaluation]					
講義における発表とレポートおよび期末試験による。					
Continue to 建築設備システム特論 (2)					

建築設備システム特論 (2)

[Textbook]

Design of Thermal Systems, W. F. Stoeker, McGRAW-HILL KOGAKUSHA, LTD, 1980

[Reference books, etc.]

(Reference books)

[Regarding studies out of class (preparation and review)]

適宜指示する

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築地盤工学 Building Geoenvironment Engineering	Affiliated department, Job title, Name	Graduate School of Engineering Professor, TAKEWAKI IZURU Graduate School of Engineering Associate Professor, KOHEI FUJITA		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Tue.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
Wave propagation theories are explained first for 1D, 2D and 3D models. 1D multi-reflection problems of waves are also formulated and explained. Based on these theories, methods for construction of design earthquake ground motions are presented. Soil-structure interaction problems are stated finally for the purpose of developing more rational design methods for building structures.					
[Course Goals]					
Obtain the knowledge on wave propagation theories and 1D multi-reflection theory of waves. Furthermore obtain the knowledge on construction of design earthquake ground motions and soil-structure interaction.					
[Course Schedule and Contents]					
Introduction and in-situ (field) tests, 1 class, Introduction of course is conducted and in-situ (field) tests are explained.					
Construction of design earthquake ground motions, 1 class, Construction of design earthquake ground motions is discussed. Response spectrum, Fourier spectrum and power spectrum are also discussed from the viewpoint of construction of design earthquake ground motions.					
Soil-structure interaction, 2 classes, The problem of soil-structure interaction is explained and various models for this problem are introduced.					
Exercise on structural design considering soil-structure interaction, 1 class, Exercise on structural design considering soil-structure interaction is conducted.					
Seismic damage to soil, pile and foundation, 1 class, Seismic damage to soil, pile and foundation is explained.					
Seismic upgrading (structures), 1 class, Seismic upgrading (structures) is discussed.					
Seismic upgrading (soil, pile and foundation), 1 class, Seismic upgrading (soil, pile and foundation) is discussed.					
Wave propagation (No.1), 1 class, 1D wave propagation problems are formulated and explained from its fundamentals.					
Wave propagation (No.2), 1 class, 1D multi-reflection problems of waves are formulated and explained. The introduction of the program of SHAKE is also made.					
----- Continue to 建築地盤工学(2)					

建築地盤工学(2)

Wave propagation (No.3), 1 class,
3D wave propagation problems are formulated and explained.

Wave propagation (No.4), 1 class,
2D wave propagation problems are formulated and explained as the simplification of 3D problems.

Wave propagation (No.5), 1 class,
Surface waves (Rayleigh and Love waves) are explained from its fundamentals.

Exercise on wave propagation, 1 class,
Exercise of wave propagation is conducted. 1D, 2D wave propagations are treated.

Confirmation of the Learning Degree, 1 class,

[Class requirement]

Basics of mechanics. Fundamentals of vibration and wave propagation. Preliminary of linear algebra and calculus.

[Method, Point of view, and Attainment levels of Evaluation]

Evaluated by the term examination at the end of the semester.

[Textbook]

Not used

[Reference books, etc.]

(Reference books)

Suggest in the class.

[Regarding studies out of class (preparation and review)]

Solve the exercises presented in the first class in parallel to the class advancement.

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	構造材料特論 Theory of Structural Materials, Adv.	Affiliated department, Job title,Name	Graduate School of Engineering Professor,KANEKO YOSHIO		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Tue.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>Compositions, constitutive laws and applications of major structural materials including concrete and steel are lectured. Demanded performances of structural materials are explained from the view point of mutual dependencies between materials and structural systems. Furthermore, newly developed high performance materials (HPM), structural systems using HPM, and environmental control technique using structural materials are discussed.</p>					
[Course Goals]					
<p>1) To understand Compositions, constitutive laws and applications of major structural materials including concrete and steel as well as continual process of research, development and design from the material level up to the structural level. 2) To understand engineering meanings of structural materials in development of new structural systems and research trend of new structural materials. 3) To understand how to apply the varied structural materials into new structural systems and development of environmental control systems.</p>					
[Course Schedule and Contents]					
<p>,1time, ,4times, Guidance and Structural Material (1) Basic Theory,4times,Basic properties, plastic theory, fracture theory, and softening characteristics of cementitious composites and steel are lectured. Fundamental principle of material constitutive laws and mathematical model of materials are explained. Structural Material (2) New material,5times,Research trend and application of new materials are lectured. Fiber reinforced cementitious composites, intelligent-smart material, application of structural materials into new structural systems are explained. Structural Material (3) Environmental Control,1time, Environmental controls of concrete and metallic materials are lectured. Health monitoring of concrete, environmental control systems using steel, production and environment of metallic materials are explained.</p>					
[Class requirement]					
Basic knowledge on concrete, steel and structures.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be made based on attendance to lectures and submissions of assignments.					
----- Continue to 構造材料特論(2)					

構造材料特論(2)

[Textbook]

Not assigned.

[Reference books, etc.]

(Reference books)

H. Mihashi, K. Rokugo and M. Kunieda (Editors): "Crack of Concrete and Fracture Mechanics," Gihodo Publisher, Tokyo, July 2010, (in Japanese).

[Regarding studies out of class (preparation and review)]

It should be studied based on pre-study and review.

(Others (office hour, etc.))

It is encouraged to ask questions and attend with positive mind.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	居住空間計画学 Dwelling Planning	Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,YANAGISAWA KIWAMU		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Wed.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,1time, ,1time, ,2times, ,5times, ,5times, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	静肃環境工学 Silence amenity engineering	Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, OOTANI MAKOTO Graduate School of Engineering Professor, TAKANO YASUSHI		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Tue.1	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
All energy consuming systems emit acoustical sound, which give us information we need to know including danger. However, sound may also prevents us enjoying music or give us unpleasant feelings, as noise. Thus, it is very important to control sound or noise from various system. Objective of this silence amenity engineering course is to understand sound radiation theory and mechanism which is necessary to improve our acoustical environment.					
[Course Goals]					
Objective of this silence amenity engineering course is to get basic understand of sound radiation theory and mechanism, which is necessary to control the noise.					
[Course Schedule and Contents]					
Objective, 1time, Objective and context of the course Wave propagation theory, 3times, Basic equations of wave propagation within air and solid Sound Generation, 2times, Basic equations of fluid dynamic noise and vibration noise Sound control, 2times, Typical noise control methods based on sound generation and propagation theory Standard and Regulation, 1time, Important noise regulation and standards Group discussion 1, 3times, Presentation and discussion based on academic paper in Japanese on sound source identification and generation and propagation control of sound Group discussion 2, 3times, Presentation and discussion based on latest academic paper in English on sound control					
[Class requirement]					
Understanding of geometrical acoustics within the texts for Environmental Engineering of Architecture II, or equivalent is required.					
[Method, Point of view, and Attainment levels of Evaluation]					
Overall grading will be given based on student presentation (50%), and report (50%).					
[Textbook]					
[Reference books, etc.]					
(Reference books) Frank Fahy, Sound and Structural Vibration, Academic Press, etc					
[Regarding studies out of class (preparation and review)]					
Find issues on sound amenity, read related papers and propose solutions.					
(Others (office hour, etc.))					
Prior appointment is required in advance for the face to face meeting.					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	音響空間設計論 Theory of Acoustic Space Design in Architecture	Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, OOTANI MAKOTO Graduate School of Engineering Professor, TAKANO YASUSHI		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Mon.3	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>For the realization of optimal acoustic space design in architecture, it is essential to understand</p> <ul style="list-style-type: none"> - Prediction of physical parameters of sound field in architecture - Measurement and analysis of sound field - Perception and cognition of acoustic space <p>with in-depth understanding of acoustics, psychology of hearing, and acoustic signal processing. This lecture introduces these theories and methods from physical and psychological viewpoints and recent research trend. In addition, presentation and discussion by students are conducted for better understandings.</p>					
[Course Goals]					
<p>In-depth understandings of</p> <ul style="list-style-type: none"> - Prediction of acoustic space - Measurement and analysis of acoustic space - Theory and method of perceptual evaluation for optimal acoustic space desing in architecture. 					
[Course Schedule and Contents]					
<p>Introduction, 1time, Overview Acoustics, 1time, Acoustics for understanding behavior of sound field and sound wave Acoustic signal processing, 1time, Acoustic signal processing for measurement, analysis, and control of sound field Auditory perception, 2times, Mechanism of spatial and temporal perception of sound field, based on psychology of hearing. Multi-modal perception between hearing and other modalities. Physical parameters of sound field and its prediction, 2times, Physical parameters for measuring sound field quality. Theories and methods for predicting physical parameters by computational simulations. Measurement and analysis of sound field, 2times, Basic measurement and analysis method of physical information in sound field. Measurement and analysis of spatial information of sound field. Auralization of sound field, 2times, Auralization of acoustic space in architecture in its design stage. Theories and methods of acoustic space. Presentation, 4times, Participants#039 presentation and discussion on research survey in the field of acoustic environment.</p>					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Presentation (50%) and report (50%)					
Continue to 音響空間設計論(2)					

音響空間設計論(2)

[Textbook]

[Reference books, etc.]

(Reference books)

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	デザイン方法論 Design Methodology	Affiliated department, Job title,Name	Graduate School of Engineering Professor,KANKI KIYOKO Disaster Prevention Research Institute Professor,MAKI NORIO Graduate School of Engineering Professor,MIURA KEN Graduate School of Engineering Professor,HIRATA AKIHISA		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Fri.4	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>In the 21st century, it is required to reconsider what is a design and what is a design method. The era a simple artifact is requested is over, and we have to create environmental and social systems including various relations such as the relation among artifacts, the relation between artifacts and men amp environment, and the relation among human beings. The role of design is to develop ldquoHuman Centered Design (HCD)rdquo which creates meaningful experiences through system integration of man-environmental systems. In this lecture, we explore the design methodology as a basic theory of design after 1960rsquos, explaining design problems, design process, design method, design thinking, and design science based on the design studies in various design fields such as craft, product, architecture, city, landscape, environment, community, education, society, mobility, business, and information. Especially to investigate the mechanism of creative design thinking is very important to solve the daily life problems and many difficult problems human kind encounters. Therefore we explain the design semiotics to clarify the mechanism of generating creative designs and to show valuable examples.</p>					
[Course Goals]					
[Course Schedule and Contents]					
,1time, ,3times, ,3times, ,3times, ,3times, ,3times, ,2times,					
[Class requirement]					
None					
Continue to デザイン方法論(2)					

デザイン方法論(2)

[Method, Point of view, and Attainment levels of Evaluation]

[Textbook]

[Reference books, etc.]

(Reference books)

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築構造デザイン論 Design Theory of Architectural Structure	Affiliated department, Job title, Name	Graduate School of Engineering Professor, HAYASHI YASUHIRO Graduate School of Engineering Associate Professor, SUGINO MINA		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Fri.4	Class style	Lecture	Language	Japanese
[Outline and Purpose of the Course]					
<p>This course will discuss the following necessary components of urban and architectural structural design:</p> <p>#8226 Means of developing practical design solutions under difficult conditions or with complex design requirements</p> <p>#8226 Practical challenges and solution methods of structural design</p> <p>#8226 Ways of addressing extreme situations and meeting new challenges</p>					
[Course Goals]					
<p>The purpose of this course is to teach students the knowledge they need for actual architectural structural design, based on various basic theories of architectural structure (mechanics, vibrational theory, probability theory, materials science, various structures).</p>					
[Course Schedule and Contents]					
<p>Structures and structural capabilities (3 classes)</p> <p>We will discuss the structural capabilities of structures and ways of thinking about their evaluation.</p> <p>#8226 History of earthquake damage and earthquake-proofing standards, domestic-international comparison of earthquake-proofing standards, minimum levels and unexpected loads, tsunami</p> <p>#8226 Life cycle design, risk evaluation and risk management, insurance</p> <p>#8226 Capability design, capability display, capability control, damage control, monitoring, structural and non-structural capabilities, etc.</p> <p>Orientation of structural design (6 classes)</p> <p>We will discuss structural methods, construction methods, and building methods, based on case studies.</p> <p>Differences in structures depending on structural materials (concrete, iron, wood, glass, paper, plastic, soil, etc.), innovative structural materials</p> <p>Seismic isolation</p> <p>Vibration control</p> <p>Challenges related to breadth and length</p> <p>Challenges related to height</p> <p>New forms</p> <p>Creating beautiful forms</p> <p>Frameworks of living things, structures of manmade objects such as rockets, aircraft, and cars</p> <p>Regional and cultural revitalization design (2 classes)</p> <p>Preservation and revitalization of cultural properties, traditional wooden construction, historical structures</p> <p>Regional and structural design for restoration before and after earthquakes (post-disaster housing, temporary housing, tsunami shelter buildings, high functionalization and structural capabilities of cities, etc.)</p> <p>Studying structural design case studies (3 classes)</p>					
Continue to 建築構造デザイン論(2)					

建築構造デザイン論(2)

Two classes by outside lecturers, one field trip (tentative)

Design theme presentation (1 class)

Based on assigned themes, students conduct presentations, then these are discussed and critiqued

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

Overall grade based on attendance and presentation results of structural design themes.

[Textbook]

Not used

In addition to distributing in-class printouts, reference works will be indicated in class.

[Reference books, etc.]

(Reference books)

[Regarding studies out of class (preparation and review)]

Review contents of previous classes before taking every class.

(Others (office hour, etc.))

In the event that many students wish to take the course, preference may be given to students in Postgraduate Integrated Course Program of Design Studies and Architecture and Architectural Engineering.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築学コミュニケーション (専門英語) Architecture Communication	Affiliated department, Job title,Name	Part-time Lecturer,TSOI, Esther Graduate School of Engineering Professor,DANIELL , Thomas Charles		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Thu.3	Class style	Lecture	Language	English
[Outline and Purpose of the Course]					
<p>English is the global working language of arts and science, as well as in international project collaborations. Japanese architectural design sensibilities are well sought after overseas. On the other hand, prominent clients likes to employ international talents to provide a view outside the box. Being able to lead a discussion in English with people from all backgrounds, as well as honing and communicating one ' s unique sensibilities, would be an important skill to survive in a global changing environment.</p> <p>In this class we will read and reflect upon a number of architectural essays, starting with Junichiro Tanizaki ' s In Praise of Shadows. We will then go through the different studies of architecture in English, writing and presenting short essays on our way. The final project will be a group proposal and presentation on “ a Memorial ” .</p>					
[Course Goals]					
<p>Able to use fluent English for communicating and presenting architectural ideas.</p> <p>A1 Communication ability A2 Understanding architecture from different perspectives B2 Understanding architectural design and spatial planning C2 Understanding how architecture affects society C3 Acting with correct judgement based on historical and social understanding D2 Having one ' s unique viewpoint E2 Understanding global and local values</p>					
[Course Schedule and Contents]					
<p>Wk 1: Lecture: Introduction -different types of English and perceptions. Introduction of syllabus, essays, project, and reading materials. Class activity: Introduction about yourself and your favourite architect/architecture. Homework: Read In Praise of Shadows (URL below). Write an essay on “ A Dark Architectural Space ” that had been special to you, on A4-size paper.</p> <p>Wk 2: Lecture: Glass and Steel 1 Class activity: Submission and presentation of the essay of “ A Dark Architectural Space ” . Class activity: Primitive Hut concept check. Homework: Read Stone (URL below).</p> <p>Wk 3: Lecture: Glass and Steel 2</p>					
Continue to 建築学コミュニケーション (専門英語) (2)					

建築学コミュニケーション (専門英語) (2)

Class activity: Continue presentation of the essay of “ A Dark Architectural Space ” .
Homework: Revision of terms. Read Mies van der Rohe ’ s speech (URL below).

Wk 3:

Lecture: Crystal Palace 1

Homework: Read Construction History (URL below).

Wk 4:

Lecture: Crystal Palace 2

Read Space, Time & Architecture (URL below).

Homework: Write an essay on “ Architecture and Technology ” . List three architectural effects related to technology, and describe how materials and technology produce them. On A4-size paper. (Advanced learners may choose to write about your opinion about the relation between “ Architecture and Technology ” , after reading “ Construction History ” and “ Space, Time & Architecture ” .)

Wk 5:

Lecture: Pompidou Center 1

Class activity: Submission and presentation of the essay “ Architecture & Technology ” .

Homework: Read Beaubourg Effect (URL below).

Wk 6:

Lecture: Pompidou Center 2

Class activity: Continue presentation of the essay “ Architecture & Technology ” .

Homework: Read Beaubourg Effect (URL below) and complete exercise “ Schematization ” .

Wk 7:

Lecture: Utopia/ Ledoux 1

Class activity: Selected presentations.

Homework: Read The Theater of Industry (URL below).

Wk 8:

Lecture: Utopia/ Ledoux 2

Class activity: Fill in the blanks.

Homework: Read The Theater of Industry (URL below).

Wk 9:

Lecture: Perspective and the Ideal City

Class activity: Selected presentations.

Homework: Read Le Corbusier ’ s Towards a New Architecture (URL below).

Wk 10:

Lecture: Critical Memory 1

Class activity: Selected presentations.

Homework: Start forming groups and decide on your group project topic.

Wk 11:

Lecture: Critical Memory 2

Continue to 建築学コミュニケーション (専門英語) (3)

建築学コミュニケーション (専門英語) (3)

Class activity: Introduction of your group and project topic on “ A Memorial ” .
Homework: Research and prepare sketch proposal of your group project.

Wk 12:

Class activity: group presentation 1, critique and discussion

Wk 13:

Class activity: group presentation 2, critique and discussion

Wk 14:

Lecture: Cities in the world

Class activity: group presentation (if required).

No final examination.

The schedule may be subject to change.

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

Students will need to listen and read different texts, and solve the related problems. Students are expected to be able to write, discuss and present architecture in English at the end of the class. There will be no final examination. Attendance, class participation and exercise completion is important. No plagiarism. Students who have less than 60% in attendance will fail. Late arrival for more than 10 minutes or leaving early without satisfactory explanation will be considered non-attendance.

Homework - 40% Presentations - 40%. Attendance - 20%.

[Textbook]

Please check URL below.

[Reference books, etc.]

(Reference books)

Christian Norberg-Schulz, Genius Loci: Towards a Phenomenology of Architecture, Academy Editions Ltd, 1980.

https://marywoodthesisresearch.files.wordpress.com/2014/03/genius-loci-towards-a-phenomenology-of-architecture-part1_.pdf

Kenneth Frampton, Modern Architecture: A Critical History, Thames and Hudson, 1992.

https://doubleoperative.files.wordpress.com/2009/12/kenneth-frampton_modern-architecture.pdf

Le Corbusier, Towards a New Architecture, Dover, 1986.

Continue to 建築学コミュニケーション (専門英語) (4)

建築学コミュニケーション (専門英語) (4)

<https://cisematablog.files.wordpress.com/2016/11/towards-a-new-architecture1-1.pdf>

Christian Schittich, in Detail Japan, Birkhauser, 2002.

Graphic Anatomy Atelier Bow-Wow, Toto, 2007.

Francis D.K. Ching, Building Construction Illustrated, John Wiley and Sons, 1991.

Francis D.K. Ching, A Visual Dictionary of Architecture, John Wiley and Sons, 2011.

Steen Eiler Rasmussen, Experiencing Architecture, MIT Press, 1992.

https://openlab.citytech.cuny.edu/12101291coordination/files/2011/06/Rasmussen_and_Elam_Proportions.pdf

Gunter Nitschke, From Shinto to Ando, Academy, 1993.

http://www.east-asia-architecture.org/downloads/research/MA_-_The_Japanese_Sense_of_Place_-_Forum.pdf

Junichiro Tanizaki, In Praise of Shadows, Leet ' s Island Books, 1997.

http://www.edu.artcenter.edu/mertzel/spatial_scenography_1/Class%20Files/resources/In%20Praise%20of%20Shadows.pdf

Kevin Lynch, The Image of the City, Harvard-MIT Joint Center for Urban Studies Series, 1964.

http://www.miguelangelmartinez.net/IMG/pdf/1960_Kevin_Lynch_The_Image_of_The_City_book.pdf

(Related URLs)

http://www.edu.artcenter.edu/mertzel/spatial_scenography_1/Class%20Files/resources/In%20Praise%20of%20Shadows.pdf(Tanizaki Junichiro, In Praise of Shadows.)

https://1drv.ms/b/s!AhVq_riAFrGsgSdTZP5ykPintWMq(John Sallis, Stone.)

<http://miessociety.org/mies/speeches/id-merger/>(Mies van der Rohe, ID Merger speech.)

https://1drv.ms/b/s!AhVq_riAFrGsgSI7_073rYqfkLCx(Construction History)

https://1drv.ms/b/s!AhVq_riAFrGsgShPD7LwDaseZAb9(Space, Time & Architecture)

https://1drv.ms/w/s!AhVq_riAFrGsgTy57oqLy253JJD1(Beaubourg Effect)

https://1drv.ms/b/s!AhVq_riAFrGsgSu28rkaBXp_f9cs(The Theater of Industry)

<https://cisematablog.files.wordpress.com/2016/11/towards-a-new-architecture1-1.pdf>(Le Corbusier, Towards a New Architecture.)

http://www.icomos-poland.org/pl/?option=com_dropfiles&format=&task=frontfile.download&catid=67&id=66&Itemid=1000000000000(Francis Ching, A Visual Dictionary of Architecture.)

<http://www.east-asia-architecture.org/aotm/index.html>(Hand or Machine, by Esther Tsoi, 2012.)

[Regarding studies out of class (preparation and review)]

Please read materials from the above URL. Research the meaning of words in advance and at your leisure.

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	実践的科学英語演習 Exercise in Practical Scientific English I	Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, NISHIKAWA MIKAKO Graduate School of Engineering Senior Lecturer, MATSUMOTO RIYOUSUKE Graduate School of Engineering Senior Lecturer, ASHIDA RIYUUICHI Graduate School of Engineering Senior Lecturer, MAEDA MASAHIRO Graduate School of Engineering Senior Lecturer, YOROZU KAZUAKI Graduate School of Engineering Senior Lecturer, KANEKO KENTAROU		
Target year		Number of credits	1	Course offered year/period	2019/First semester
Day/period	Thu.4,5	Class style	Seminar	Language	Japanese and English
[Outline and Purpose of the Course]					
<p>This course is open to all master and doctoral engineering students. It is designed to help students understand how to write a research paper step by step. In this course, the students will write a short research paper (i.e. Extended Research Abstract for Proceeding, approx. 1000 -1500 words) on a topic drawn from assigned readings.</p>					
[Course Goals]					
<p>The primary goal of this course is to deepen an understanding of the main features of each part of a scientific paper (IMRaD). Throughout the course, students will develop the core competencies required for language, grammar, and style to produce a research manuscript in English.</p>					
[Course Schedule and Contents]					
<p>Unit 1. Course Overview Introduction to writing scientific research articles</p> <p>Unit 2. Introduction Raising awareness of the register of scientific research articles (genre, audience, purpose)</p> <p>Unit 3. Preparing to Write (1) Writing a proposal for a research paper, using corpus-based approach (Exercise: Creating own Corpus)</p> <p>Unit 4. Preparing to Write (2) Paraphrasing ideas from source texts, using citations and references in formal writing</p> <p>Unit 5. Writing Processes (1) Abstract Identifying the moves for an Abstract section by hint expressions</p> <p>Unit 6. Writing Processes (2) Abstract-continued Writing an Abstract (Title), Peer Feedback</p> <p>Unit 7. Writing Processes (3) Introduction</p>					
Continue to 実践的科学英語演習 (2)					

実践的科学英語演習 (2)

Identifying the moves for an Introduction section by hint expressions

Unit 8. Writing Processes (4) Introduction-continued
Writing an Introduction section, Peer Feedback

Unit 9. Writing Processes (5) Method
Writing a Method section, Peer Feedback

Unit 10. Writing Processes (6) Results
Writing a Result section, Peer Feedback

Unit 11. Writing Processes (7) Discussions and Conclusion
Writing a Discussion and a Conclusion section

Unit 12. Cover letter to reviewers
Writing a cover letter to reviewers and how to respond to reviewers

Unit 13. Monitoring and Revising (1)
Submitting the paper online to receive feedback from instructors

Unit 14. Monitoring and Revising (2)
Revising a paper based on peer feedback

Unit 15. Submission of the Final Paper

[Class requirement]

Students who intend to join this course must attend the first class.

[Method, Point of view, and Attainment levels of Evaluation]

Evaluation based on 30% participation, 40% reports, 30% final paper *More than twice unexcused absence can result in course failure

[Textbook]

Handout materials will be supplied by the instructor.

[Reference books, etc.]

(Reference books)

Textbooks (for reference)

ALESS (2012). Active English for Science-英語で科学する-レポート、論文、プレゼンテーション. The University of Tokyo Press.

野口ジュディー・深山晶子・岡本真由美. (2007). 『理系英語のライティング』. アルク

Continue to 実践的科学英語演習 (3)

実践的科学英語演習 (3)

[Regarding studies out of class (preparation and review)]

Students will need to spend a reasonable amount of time to complete their own piece of writing for the course.

(Others (office hour, etc.))

We may restrict the class size to enhance students' learning.

Students who intend to join the course are required to attend the first-day guidance.

Office Hours: (by appointment) nishikawa.mikako7w@kyoto-u.ac.jp (Ext. 2052)

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	工学と経済（上級） Advanced Engineering and Economy		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, Juha Lintuluoto	
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Tue.5	Class style	Lecture	Language	English
[Outline and Purpose of the Course]					
<p>Engineering economics plays central role in any industrial engineering project. For an engineer, it is important to apply the engineering know-how with the economic analysis skills to obtain the best available materials, methods, devices, etc. in the most economical way. This course is aimed to teach engineering students the basic economic methods to manage economically an engineering project. In addition, the report writing on various engineering economic issues prepares to write reports in a professional form. The lab sessions are meant for the verbal skills improvement as well as improvement of analytical thinking. The topics are of current relevant topics Small-group brain-storming method is used. The exercise sessions cover the use of Ms-Excel for various quantitative economic analyses.</p>					
[Course Goals]					
<p>This course is aimed to strengthen engineering students's skills in economics. The course concept is to teach students selectively those subjects which serve as major tools to solve economic tasks in engineering environment. The reports and lab sessions provide students stimulating and analytical thinking requiring tasks, and presentation skills training is an important part of this course.</p>					
[Course Schedule and Contents]					
<p>Student orientation and Introduction to engineering economy, 1time, Course contents, goals Cost concepts and design economics, 1time, Cost terminology and classification Cost estimation techniques, 1time, WBS for cost estimation, estimation techniques (indexes, unit, factor, power-sizing, learning curve, CER, top down, bottom up), target costing The time value of money, 1time, Simple interest, compound interest, economic equivalence concept, cash-flow diagrams, PW, FW, AW Evaluating a single project, 1time, MARR, present worth method, bond value, capitalized worth, internal rate of return, external rate of return, payback method Comparison and selection among alternatives, 1time, Investment and cost alternatives, study period, equal and unequal useful lives, rate-of-return method, imputed market value Depreciation and income taxes, 1time, SL and DB depreciation methods, book value, after-tax MARR, marginal income tax rate, gain(loss) on asset disposal, after-tax economic analysis general procedure, EVA, Price changes and exchange rates, 1time, Actual dollars, real dollars, inflation, fixed and responsive annuities, exchange rates, purchasing power Replacement analysis, 1time, Determining economic life of challenger, determining economic life of defender, abandonment, after-tax replacement study Evaluating projects with the benefit-cost ratio method, 1time, Benefits, costs, dis-benefits, self-liquidating projects, multi-purpose projects, interest rate vs. public project, conventional B-C ratio PW and AW method, modified B-C ratio PW and AW method Breakeven and sensitivity analysis, 1time, Breakeven analysis, sensitivity analysis, spider plot Probabilistic risk analysis, 1time, Sources of uncertainty, discrete and continuous variables, probability trees, Monte Carlo simulation example, decision trees, real options analysis</p>					
----- Continue to 工学と経済（上級）(2) -----					

工学と経済（上級）(2)

The capital budgeting process, 1time, Capital financing and allocation, equity capital and CAPM, WACC, WACC relation to MARR, opportunity cost

Decision making considering multiattributes, 1time, Non-compensatory models (dominance, satisficing, disjunctive resolution, lexicography), compensatory models (non-dimensional scaling, additive weight)

Final test, 1time, 90 minutes, concept questions, calculation task (option of choice)

,times, Additionally, students will submit three reports during the course on given engineering economy subjects. Also, required are the five lab participations (ca.60 min/each) for each student. Additionally, three exercise sessions (ca.60 min/each), where use of Ms-Excel will be practiced for solving various engineering economy tasks, should be completed

[Class requirement]

-This course is highly recommended for those who attend "Project Management in Engineering" course, Small group working method

[Method, Point of view, and Attainment levels of Evaluation]

Final test, reports, class activity

[Textbook]

Engineering Economy 15th ed. William G. Sullivan (2011)

[Reference books, etc.]

(Reference books)

Will be informed if necessary.

(Related URLs)

(The web-site is listed in the home page of the GL education center.)

[Regarding studies out of class (preparation and review)]

(Others (office hour, etc.))

Students are requested to check in advance whether the credits of this course are counted as the units for graduation requirement at department level. The course starts on Oct.2nd.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	建築学総合演習 Exercises in Architecture and Architectural Engineering	Affiliated department, Job title,Name	Graduate School of Engineering Professor,OGURA DAISUKE		
Target year		Number of credits	4	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Seminar	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,30times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築学特別演習 I Seminar on Architecture and Architectural Engineering, I	Affiliated department, Job title,Name	Graduate School of Engineering Professor, OGURA DAISUKE		
Target year		Number of credits	2	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Seminar	Language	Japanese
[Outline and Purpose of the Course]					
The participants are required to set a subject of study on architecture, architectural engineering and relevant areas. Research skills and common knowledge in end-cutting and/or fundamental papers are to be studied with the advice of professors. The participants are trained to understand existing established method of research and to develop new methodologies. Discussions will be made among participants to establish ability for problem finding and solution approach.					
[Course Goals]					
[Course Schedule and Contents]					
,15times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Score is evaluated by contents amp materials of presentation and by overall progress of study.					
[Textbook]					
To be specified during the course.					
[Reference books, etc.]					
(Reference books) To be specified during the course.					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築学特別演習II Seminar on Architecture and Architectural Engineering, II	Affiliated department, Job title,Name	Graduate School of Engineering Professor, OGURA DAISUKE		
Target year		Number of credits	4	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Seminar	Language	Japanese
[Outline and Purpose of the Course]					
The participants are required to set a subject of study on architecture, architectural engineering and relevant areas. Research skills and common knowledge in end-cutting and/or fundamental papers are to be studied with the advice of professors. The positioning, research findings and/or future development are discussed among participants. Through the activities, the participants are trained for the ability of proceed research by their own way.					
[Course Goals]					
[Course Schedule and Contents]					
,30times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Score is evaluated by contents amp materials of presentation and by overall progress of study.					
[Textbook]					
To be specified during the course.					
[Reference books, etc.]					
(Reference books) To be specified during the course.					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	工学研究科国際インターンシップ 1 International Internship in Engineering 1		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, NISHIKAWA MIKAKO	
Target year		Number of credits	1	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Practical training	Language	English
[Outline and Purpose of the Course]					
Acquisition of international skills with the training of foreign language through the internship programs hosted by the University, the Graduate School of Engineering, or The Department the registrant belongs to.					
[Course Goals]					
Acquisition of international skills with the training of foreign language.					
[Course Schedule and Contents]					
Overseas Internship, 1 times, The contents to be acquired should be described in the brochure of each internship program. Final Presentation, 1 times, A presentation by the student is required followed by discussion among participants.					
[Class requirement]					
Described in the application booklet for each internship program. The registrant is requested to have enough language skills for the participation.					
[Method, Point of view, and Attainment levels of Evaluation]					
Merit rating is performed based on the presentation or the report(s) after the participation in each internship program. Each department is responsible to identify the number of credits to be granted to the student of the department, if the credits are included in the mandatory ones. The Global Leadership Engineering Education Center takes the role to evaluate the credits if the department the student belongs to deals the credits as optional ones. The number of credits to be earned is 1 and 2, respectively to the subjects International Internship in Engineering 1 and 2 depending on the period and the contents of the internship program the students has participated in.					
[Textbook]					
Not Applicable					
[Reference books, etc.]					
(Reference books) Not Applicable					
Continue to 工学研究科国際インターンシップ 1 (2)					

工学研究科国際インターンシップ 1 (2)

(Related URLs)

(Not Applicable)

[Regarding studies out of class (preparation and review)]

Not Applicable

(Others (office hour, etc.))

It is required for students to check if the internship program to participate in could be evaluated as part of mandatory credits or not and could earn how many credits before the participation to the department or educational program the student is enrolled. If the credit could not be treated as mandatory ones, get in touch with the Global Leadership Engineering Education Center.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	工学研究科国際インターンシップ 2 International Internship in Engineering 2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, NISHIKAWA MIKAKO	
Target year		Number of credits	2	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Practical training	Language	English
[Outline and Purpose of the Course]					
Acquisition of international skills with the training of foreign language through the internship programs hosted by the University, the Graduate School of Engineering, or The Department the registrant belongs to.					
[Course Goals]					
Acquisition of international skills with the training of foreign language. Detailed objectives should be described in each program.					
[Course Schedule and Contents]					
Overseas Internship, 1 times, The contents to be acquired should be described in the brochure of each internship program. Final Presentation, 1 times, A presentation by the student is required followed by discussion among participants.					
[Class requirement]					
Described in the application booklet for each internship program. The registrant is requested to have enough language skills for the participation.					
[Method, Point of view, and Attainment levels of Evaluation]					
Merit rating is performed based on the presentation or the report(s) after the participation in each internship program. Each department is responsible to identify the number of credits to be granted to the student of the department, if the credits are included in the mandatory ones. The Global Leadership Engineering Education Center takes the role to evaluate the credits if the department the student belongs to deals the credits as optional ones. The number of credits to be earned is 1 and 2, respectively to the subjects International Internship in Engineering 1 and 2 depending on the period and the contents of the internship program the students has participated in.					
[Textbook]					
Not Applicable.					
Continue to 工学研究科国際インターンシップ 2(2)					

工学研究科国際インターンシップ2 (2)

[Reference books, etc.]

(Reference books)

Not Applicable.

(Related URLs)

(Not Applicable.)

[Regarding studies out of class (preparation and review)]

Not Applicable.

(Others (office hour, etc.))

It is required for students to check if the internship program to participate in could be evaluated as part of mandatory credits or not and could earn how many credits before the participation to the department or educational program the student is enrolled. If the credit could not be treated as mandatory ones, get in touch with the Global Leadership Engineering Education Center.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	エンジニアリングプロジェクトマネジメント Project Management in Engineering	Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,MATSUMOTO RIYOSUKE Graduate School of Engineering Senior Lecturer,ASHIDA RIYUUICHI Graduate School of Engineering Senior Lecturer,MAEDA MASAHIRO Graduate School of Engineering Senior Lecturer,YOROZU KAZUAKI Graduate School of Engineering Senior Lecturer,KANEKO KENTAROU Graduate School of Engineering Associate Professor,Juha Lintuluoto		
Target year		Number of credits	2	Course offered year/period	2019/First semester
Day/period	Fri.4	Class style	Lecture	Language	English
[Outline and Purpose of the Course]					
This course provides a basic knowledge required for the project management in various engineering fields such as process design, plant design, construction, and R&D project. Some lectures are provided by visiting lecturers from industry and public works who have many experiences on actual engineering projects.					
[Course Goals]					
This course will help students gain a fundamental knowledge of what project management in engineering is. Throughout the course, students will learn various tools applied in project management. Students will also understand the importance of costs and money, risks, leadership, and environmental assessment in managing engineering projects. This course is followed with the course Exercise on Project Management in Engineering in the second semester.					
[Course Schedule and Contents]					
Week 1, Course guidance Week 2-3, Introduction to project management Week 4, Project scheduling Week 5-7, Tools for project management, cost, and cash flows Week 8-9, Team organization and administration Week 10, Negotiation skills/tactics/examples in business marketing Week 11, Environmental impact assessment Week 12-13, Risk management Week 14, Project management for engineering procurement construction business Week 15, Feedback					
[Class requirement]					
We may restrict the class size to enhance students' learning. Students who intend to join the course are required to attend the first class.					
----- Continue to エンジニアリングプロジェクトマネジメント(2)					

エンジニアリングプロジェクトマネジメント(2)

[Method, Point of view, and Attainment levels of Evaluation]

Evaluated by class contribution (or level of understanding) at each class (60%) and assignments (40%)

[Textbook]

Course materials will be provided.

[Reference books, etc.]

(Reference books)

Lock, Dennis 『Project Management, 10th edition』 (Gower Publishing Ltd.) ISBN:1409452697

Cleland, David L., and Ireland, Lewis R. 『Project Management: Strategic Design and Implementation, 5th edition』 (McGraw-Hill Professional) ISBN:007147160X

Miller, Roger and Lessard, Donald R. 『The strategic management of large engineering projects, Shaping Institutions, Risks, and Governance』 (The MIT Press) ISBN:9780262526982

(Related URLs)

<http://www.glc.t.kyoto-u.ac.jp/grad>(The home page of the engineering education research center)

[Regarding studies out of class (preparation and review)]

This course requests students to prepare a class in advance because some classes will be done by an interactive style as necessary.

(Others (office hour, etc.))

We may restrict the class size to enhance students' learning.

Students who intend to join the course are required to attend the first class.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	エンジニアリングプロジェクトマネジメント演習 Exercise on Project Management in Engineering	Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, MATSUMOTO RIYOSUKE Graduate School of Engineering Senior Lecturer, ASHIDA RIYUICHI Graduate School of Engineering Senior Lecturer, MAEDA MASAHIRO Graduate School of Engineering Senior Lecturer, YOROZU KAZUAKI Graduate School of Engineering Senior Lecturer, KANEKO KENTAROU Graduate School of Engineering Associate Professor, Juha Lintuluoto		
Target year		Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Fri.4,5	Class style	Seminar	Language	English
[Outline and Purpose of the Course]					
<p>In this course, students will apply the engineering know-how and the skills of management, and group leadership which they learned in the course of Project Management in Engineering to build and carry out a virtual inter-engineering project. This course provides a forum where students' team-plan based on ideas and theories, decision making, and leadership should produce realistic engineering project outcomes. The course consists of intensive group work, presentations, and a few intermediate discussions. A final report will be required.</p>					
[Course Goals]					
<p>This course prepares engineering students to work with other engineers within a large international engineering project. In particular this course will focus on leadership and management of projects along with applied engineering skills where the students learn various compromises, co-operation, responsibility, and ethics.</p>					
[Course Schedule and Contents]					
<p>Week 1, Introduction to Exercise on Project Management in Engineering, Lecture on tools for the Project management in engineering, Practice and Project proposal. Week 2, Group finalizations & Project selections. Week 3-7, Group work, Project preliminary structures, Task list, WBS, Cost, Gant chart. Week 8, Mid-term presentation. Week 9-11, Group work, Leadership structuring, Risk Management, Environmental Impact Assessment. Week 12, Presentation. Each project group may freely schedule the group works within given time frame. The course instructors are available if any need is required. Some lectures will be provided such as Task list, WBS, Cost, Gant chart, Leadership structuring, Risk Management, Environmental Impact Assessment, and more.</p>					
Continue to エンジニアリングプロジェクトマネジメント演習(2)					

エンジニアリングプロジェクトマネジメント演習(2)

[Class requirement]

Fundamental skills about group leading and communication, scientific presentation.
We may restrict the class size to enhance students' learning.
Students who intend to join the course are required to attend the first class.

[Method, Point of view, and Attainment levels of Evaluation]

Report, presentations, class activity (at least 10 times attendance including mid-term and final presentations).

[Textbook]

Course materials will be provided if necessary.

[Reference books, etc.]

(Reference books)

Will be informed if necessary.

(Related URLs)

<http://www.glc.t.kyoto-u.ac.jp/grad>(The home page of the engineering education research center)

[Regarding studies out of class (preparation and review)]

Students are requested to prepare for group work, mid-term presentation and final presentation.

(Others (office hour, etc.))

We may restrict the class size to enhance students' learning.
Students who intend to join the course are required to attend the first class.

*Please visit KULASIS to find out about office hours.

Numbering code					
Course title <English>	インターンシップ (建築) Internship I, Architectural Design Practice	Affiliated department, Job title, Name	Graduate School of Engineering Professor, KANKI KIYOKO Graduate School of Engineering Associate Professor, YOSHIDA TETSU		
Target year		Number of credits	4	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Practical training	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
Guidance, 2時間times, Project Explanation, 8時間times, Briefing and Data Collection, 12時間times, Basic Design, 80時間times, Practical Design, 80時間times, Report, 2時間times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	インターンシップ (建築) Internship II, Architectural Design Practice	Affiliated department, Job title, Name	Graduate School of Engineering Professor, KANKI KIYOKO Graduate School of Engineering Associate Professor, YOSHIDA TETSU		
Target year		Number of credits	4	Course offered year/period	2019/Intensive, year-round
Day/period	Intensive	Class style	Practical training	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
Guidance, 2時間times, Project Explanation, 8時間times, Briefing and Data Collection, 12時間times, Basic Design, 80時間times, Practical Design, 80時間times, Report, 2時間times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築設計実習 Architectural Design Practice	Affiliated department, Job title, Name	Graduate School of Engineering Professor, HIRATA AKIHISA		
Target year		Number of credits	6	Course offered year/period	2019/First semester
Day/period	Mon.4,5,Tue.4,5,Wed.4,5,Thu.1,Fri.3,5	Class style	Practical training	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,1time, ,1time, ,2times, ,2times, ,2times, ,3times, ,1time, ,1time, ,1time, ,1time,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築設計演習 Architecture Design Studio I	Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,TAJI TAKAHIRO		
Target year		Number of credits	4	Course offered year/period	2019/First semester
Day/period	Thu.4,5,Fri.1,2	Class style	Practical training	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,3times, ,2times, ,8times, ,2times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築設計演習 Architecture Design Studio II	Affiliated department, Job title,Name	Graduate School of Engineering Professor,TAKEYAMA KIYOSHI		
Target year		Number of credits	4	Course offered year/period	2019/Second semester
Day/period	Thu.4,5,Fri.3,5	Class style	Practical training	Language	Japanese
[Outline and Purpose of the Course]					
[Course Goals]					
[Course Schedule and Contents]					
,3times, ,2times, ,8times, ,2times,					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
[Textbook]					
[Reference books, etc.]					
(Reference books)					
[Regarding studies out of class (preparation and review)]					
(Others (office hour, etc.))					
*Please visit KULASIS to find out about office hours.					

Numbering code					
Course title <English>	建築工事監理実習 Construction Supervision Practice		Affiliated department, Job title, Name	Graduate School of Engineering Professor, KANETA TAKASHI Part-time Lecturer, MIZUKAWA TAKAHIKO	
Target year	1st year students or above	Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Mon.3,4	Class style	Practical training	Language	Japanese
[Outline and Purpose of the Course]					
Engineering and practice of architects and supervisors required by architects law and building law.					
[Course Goals]					
To acquire the knowledge and the ability for architects and supervisors jobs.					
[Course Schedule and Contents]					
1-3. Laws and regulations. Building code, acts of architects and building engineers, construction business act, standard forms of design and supervision contract, standard forms of construction contract. 4-5. Overview of supervisions. Definition of terms concerning supervision. Role of supervision in project process. 6-10. Jobs in projects. Jobs of supervision in real projects. 11-15. Risk and troubles. Examples of troubles and their solutions.					
[Class requirement]					
Construction Engineering and Management I and II (undergraduate program) should be mastered.					
[Method, Point of view, and Attainment levels of Evaluation]					
Report. Attendance of lectures and site visit are also evaluated. Absolute evaluation (raw score) Attendance and individual reports will be assessed on the basis of achievement level for course goals. - Those who are absent more than four times will not be credited. - Students will submit all reports. The reports with originality will be given a high score.					
[Textbook]					
Not used					
[Reference books, etc.]					
(Reference books) Introduced during class					
[Regarding studies out of class (preparation and review)]					
Read the material introduced in the class.					
(Others (office hour, etc.))					
Contact to: kaneta@archi.kyoto-u.ac.jp					
*Please visit KULASIS to find out about office hours.					

Numbering code		G-GES32 63707 LJ74			
Course title <English>	環境デザイン論 Environmental Design Research		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Professor,KOBAYASHI HIROHIDE Graduate School of Global Environmental Studies Associate Professor,OCHIAI CHIHO	
Target year	Master's students	Number of credits	2	Course offered year/period	2019/Second semester
Day/period	Mon.2	Class style	Lecture	Language	Japanese
Course Number	3707				
[Outline and Purpose of the Course]					
<p>本講義「環境デザイン論」は、人間とその周囲に存する物理的環境や社会的環境との相互関係にみられる課題に対して、生活質向上に資するデザインの方法やその役割を理解し考察することを目的とする。最初に多様な環境デザインの枠組みと、その中で本講義が扱う地域社会の環境デザイン(ソーシャルデザイン)の視点を概説し、地域での新たな環境デザイン試行や地域で培われた環境適応の方法など、事例を紹介しながら講義をおこなう。前半のテーマでは、風土建築の再建マネジメント、地域資源を活かす建築システム、環境親和型建築の可能性、後半のテーマでは、地域コミュニティの持続可能性、自然災害と人間居住に関わる環境デザインの方法をみる。</p>					
[Course Goals]					
より快適で豊かな持続的人間環境の構築をめざすデザインの基本的な考え方と方法論を理解する。					
[Course Schedule and Contents]					
環境デザイン概論					
1) 環境デザインの枠組み：環境デザインの社会的役割やその対象について概説する。					
風土建築の再建マネジメント					
2) 風土建築の持続可能性1：地域に根ざす建築の維持継承の条件や方法を海外の事例から探る。					
3) 風土建築の持続可能性2：地域に根ざす建築の維持継承の条件や方法を国内の事例から探る。					
地域資源を活かす建築システム					
4) 地域資源活用の建築的試行1：地域資源としての竹材を用いた環境デザインの事例を紹介する。					
5) 地域資源活用の建築的試行2：地域資源としても木材を用いた環境デザインの事例を紹介する。					
環境親和型建築の可能性					
6) 外部環境に応答する建築1：環境親和技術を用いた建築デザインの手法を概説する。					
7) 外部環境に応答する建築2：環境親和技術を用いた建築デザインの事例を紹介する。					
地域コミュニティの持続可能性					
8) 集落環境改善のための取り組み：集落資源を活用した新たなコミュニティづくりの試みを紹介する。					
9) ローカルコモンズと地域資源：コミュニティによる持続的地域資源利用の事例を紹介する。					
Continue to 環境デザイン論(2)					

環境デザイン論(2)

自然災害と人間居住

- 10) 集落住民の居住環境適応1：洪水災害常襲集落の環境適応の術を紹介する。
- 11) 集落住民の居住環境適応2：集落火災を防ぐための住民協働のしくみを紹介する。
- 12) 災害後の居住環境構築：大規模自然災害後の居住環境構築に関する事例を紹介する。

環境デザインの拡張的議論

- 13) 学生発表と議論1：学生プレゼンにより様々な分野の環境デザイン適用事例を共有し議論する。
- 14) 学生発表と議論2：学生プレゼンにより様々な分野の環境デザイン適用事例を共有し議論する。

学習到達度の確認

- 15) 一連の講義内容に関する理解度確認

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

出席状況や学生プレゼンテーション，課題レポートの内容により評価する。

[Textbook]

資料を配布する。

[Reference books, etc.]

(Reference books)

Introduced during class

[Regarding studies out of class (preparation and review)]

本講義の各テーマに関連する予習を行い，基礎的な理解をしておくことが望ましい。また，自らの専門分野や関心のある分野における環境デザインの適用事例を検索し，その社会的背景やデザインの方法論など，課題レポートにつながる準備作業をしておくことが望ましい。

(Others (office hour, etc.))

*Please visit KULASIS to find out about office hours.

Numbering code		G-LAS00 80001 LJ20			
Course title <English>	研究倫理・研究公正（理工系） Research Ethics and Integrity(Science and Technology)		Affiliated department, Job title,Name	Institute for Liberal Arts and Sciences Program-Specific Professor,ITO SHINZABUROU Institute for Liberal Arts and Sciences Program-Specific Professor,SATOU TOORU Graduate School of Engineering Professor,KAWAKAMI YOUICHI	
	Group	Common Graduate Courses		Field(Classification)	Social Responsibility and Profitability
Language	Japanese		Old group		Number of credits 0.5
Hours	7.5	Class style	Lecture		Course offered year/period 2019・Intensive, First semester
Day/period	Intensive		Target year	Graduate students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>研究をこれから始める大学院生に責任ある行動をする研究者として身につけておくべき心構えを講述する。研究者としての規範を保っていかん研究を進めるか、また研究成果の適切な発表方法など、研究倫理・研究公正についてさまざまな例を示しながら、科学研究における不正行為がいかに健全な科学の発展の妨げになるか、またデータの正しい取扱いや誠実な研究態度、発表の仕方が、自らの立場を守るためにもいかに重要かを講義する。さらに、研究費の適切な使用と知的財産や利益相反について学ぶ。講義に続いてグループワークを行い、与えられた仮想課題を自らの問題として考え、解決方法のディスカッションを行う。</p>					
[Course Goals]					
<p>第1講～第4講を通じて、研究者としての責任ある行動とは何かを修得する。科学研究における不正行為の事例学習、討論を通じて、誠実な研究活動を遂行する研究者の心得を身につけ、最後に研究倫理・研究公正についてのe-ラーニングコースを受講し、理解度を確認する。</p>					
[Course Schedule and Contents]					
<p>第1講 科学研究における心構え - 研究者の責任ある行動とは -</p> <ol style="list-style-type: none"> 1. 研究者の責任ある行動とは（学術活動に参加する者としての義務） 2. 不正の可能性と対応 3. 実験室の安全対策と環境への配慮 4. データの収集と管理 - 実験データの正しい取扱い方 - 5. 科学上の間違いと手抜き行為の戒め 6. 誠実な研究活動中の間違いとの区別 7. 科学研究における不正行為 <p>第2講 研究成果を発表する際の研究倫理公正</p> <ol style="list-style-type: none"> 1. 研究成果の共有 2. 論文発表の方法とプロセス 3. 科学研究における不正行為（典型的な不正） 4. データの取扱い（データの保存・公開・機密） 5. その他の逸脱行為（好ましくない研究行為） 6. 研究不正事件（シェーン捏造事件） 7. 不適切な発表方法（オーサーシップ、二重投稿） <p>第3講 知的財産と研究費の適正使用</p> <ol style="list-style-type: none"> 1. 知的財産の考え方（知的財産の確保と研究発表） 2. 研究資金と契約 					
Continue to 研究倫理・研究公正（理工系）(2)					

研究倫理・研究公正（理工系）(2)

3. 利益相反（利害の衝突と回避）
4. 公的研究費の適切な取扱い
5. 研究者・研究機関へのペナルティー
6. 事例紹介（ビデオ：分野共通4件）
7. 結語

第4講 グループワーク

1. 例示された課題についてグループ・ディスカッションと発表
2. 日本学術振興会「研究倫理ラーニングコース」の受講と修了証書の提出

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

第1～4講の全てに出席と参加の状況、ならびに学術振興会e-learningの修了証の提出をもって合格を判定する。

[Textbook]

日本学術振興会「科学の健全な発展のために」編集委員会『科学の健全な発展のために - 誠実な科学者の心得 -』（丸善出版）ISBN:978-4621089149（学術振興会のHP（<https://www.jsps.go.jp/j-kousei/data/rinri.pdf>）より、テキスト版をダウンロード可能）

[Reference book, etc.]

（Reference book）

米国科学アカデミー 編、池内 了 訳 『科学者をめざす君たちへ 研究者の責任ある行動とは』（化学同人）ISBN:978-4759814286
眞嶋俊造、奥田太郎、河野哲也 編著 『人文・社会科学のための研究倫理ガイドブック』（慶応義塾大学出版会）ISBN:978-4766422559
神里彩子、武藤香織 編 『医学・生命科学の研究倫理ハンドブック』（東京大学出版会）ISBN:978-4130624138
野島高彦 著 『誰も教えてくれなかった実験ノートの書き方』（化学同人）ISBN:978-4759819335
須田桃子 著 『捏造の科学者 STAP細胞事件』（文藝春秋）ISBN:978-4163901916

[Regarding studies out of class (preparation and review)]

日本学術振興会「研究倫理ラーニングコース」の受講

[Others (office hour, etc.)]

第1～3講は土曜2, 3, 4限に行う。第4講はグループワークを中心として講義の翌週または翌々週の土曜1, 2または3, 4限に実施する。

Numbering code		G-LAS01 80001 LJ10			
Course title <English>	学術研究のための情報リテラシー基礎 Basics of Academic Information Literacy		Affiliated department, Job title, Name	Institute for Liberal Arts and Sciences Professor, KITA HAJIME Kyoto University Library Associate Professor, KITAMURA YUMI Academic Center for Computing and Media Studies Program-Specific Senior Lecturer, FLANAGAN, Brendan John Academic Center for Computing and Media Studies Professor, Ogata Hiroaki	
	Group	Common Graduate Courses		Field(Classification)	Computer Science and Information Technology
Language	Japanese		Old group		Number of credits 0.5
Hours	7.5	Class style	Lecture		Course offered year/period 2019・Intensive, First semester
Day/period	Intensive		Target year	Graduate students	Eligible students For all majors
[Outline and Purpose of the Course]					
<p>本科目では大学院生として研究室などでの研究活動を本格化させるための基礎的な知識・スキルとして、大学図書館などを活用した学術情報の探索と発信、本学が提供する情報通信サービスの理解とその適正な運用、その基礎となる情報ネットワークやコンピュータについての実践的事項、情報セキュリティと情報倫理などを学習する。</p>					
[Course Goals]					
<p>大学図書館などを利用した学術目的の情報探索、情報発信について、効果的な文献の探索・収集・活用の手法と、論文として発表する際のマナーを知る。</p> <p>研究活動でコンピュータや LAN、インターネットを適切に利用するための技術的な基礎知識を知る。</p> <p>研究室でのネットワーク利用のために本学が提供している KUINS 等の情報通信サービスについて知り、適切に利用できるようになる。</p> <p>研究活動でコンピュータやネットワークを利用する際の本学での遵守事項や情報セキュリティ・情報倫理上の留意点を知り、実践できるようになる。</p>					
[Course Schedule and Contents]					
<p>以下、4回の授業を集中講義形式で実施する。</p> <ul style="list-style-type: none"> ・学術研究のための大学図書館利用と情報探索、情報発信(1回) ・ネットワークの基礎(1回) ・大学の情報基盤の利活用(1回) ・情報セキュリティと情報倫理(1回) 					
[Class requirement]					
None					
Continue to 学術研究のための情報リテラシー基礎(2)					

学術研究のための情報リテラシー基礎(2)

[Method, Point of view, and Attainment levels of Evaluation]

授業への参加（課題の提出）により評価する。情報環境機構が提供する情報セキュリティ e-learning の修了は合格の要件である。

[Textbook]

プリント等を電子的に配布する。

[Regarding studies out of class (preparation and review)]

情報セキュリティ e-learning についてはあらかじめ修了しておくこと。授業外学習として課題を課す。

[Others (office hour, etc.)]

受講時に、受講前に持っている情報リテラシーについての知識・スキル等を調査する予定である。授業資料は電子的に配布するので、ノートPCなどを持参して受講することが望ましい。

Numbering code		G-LAS01 80005 LJ55			
Course title <English>		データ科学：理論から実用へ I Data Science :From Theory to Practical Use I		Affiliated department, Job title,Name	Part-time Lecturer,SHIMATANI KENICHIRO
Group		Common Graduate Courses		Field(Classification)	Computer Science and Information Technology
Language		Japanese		Old group	
Number of credits		1			
Hours		15	Class style		Lecture
Course offered year/period		2019・Intensive, First semester			
Day/period		Intensive 2nd-3rd period on September 20 (Fri), 2nd-4th period on September 24 (Tue), 2nd-4th period on September 27 (Fri)	Target year	Graduate students	Eligible students
For all majors					
[Outline and Purpose of the Course]					
<p>ベイズ統計はデータ解析の現場で広く使われている。本講義では、様々な応用例に共通して必要なベイズ統計に関する数学的基礎と、その実データへの適用に必要な計算アルゴリズムの代表であるマルコフ連鎖モンテカルロ法(MCMC)の数学的基礎を中心に解説する。実際のところ、こうした数学的背景は、実データから数値結果を導く作業ではあまり必要ない。しかし、得られた結果を適切に解釈し、科学的仮説を検証したり、何らかの意思決定を行う場合、数理的背景に関する理解不足は、実データから数値結果へ至る過程をブラックボックス化し、それはしばしば数値の一人歩きをもたらし、推定の誤りを見過ごし、不適切な結論を招く。本講義では、ベイズ統計の応用事例に加え問題点も随時取り上げ、ベイズ統計を用いるための数理的基盤を固める。</p>					
[Course Goals]					
<p>ベイズ統計の諸概念とそこでよく使う計算アルゴリズムについての基本的な事項を理解する。より具体的には、事前分布、尤度、事後分布とその推定法について、自分の言葉で説明できる。さらに、ベイズ統計の誤用や誤解釈を指摘したりその危険性を意見できるレベルの理解を目指す。</p>					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. モデルベースの統計学とベイズ統計 2. 統計モデルの基本：確率分布、尤度、最尤法 3. 共役事前分布を用いるベイズ統計 4. マルコフ連鎖モンテカルロ法の数理 5. ギブスサンプラーとメトロポリス - ヘイスティング法 6. 時空間モデルのベイズ推定の事例 7. ベイズ統計におけるモデルの相対評価と情報量規準 8. まとめと補足 					
[Class requirement]					
<p>共通教育における微積分学・線型代数学・確率・統計程度の内容を理解していることが望ましい。</p>					
Continue to データ科学：理論から実用へ I (2)					

データ科学：理論から実用へⅠ(2)

[Method, Point of view, and Attainment levels of Evaluation]

演習（レポート提出または口頭発表）並びに15分程度の試験により到達目標への到達度を評価する。

[Textbook]

特に指定しない

[Reference book, etc.]

(Reference book)

姜興起 『(2010) ベイズ統計データ解析』（共立出版）

和合肇編著 『(2005) ベイズ計量経済分析 - マルコフ連鎖モンテカルロ法とその応用 - 』（東洋経済新報社）

中妻照雄 『(2007) 入門ベイズ統計学』（朝倉書店）

島谷健一郎 『(2012) フィールドデータによる統計モデリングとAIC』（近代科学社）

渡辺澄夫 『(2012) ベイズ統計の理論と方法』（コロナ社）

1-3はベイズ統計の入門書。4はベイズ統計を学ぶときに必要な統計モデルの諸事項の解説。5はベイズ統計を数学としてまとめ直した大著。

[Regarding studies out of class (preparation and review)]

参考書1-3のいずれか程度の内容を予習あるいは復習の形で自習することは、講義をより深く理解するために有用である。

[Others (office hour, etc.)]

講義中に教員との連絡方法について指示する。

Numbering code		G-LAS01 80006 LJ55			
Course title <English>		データ科学：理論から実用へII Data Science :From Theory to Practical Use II		Affiliated department, Job title,Name	Part-time Lecturer,NAKANO SHINYA
Group		Common Graduate Courses		Field(Classification)	Computer Science and Information Technology
Language		Japanese		Old group	
Hours		15	Class style	Lecture	Course offered year/period
					2019・Intensive, First semester
Day/period		Intensive 2nd-3rd period on September 17 (Tue), 2nd-4th period on September 18 (Wed), 2nd-4th period on September 19 (Thu)	Target year	Graduate students	Eligible students
					For all majors
[Outline and Purpose of the Course]					
<p>大量データの解析方法を扱うデータ科学は、科学研究のみならず高度情報化社会を支える基礎となりつつある。最近では、コンピュータ上で複雑な現象を再現する数値シミュレーションの分野でもデータ科学の有用性が高まっている。例えば、気象予測においては、観測から得られる情報を数値シミュレーションに取り入れる「データ同化」と呼ばれる統計科学的な手法が用いられており、予測の精度向上に威力を発揮している。また、数値シミュレーションを用いた不確実性の評価、リスク評価などにおいてもデータ科学の手法が有効である。本講義では、気象予測・予報で用いられるデータ同化を中心に、数値シミュレーションによる現象の再現・予測・不確実性評価などに利用されている統計的手法を取り上げ、その基本的な考え方や実装方法を基礎から解説する。</p>					
[Course Goals]					
<p>データ同化などの基礎となる空間データ解析、時系列データ解析手法の基本的な考え方を理解し、それらが数値シミュレーションの分野でどのように活用されているかを理解する。</p>					
[Course Schedule and Contents]					
<p>(1) 導入と数学的準備 背景，行列の計算，確率分布，乱数</p> <p>(2) 最小二乗法とその拡張 最小二乗法，拘束付き最小二乗法，ベイズ推定の基礎</p> <p>(3) カルマンフィルタ カルマンフィルタ，その実装</p> <p>(4) アンサンブルカルマンフィルタ 粒子フィルタ，アンサンブルカルマンフィルタ，その実装</p> <p>(5) アンサンブル変換カルマンフィルタ アンサンブル変換カルマンフィルタ，局所化，その実装</p> <p>(6) 4次元変分法の基礎 アンサンブル4次元変分法，アジョイント法</p> <p>(7) エミュレータの基礎 ガウス過程，エミュレータ</p> <p>(8) まとめ</p>					
Continue to データ科学：理論から実用へII(2)					

データ科学：理論から実用へII(2)

[Class requirement]

共通教育における微積分学・線形代数学・統計学入門程度の内容を理解していることが望ましい。
また、プログラミング(言語は問わない)や数値計算の入門程度の知識があることが望ましい。

[Method, Point of view, and Attainment levels of Evaluation]

講義中に課すレポートの内容により、到達目標への到達度を評価する。

[Textbook]

資料を配布する。

[Reference book, etc.]

(Reference book)

樋口知之編著 『データ同化入門』 (朝倉書店 2011) ISBN:978-4254127867

淡路敏之他編著 『データ同化 - 観測・実験とモデルを融合するイノベーション』 (京都大学学術出版会 2009) ISBN:978-4876987979

[Regarding studies out of class (preparation and review)]

予習の必要はないが、講義の内容について講義中に出した演習問題を解くなどして復習を行うことが望ましい。

[Others (office hour, etc.)]

講義中に教員との連絡方法について指示する。

Numbering code	G-LAS02 80001 SE48				
Course title <English>	大学院生のための英語プレゼンテーション Presentation for Graduate Students	Affiliated department, Job title,Name	Institute for Liberal Arts and Sciences Senior Lecturer,RYLANDER , John William		
Group	Common Graduate Courses	Field(Classification)	Language and Communication		
Language	English	Old group		Number of credits	1
Hours	15	Class style	Seminar	Course offered year/period	2019・Intensive, First semester
Day/period	Intensive	Target year	Graduate students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course is designed to provide graduate students with an opportunity to develop their ability and confidence when presenting field-specific content to an informed audience. Giving presentations in an academic setting, whether it is in a classroom, laboratory context, or at a conference, has become increasingly necessary for students at the graduate level. Course content extends from how to greet the audience to how to answer audience questions.					
[Course Goals]					
Students successfully completing this course will be able to do the following:					
<ul style="list-style-type: none"> • Create an appropriate presentation slideshow for a conference or a research laboratory presentation; • Clearly introduce and provide an overview of the talk through appropriate signposting; • Properly display visual aids to enhance audience understanding of research data; • Use posture and movement to engage the audience; • Use gestures and gaze to emphasize information and connect with the audience; • Produce a presentation; and • Answer audience questions. 					
[Course Schedule and Contents]					
Session 1: Purpose and structure of academic presentations Session 2: Topic selection and development Session 3: Information organization: From greetings to goodbyes Session 4: Creating effective slideshows and displaying research data Session 5: Body language and gestures Session 6: Answering audience questions Session 7: A special focus on data significance Session 8: Student presentations and instructor feedback					
[Class requirement]					
This course has a limit set on student enrollment. In the case where many students wish to enroll in class, a lottery system will decide inclusion.					
----- Continue to 大学院生のための英語プレゼンテーション(2)					

大学院生のための英語プレゼンテーション(2)

[Method, Point of view, and Attainment levels of Evaluation]

30% Active Participation
30% Slideshow Creation
40% Main and Minor Presentations

[Textbook]

Not used

[Reference book, etc.]

(Reference book)

All course materials will be provided to the students by the teacher.

[Regarding studies out of class (preparation and review)]

Students will be asked to work on several smaller in-class talks and one larger presentation as their primary out-of-class homework assignment.

[Others (office hour, etc.)]