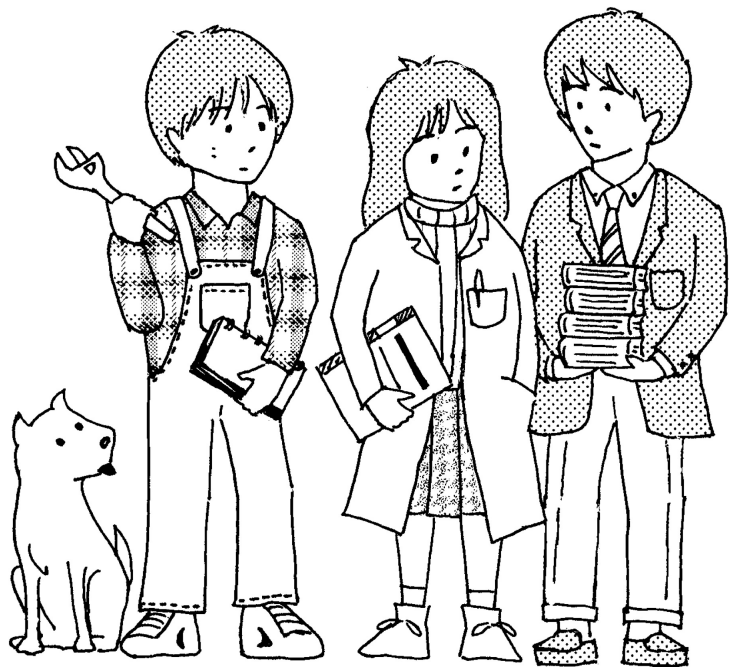


SYLLABUS

2015

[B] Architecture



Kyoto University, Faculty of Engineering

[B] Architecture

Architecture

| | |
|--|----|
| 40510 Introduction to Architectural Engineering | 1 |
| 40570 History of Japanese Urban Space | 2 |
| 40640 History of World Architecture | 3 |
| 40610 Atelier Practice of Architectural Design, Basis | 4 |
| 40720 Fundamental Training in Architectural Design | 5 |
| 40050 Architectural Planning I | 6 |
| 40060 Housing Design | 7 |
| 40160 Architectural Design Method | 8 |
| 40070 Atelier Practice of Architectural Design I | 9 |
| 40080 Atelier Practice of Architectural Design II | 10 |
| 40090 Environmental Engineering of Architecture I | 11 |
| 40100 Environmental Engineering of Architecture II | 12 |
| 40110 Mechanics of Building Structures I | 13 |
| 40120 Mechanics of Building Structures II | 14 |
| 40210 Construction Engineering and Management I | 15 |
| 40130 Materials for Buildings | 16 |
| 40430 Building and Urban Administration | 17 |
| 40410 Theory of Landscape Design | 18 |
| 40590 Computational Practice on Architectural Design and Engineering | 19 |
| 21020 Engineering Mathematics C | 20 |
| 40170 Urban Design | 21 |
| 40530 Behavior and Architectural Design Theory | 22 |
| 40580 History of Japanese Architecture | 23 |
| 40180 Building Systems Design | 24 |
| 40190 Reinforced Concrete Structure I | 25 |
| 40200 Steel Structure I | 26 |
| 40220 Mechanics of Building Structures III | 27 |
| 40280 Construction Engineering and Management II | 28 |
| 40290 Theory of Architecture | 29 |
| 40300 Theory of Living Space in the Region | 30 |
| 40520 Urban Environment Engineering | 31 |
| 40320 Lighting and Acoustics in Architecture | 32 |
| 40600 Thermal Environment Design of Architecture | 33 |
| 40340 Analytical Methods of Building Structures | 34 |
| 40360 Earthquake Resistant Structures | 35 |
| 40370 Reinforced Concrete Structure II | 36 |
| 40380 Steel Structure II | 37 |
| 40390 Atelier Practice of Architectural Design III | 38 |
| 40400 Atelier Practice of Architectural Design IV | 39 |

| | |
|--|----|
| 40540 Applied Mathematics for Architecture | 40 |
| 40270 Architectural Planning II | 41 |
| 40350 Foundation Engineering | 42 |
| 40420 Wind Resistant Structures | 43 |
| 30011 InTroducTion To Global Engineering | 44 |
| 40440 Atelier Practice of Architectural Design V | 45 |
| 40450 Exercises on Structural Design of Buildings | 46 |
| 40460 Laboratory Tests of Structural Materials and Members | 47 |
| 40470 Fire Safety Design of Buildings | 48 |
| 40730 Design Theory of Building Systems | 49 |
| 40230 Seminar of Practice in Architectural Environmental Engineering | 50 |
| 40650 English for Architects | 51 |
| 21050 Engineering Ethics | 52 |
| 21080 Introduction to Engineering | 53 |
| 22110 Engineering and Ecology(in English) | 54 |
| 22210 Engineering and Economy(in English) | 55 |
| 24010 Global Leadership Seminar I | 56 |
| 25010 Global Leadership Seminar II | 57 |
| 24020 International Internship of Faculty of Engineering I | 58 |
| 25020 International Internship of Faculty of Engineering 2 | 59 |

Introduction to Architectural Engineering

建築工学概論

【Code】 40510 【Course Year】 1st year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|--------------|--------------------------|--------------------|
| | 4 | |
| | 3 | |
| | 4 | |
| | 3 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

History of World Architecture

世界建築史

【Code】 40640 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 8 | |
| | 4 | |
| | 1 | |
| | 1 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Atelier Practice of Architectural Design, Basis

設計演習基礎

【Code】40610 【Course Year】1st year 【Term】 【Class day & Period】 【Location】 【Credits】2

【Restriction】No Restriction 【Lecture Form(s)】Seminar 【Language】Japanese 【Instructor】，

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 7 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

Fundamental Training in Architectural Design

建築造形実習

【Code】 40720 【Course Year】 1st year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Exercise 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 7 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Architectural Planning I

建築計画学 I

【Code】 40050 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 2 | |
| | 2 | |
| | 2 | |
| | 1 | |
| | 2 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Housing Design

住居計画学

【Code】 40060 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 5 | |
| | 2 | |
| | 2 | |
| | 2 | |
| | 1 | |
| | 1 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Architectural Design Method

建築設計論

【Code】 40160 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

Atelier Practice of Architectural Design I

設計演習 I

【Code】 40070 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Seminar 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 7 | |
| | 7 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Atelier Practice of Architectural Design II

設計演習 II

【Code】 40080 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Seminar 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|--------------|--------------------------|--------------------|
| | 7 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Environmental Engineering of Architecture I

建築環境工学 I

【Code】 40090 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Shuichi Hokoi, Kazunori Harada, Daisuke Ogura

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|--------------------------------------|-----------------------|--|
| building and climate | 2 | |
| thermal environment | 2 | |
| heat transfer in buildings | 3 | |
| air quality and ventilation | 5 | Sources of indoor air pollution, required ventilation rate, mechanism of ventilation, planning and calculation methods |
| solar and thermal radiation transfer | 2 | |
| evaluation of achievements | 1 | Achievement on above items will be evaluated. |

【Textbook】

【Textbook(supplemental)】 Shuichi Hokoi, Teturo Ikeda, Katsumichi Nitta, Kenchiku Kankyo Kougaku II (Environmental engineering in Architecture II, in Japanese), Asakura Shoten

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】 [Office hour] No specific time is to be specified. Those who want to make questions can make an appointment with lecture staff.

Environmental Engineering of Architecture II

建築環境工学 II

【Code】 40100 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 2 | |
| | 4 | |
| | 3 | |
| | 1 | |
| | 3 | |
| | 4 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Mechanics of Building Structures I

建築構造力学 I

【Code】 40110 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Mechanics of Building Structures II

建築構造力学 II

【Code】 40120 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,

【Course Description】 Axial deformation of a bar and bending deformation of a beam. Statically determinate truss and moment-resisting frame. Theory of statically indeterminate beams and buckling of columns. The force method and the displacement method (stiffness method) are described in the theory of statically indeterminate beams. Exercises are given for each subject.

【Grading】 Term examination

【Course Goals】 Study analysis method of bending deformation of beams and theory of statically indeterminate beams. In addition study the theory of statically determinate truss and moment-resisting frame and the theory of buckling of columns.

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|--|
| Axial deformation of a bar and bending deformation of a beam | 3 | Differential equation for deflection curve of a beam and Mohr ' s theorem for deflection analysis. |
| Theory of statically indeterminate beams 1 | 3 | Force method in terms of unknown stress resultants and reactions. |
| Theory of statically indeterminate beams 2 | 3 | Displacement method in terms of unknown displacements. |
| Statically determinate truss and frame | 2 | Analysis of stress resultants in statically determinate trusses and moment-resisting frames. |
| Buckling of column | 3 | Governing equation for a buckling problem of a column. Eigenvalue analysis. Slope-deflection method for buckling analysis. |
| Feedback using term exam | 1 | Conduct feedback using term exam through KULASIS |

【Textbook】 T.Nakamura (ed.) ‘ Mechanics of building structures I: Illustrative description and exercises ’ , Maruzen.

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】 Office hour: Friday 10:30-12:00.

Construction Engineering and Management I

建築生産 I

【Code】 40210 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】 Stakeholders and their roles in a building construction project will be explained, looking at the project process including project planning, architectural design, building construction, and maintenance.

【Grading】 Evaluated by Examination.

Accepted tasks, quiz, and attendance to the class will be considered.

【Course Goals】 Knowledge on building construction process.

B-B2.

【Course Topics】

| Theme | Class number of times | Description |
|--------------------------------|-----------------------|-------------|
| Introduction | 2 | |
| Construction market | 1 | |
| Building system | 5 | |
| Project planning | 1 | |
| Design in project process | 2 | |
| Building codes and regulations | 4 | |

【Textbook】 Shuzo FURUSAKA: KENCHIKU-SEISAN, Published by Riko Tosho.

ISBN978-4-8446-0746-5

【Textbook(supplemental)】

【Prerequisite(s)】 Social science and economics taught in High School.

【 】

【Web Sites】

【Additional Information】

Materials for Buildings

建築材料

【Code】 40130 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 1 | |
| | 4 | |
| | 3 | |
| | 4 | |
| | 2 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Building and Urban Administration

建築・都市行政

【Code】40430 【Course Year】2nd year 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】

【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】,,,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 3 | |
| | 2 | |
| | 2 | |
| | 4 | |
| | 1 | |
| | 1 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

Theory of Landscape Design

景観デザイン論

【Code】 40410 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 7 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Computational Practice on Architectural Design and Engineering

建築情報処理演習

【Code】 40590 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese

【Instructor】 D. Ogura, S. Matsushima, M. Kurata, Y. Onishi, C. Iba, Y. Horinouchi and M. Sakashita,

【Course Description】

【Grading】 It depends on the participation situation to practice and achievement tests in each term

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|---|-----------------------|-------------|
| Guidance | 1 | |
| Introduciton of programming (1st term) | 4 | |
| Slightly complicated programming (2nd term) | 4 | |
| Example of the computer application for building design | 1 | |
| Applied programing (3rd term) | 4 | |
| Academic achievement test | 1 | |

【Textbook】 H. Tomita and Y. Saito: Fortran90/95 Programing, Baifukan

【Textbook(supplemental)】 None. A document is appropriately distributed during practice.

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Engineering Mathematics C

工業数学 C

【Code】 21020 【Course Year】 2nd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Takashi Maruyama, Kazuyoshi Nishijima,

【Course Description】 This course provides lectures on applied probability theory, Fourier analysis and basic on engineering decision analysis. Emphasis is put on applications to engineering in general and architectural engineering in particular.

【Grading】 Examination

【Course Goals】 Successful students will be able to develop probabilistic models for uncertain phenomena and analysis therewith, (2) explain about Fourier analysis and its application and (3) formulate decision problems under uncertainty and optimize decisions.

【Course Topics】

| Theme | Class number of times | Description |
|-------------------------------|-----------------------|---|
| Applied probability theory | 6 | Methodology and analysis methods of uncertain phenomena such as loads acting on structures or material behaviors are introduced. Basics of the probability theory, probabilistic/statistical modeling and their parameter estimation as well as related tools such as First Order Reliability Method and Monte Carlo simulations are explained. |
| Fourier analysis | 6 | Fourier analysis is explained as a tool to analyze phenomena expanded in time and space. As its applications, solution methods for ordinary/partial differential equations, analysis of linear systems and applications to probabilistic analysis and information communications are introduced. |
| Engineering decision analysis | 2 | A decision theoretical framework for design and maintenance of structures is presented. Decision graph and its use are introduced. |
| | 1 ~ 2 | |
| | 2 ~ 3 | |
| | 2 ~ 3 | |
| Follow-up | 1 | |

【Textbook】 Statistics and Probability theory In Pursuit of Engineering Decision Support (Michael Havbro Faber, Springer)

【Textbook(supplemental)】

【Prerequisite(s)】 Calculus

【】

【Web Sites】

【Additional Information】 Some homework assigned. Questions after lectures. Feedback period after final exam.

Urban Design

都市設計学

【Code】 40170 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Kenji Okazaki,Hirohide Kobayashi,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|---------------------------|--------------------------------------|--------------------|
| History of cities | 4 | |
| City planning | 2 | |
| Infrastructure of cities | 2 | |
| Cities and disasters | 3 | |
| Cities and environment | 3 | |
| Evaluation of achievement | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Behavior and Architectural Design Theory

行動・建築デザイン論

【Code】40530 【Course Year】3rd year 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】No Restriction

【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】Teruyuki Monnai,

【Course Description】This course gives the basic knowledge to design desirable architectural spaces for human beings by searching for the relationship between man and behavior. The following topics on scientific methods of man-environment studies are explained to such end; territorial behavior, behavioral setting, wayfinding, group behavior. Then we show various design practices based on these principles, and discuss the new architectural design theory using the behavioral theory based on cognitive science and semiotics.

【Grading】by term-end examination

【Course Goals】To understand the architectural and urban spaces from the viewpoint of human cognition and behavior and to learn basic design methods based on such understanding. B. technical and basic knowledge, B2. understanding of architectural planning and designing.

【Course Topics】

| Theme | Class number of times | Description |
|---|-----------------------|---|
| Various Concepts on Human behavior and Environment | 3 | Man perceives environment based on diverse information such as form, color, movement, sound, and fragrance, acts in environment, reads environment as the significant world, and memorizes the place and landscape of environment. We explain such mechanism on perception, behavior, cognition, and memory in Man-Environment relations. Moreover we refer to the fundamental characteristics of human behavior including concept of identity and orientation, roundabout route, excursion characteristics, prospect and refuge, ordinary and extra-ordinary behavior. |
| Territorial Behavior and Behavioral Setting | 3 | We clarify the territorial behavior studied in proxemics such as personal space, crowding, neighborhood, and defensible space. Moreover we regard the combination of behavior and environment as behavioral setting, and explore the being of environment affording various human behaviors. |
| Spatial Orientation and Wayfinding Behavior | 3 | We consider the way of navigation based on the structural analysis of environmental image and cognitive map and explain the mechanism of wayfinding behavior and its simulation through the experiment in architectural and urban spaces. |
| Group Behavior and its Emergence | 2 | We explain the mechanism of collective behavior and its simulation. We also explore the emergence of macro group behavior from the interaction of micro subjects. |
| Behavior and Path Design | 2 | We analyze the various designs of behavior or path such as sequence landscape, front approach to a shrine, garden adjacent to a ceremonial teahouse, and Japanese garden with paths around ponds, and explain the notation systems of behavior and path developed in various design fields. Moreover we introduce the behavioral description based on time geography, and the effect of environmental transition on human behavior. |
| Perspective of behavior and Architectural Design theory | 1 | We give an outline of the relation among perception, cognition and behavior from the viewpoints of philosophy, phenomenology, gestalt theory, psychology, behavioral science, cognitive science, and semiotics. We also consider the possibility of behavior and architectural design in the broad contexts including the conservation and renewal of existing spaces, and cyber spatial design. |
| Confirmation of the learning degree | 1 | Summary of the lecture and evaluation of the learning degree |

【Textbook】using handout prints and slides

【Textbook(supplemental)】Architectural Institute of Design (ed.), Man-Environment System Design, SHOKOKUSHA, 1997 .
Architectural Institute of Design (ed.), Spatial Planning Theory for Architectural and Urban planning, INOUE SHOIN, 2002 .

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】Please contact to the following e-mail; monnai@archi.kyoto-u.ac.jp

History of Japanese Architecture

日本建築史

【Code】 40580 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 14 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Building Systems Design

建築設備システム

【Code】 40180 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 4 | |
| | 4 | |
| | 2 | |
| | 3 | |
| | 2 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Reinforced Concrete Structure I

鉄筋コンクリート構造 I

【Code】 40190 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 2 | |
| | 3 | |
| | 3 | |
| | 3 | |
| | 3 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Steel Structure I

鉄骨構造 I

【Code】 40200 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 2 | |
| | 2 | |
| | 1 | |
| | 1 | |
| | 2 | |
| | 2 | |
| | 1 | |
| | 3 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

Mechanics of Building Structures III

建築構造力学 III

【Code】 40220 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 4

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】 Slope-deflection method and moment distribution method. Force method and displacement method (stiffness method). Matrix method for structural analysis. Principles of virtual work and energy methods. Fundamental theory of structural analysis and theory of plastic analysis of frames.

【Grading】 Term examination

【Course Goals】 Study force method, displacement method (stiffness method) and matrix method for structural analysis. In addition study slope-deflection method and theory of plastic analysis of frames.

【Course Topics】

| Theme | Class number of times | Description |
|---|-----------------------|---|
| Fundamental theory of structural analysis and slope-deflection method | 4 | Frame analysis model and governing equation for slope-deflection method. |
| Moment distribution method | 1 | Moment distribution method without nodal lateral displacement. |
| Three-dimensional frame | 2 | Plane frames with equal horizontal displacements. Shear force distribution formula. Structural design of building frames. |
| Displacement method and force method | 9 | Member stiffness matrix and system stiffness equation for truss and moment-resisting frame. Treatment of mid-span loads. |
| Principles of virtual work | 5 | Principle of virtual displacement. Unit virtual displacement method and stiffness method. Principle of virtual force. Unit virtual force method. |
| Principles of energy methods | 3 | Stationary and minimum principles of total potential energy and complementary energy. |
| Plastic limit analysis and elastic-plastic analysis | 5 | Load-deformation curve for an elastic-perfectly plastic beam, plastic hinge, plastic collapse, virtual work equation, fundamental theorem for plastic limit analysis, plastic limit analysis of moment resisting frame. |
| Feedback using term exam | 1 | Conduct feedback using term exam through KULASIS |

【Textbook】 T.Nakamura (ed.) ‘ Mechanics of building structures II: Illustrative description and exercises ’ , Maruzen.

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】 Office hour: Before and after the class

Construction Engineering and Management II

建築生産 II

【Code】 40280 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】 Planning and management method in building construction project will be explained. Construction management and construction technology, integrated with information and communication technology, will be also explained with the latest project reports.

【Grading】 Evaluated by Examination.

Accepted tasks, quiz, and attendance to the class will be considered.

【Course Goals】 Basic knowledge on supervising and construction management.

C-C1.

【Course Topics】

| Theme | Class number of times | Description |
|----------------------------|-----------------------|-------------|
| Introduction | 1 | |
| Planning and management | 5 | |
| Management method | 2 | |
| Project management and ICT | 2 | |
| | 5 | |

【Textbook】 Shuzo FURUSAKA: KENCHIKU-SEISAN, Published by Riko Tosho.

ISBN978-4-8446-0746-5

【Textbook(supplemental)】

【Prerequisite(s)】 Requested to master "Construction Engineering and Management I" in advance.

【】

【Web Sites】

【Additional Information】

Theory of Architecture

建築論

【Code】 40290 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 6 | |
| | 7 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Theory of Living Space in the Region

都市・地域論

【Code】40300 【Course Year】3rd year 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】No Restriction

【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】KANKI Kiyoko.,

【Course Description】

【Grading】Short homeworks(2 or 3 times), Homework for Winter Holiday(1 time), and the result of the Examination

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|--|
| History of Modern City Planning | 1 | Overviewing the history of modern city planning and the trials of Utopian cities, and considering the meanings of them specially through how those trials have been inherited. |
| Building Control | 1 | Explaining the system of building control and urban development control by the building and City Planning regulation. |
| District Planning | 1 | Explaining the systems of the district planning, with a special focus on the local community's initiative and the systems' result and potential. |
| Spacial Structure of Villages and Cities | 1 | Understanding the attractive spacial structures of traditional villages and city areas, with a special concern with the method to find the spacial structures and those meanings. |
| Landscape Planning | 1 | Explaining the system of planning for the landscape conservation. Here we consider landuse and natural environment as well as the design of building. Understanding the regulation and also considering the way we can create the new and high-qualified designs under the regulation. |
| Land Use Planning | 1 | Understanding the system of land use planning including nature protection, parks and openspace, agricultural land use regulation, forestry land use regulation and city planning. |
| How to utilize Maps and Aerophotos | 1 | Explaining how to utilize maps, aerophotoes, old drawings, and other materials which shows us how a certain district has been transformed. This is an important and basic approaches to understand the meanings of each building site. |
| Parks and Openspaces | 1 | Explaining the planning systems for parks and openspaces. Specially we will focus on the ecological planning and also on the local community's participation. |
| Community and Planning for disaster prevention | 2 | Explaining the planning system for disaster prevention in the cities, with a special concern with traditional towns and villages mainly composed with wooden houses and narrow street system. We also focus on the roles of parks and openspaces for disaster prevention. |
| Planning for urban traffic | 1 | Explaining the updated planning tools for urban traffic, with a special concern with the TDM cases and the relation between traffic planning and old city revitalization. |
| Urban Development Projects | 1 | Explaining the systems of urban development projects such as the land readjustment project, the urban redevelopment projects and the new town development. We also focus on the recent problems of those systems. |
| Master Plan | 1 | Explaining the system and contents of master plan, with a special concern with the history of several master plans have been introduced. |
| Case excersise | 2 | Case study and distict planning exercises |

【Textbook】MIMURA Hiroshi, "Chiiki Kyosei No Toshi Keikaku" (Ver.3, 2005, Gakugeishuppan)

【Textbook(supplemental)】Additional Documents will be distributed during each lectures. Field Survey in Kyoto City Area will be held.

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】Monday 16:15 -- 18:00, at 1st floor of KenchikuHonkan

Urban Environment Engineering

都市環境工学

【Code】 40520 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Kazunori HARADA, Yoshiaki UETANI,

【Course Description】 In the urban area, buildings and public structures are densely located. Majority of human activities are carried out in relation with these structures. Consumption of energy and natural resources are deeply related with the interaction with activities and structures. In this course, lectures will be given on the state-of-the-art of energy and natural resource consumption in relation with urban structures, energy saving strategies, the concept of environmental friendly city/architecture.

【Grading】 Score is evaluated based on end-term examination and other materials.

【Course Goals】 B1) scientific ability to solve problems, B4) understanding of environmental engineering aspects in architecture, C2) understanding societal role of architecture

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|---|
| Global environment and sustainable development | 1 | Inter-relations between architectural, urban and global environment. Sustainable development, evaluation of environmental impact. |
| Explosion of urban area environmental impact | 2 | History of urban area development, increase in environmental pollution, energy use and environmental impact. |
| Mechanism of Heat Island and Countermeasures | 4 | The mechanism and the state-of-the-art of urban warming, often referred to heat island, are explained. The existing and future countermeasures are to be discussed. |
| Green | 1 | Urban green, city park, green area ratio and vegetation are explained. Methods and effects of greening buildings and case studies are described. |
| Sunlight | 2 | |
| Daylighting | 2 | |
| Post-Kyoto Protocol | 1 | |
| Renewable energy | 1 | |
| Evaluation of Achievement | 1 | Achievement on above items will be evaluated. |

【Textbook】 None specified. Handouts will be supplied on site.

【Textbook(supplemental)】 To be suggested during the course.

【Prerequisite(s)】 The participants are required to study Environmental engineering in Architecture I (40090) and II (40100) prior to join this course. In addition, the knowledge on Building Systems Design (40180) is desirable.

【】

【Web Sites】

【Additional Information】 [Office hour] Opportunity for Q&A will be provided during the spare time before and after each lecture. Participants can make appointments for further questions.

Lighting and Acoustics in Architecture

建築光・音環境学

【Code】 40320 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 3 | |
| | 2 | |
| | 2 | |
| | 2 | |
| | 2 | |
| | 3 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Thermal Environment Design of Architecture

建築温熱環境設計

【Code】 40600 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Shuichi HOKOI, Daisuke OGURA, Chiemi IBA,

【Course Description】 In this course, basic concepts for controlling thermal environment of daily habitation space such as especially dwellings. Practical methods for pasive thermal environment control is described.

【Grading】 Score is evaluated based on end-term examination and other materials.

【Course Goals】 The participants will be trained so that he/she can develop conceptual design of passive controlling elements and their combination for use in dwellings. Corresponding goals for education of department are C: Practical skills, C1: Capability in Realize Building Projects.

【Course Topics】

| Theme | Class number of times | Description |
|--------------------------------------|-----------------------|-------------|
| Introduction - climate and buildings | 1 | |
| Utilization of heat capacity | 2 | |
| Benefits and risk of moisture | 2 | |
| Thermal system of human body | 1 | |
| Insulation of building envelope | 2 | |
| Solar shading and utilization | 2 | |
| Cross ventilation | 2 | |
| Indoor air quality | 1 | |
| Residential commissioning | 1 | |
| Evaluation of achievement | 1 | |

【Textbook】 None specified. Handouts will be supplied on site.

【Textbook(supplemental)】 To be suggested during the course.

【Prerequisite(s)】 The participants are required to study Environmental engineering in Architecture I (40090) and II (40100) prior to join this course.

【 】

【Web Sites】

【Additional Information】 [Office hour] Opportunity for Q&A will be provided during the spare time before and after each lecture. Participants can make appointments for further questions.

Analytical Methods of Building Structures

建築構造解析

【Code】 40340 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 6 | |
| | 4 | |
| | 4 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Earthquake Resistant Structures

耐震構造

【Code】 40360 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 6 | |
| | 2 | |
| | 2 | |
| | 3 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Reinforced Concrete Structure II

鉄筋コンクリート構造 II

【Code】 40370 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 2 | |
| | 4 | |
| | 6 | |
| | 2 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

Steel Structure II

鉄骨構造 II

【Code】 40380 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 2 | |
| | 1 | |
| | 2 | |
| | 2 | |
| | 1 | |
| | 2 | |
| | 1 | |
| | 2 | |
| | 1 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Atelier Practice of Architectural Design III

設計演習 III

【Code】 40390 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 3

【Restriction】 No Restriction 【Lecture Form(s)】 Seminar 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 14 | |
| | 14 | |
| | 2 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Atelier Practice of Architectural Design IV

設計演習 IV

【Code】 40400 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 3

【Restriction】 No Restriction 【Lecture Form(s)】 Seminar 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 14 | |
| | 14 | |
| | 2 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Applied Mathematics for Architecture

建築応用数学

【Code】 40540 【Course Year】 3rd year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese

【Instructor】 Katoh, Hokoi, Takahashi, Kawase,

【Course Description】 Applied Mathematics required for understanding architecture such as architectural planning, structural design, environmental design is taught. It is aimed that students will acquire the ability to understand and analyze the architecture from mathematical viewpoint.

【Grading】 Final examination

【Course Goals】 Ordinary and partial differential equations, integral transform, probability theory and statistics, calculus of variation

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|--|
| Ordinary and partial differential equation | 3 ~ 4 | General method to solve ordinary differential equations is explained. |
| integral transform | 4 ~ 5 | Fourier transform and Laplace transform are explained. |
| probability theory and statistics | 2 ~ 3 | Fundamentals of probability and Markov process are taught. Also, statistical methods such as regression analysis are taught. |
| calculus of variation | 3 | |
| Verification of how students understand | 1 | About what students learned in the previous 14 lectures, we check how deep they understand the contents of each unit. |

【Textbook】 Katoh, Hokoi, Takahashi, Ohsaki, Mathematics for architectural engineering, (in Japanese) Asakura shoten, 2007

【Textbook(supplemental)】

【Prerequisite(s)】 Calculus, mathematical statistics and industrial mathematics are prerequisite.

【】

【Web Sites】

【Additional Information】 Please contact teachers in advance when you have questions.

Architectural Planning II

建築計画学 II

【Code】40270 【Course Year】4th year 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】No Restriction

【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】Teruyuki Monnai,Tetsu Yoshida,Norio Maki,

【Course Description】 We give a lecture on fundamental knowledge and methods on planning and design of contemporary architecture. To the end, we explain the method of observation, description, evaluation of man-environment relations and the planning and design methods of living environment including architecture based on the knowledge of man-environment relations. Firstly we overview the history and future possibility of theory and practice of architectural planning, and then explain the new architectural planning methods based on ma-environment studies including behavioral science and cognitive science, and the mechanism of design process and design organization. Finally we look over the methodology of architectural planning as man-environment system design.

【Grading】 by term-end examination

【Course Goals】 To develop practical design ability of architectural spaces based on man-environment relations. C. practical ability, C1. ability to realize architectural space.

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|--|
| Perspective of Theory and Practice of Architectural Planning | 1 | We explain the outline of development of the architectural planning exploring the relationship between life and space, and look out the future possibility of architectural planning from the viewpoints such as function, meaning, form, space, topos, history, environment, society, and information. |
| Man-environment Study and Architectural Planning | 2 | We give a lecture on fundamental knowledge on the planning and design methods for desirable architectural space based on the mechanism of perception, behavior, cognition, and memory. Especially we explain the panning methods of architectural and urban space which afford various meaningful behaviors. |
| Design Methodology and Architectural Planning | 3 | We explain the design methodology clarifying the mechanism of design object, design process, design subject, and design language. It is very important to understand the various design methods applicable to architectural planning including the systematic design methods to solve the design problems based on technical rationality and the design methods by dialogue to solve the complex and uncertain problems through the back-talk from circumstances. |
| Man-environment System Design | 5 | In the 21st century the coexistence with environment, aging, computerization, globalization, and urban regeneration bring the drastic change of the needs and sense of values concerning architectural planning. Therefore we are asked to deign architectural objects considering their impact on man-environment system. We give a lecture new architectural planning methods such as sustainable design, universal design, and design for information-oriented society. |
| Methodology of Architectural Planning | 3 | We look over the architectural planning and design methods such as programming, planning, designing, management, collaboration, field survey, observation method, statistical analysis, experiment, modeling and simulation, and the method of decision-making and evaluation. At last we would like to consider the possibility of architectural planning science. |
| Confirmation of the learning degree | 1 | Summary of the lecture and evaluation of the learning degree |

【Textbook】 using handout prints and slides

【Textbook(supplemental)】 Architectural Institute of Design (ed.), Man-Environment System Design,SHOKOKUSHA, 1997 . Architectural Institute of Design (ed.), Spatial Planning Theory for Architectural and Urban planning, INOUE SHOIN, 2002 .

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】 Please contact to the following e-mail; monnai@archi.kyoto-u.ac.jp

Foundation Engineering

建築基礎構造

【Code】 40350 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Hiroshi KAWASE, Shinichi MATSUSHIMA, Masaaki TSUJI,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 2 | |
| | 3 | |
| | 1 | |
| | 2 | |
| | 1 | |
| | 2 | |
| | 2 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Wind Resistant Structures

耐風構造

【Code】 40420 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Takashi Maruyama, Kazuyoshi Nishijima

【Course Description】

【Grading】 By reports or examination

【Course Goals】 Acquisition of knowledge on wind resistant design. Understanding the estimation of wind load and the construction from the stand point of wind resistant design.

【Course Topics】

| Theme | Class number of times | Description |
|----------------------------------|-----------------------|-------------|
| Characteristics of wind | 4 | |
| Basic of wind force and pressure | 4 | |
| Wind load | 3 | |
| Wind resistant design | 3 | |
| Check of achievement | 1 | |

【Textbook】 No textbook, using notebook.

【Textbook(supplemental)】 None

【Prerequisite(s)】 Structural engineering, fluid dynamics, meteorology will be useful.

【 】

【Web Sites】 None

【Additional Information】 Questions : directing during class

InTroductIon To Global Engineering

地球工学総論（地球工学）

【Code】30011 【Course Year】4th year 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】

【Lecture Form(s)】 【Language】 Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|-------------------------------|--------------------------------------|--------------------|
| Guidance | 1 | |
| Safety and Engineering Ethics | 1 | |
| General Lectures | 5 | |
| Seminars | 6 | |
| Laboratory Visit | 2 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

Atelier Practice of Architectural Design V

設計演習 V

【Code】 40440 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 3

【Restriction】 No Restriction 【Lecture Form(s)】 Seminar 【Language】 Japanese 【Instructor】 ,,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 29 | |
| | 29 | |
| | 29 | |
| | 29 | |
| | 29 | |
| | 29 | |
| | 29 | |
| | 29 | |
| | 29 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Exercises on Structural Design of Buildings

構造設計演習

【Code】 40450 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 2 | |
| | 1 | |
| | 1 | |
| | 5 | |
| | 6 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Laboratory Tests of Structural Materials and Members

構造・材料実験

【Code】 40460 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 3 | |
| | 1 | |
| | 3 | |
| | 2 | |
| | 3 | |
| | 3 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Fire Safety Design of Buildings

建築安全設計

【Code】40470 【Course Year】4th year 【Term】 【Class day & Period】 【Location】 【Credits】2

【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】Kazunori HARADA,

【Course Description】In buildings and urban facilities, various fire safety measures are implemented, even though they are not well recognized in daily life. In the first half of this course, fundamentals on physical and chemical aspects of building fires are described. In the latter half, design methodologies for fire-safe buildings are described.

【Grading】Score is evaluated based on end-term examination and other materials.

【Course Goals】B1) scientific ability to solve problems, B4) understanding of environmental engineering aspects in architecture, C2) understanding societal role of architecture

【Course Topics】

| Theme | Class number of times | Description |
|---------------------------------|-----------------------|--|
| Introduction | 1 | The historical fire disasters are described to show the whole view of fire safety issues of buildings and urban area. |
| Basics of Fire Phenomena | 6 | Basic fire phenomena such as ignition, burning, spread, fire plume, initial room fire, flashover and fully-developed stage are described in sequence of fire development. |
| Fire Safety Design of Buildings | 7 | The principles of fire safety of buildings are described in terms of fire compartmentation, smoke control, egress of occupants, fire fighter's operation, structural fire resistance design. |
| Evaluation of Achievement | 1 | Achievement on above items will be evaluated. |

【Textbook】Kenchiku Kasaino Mekanizumuto Kasaienzen Sekkei (Mechanism of Building Fires and Safety Design), the Building Center of Japan, 2007 (in Japanese)

【Textbook(supplemental)】Saburo HORIUCHI, Building Fire Prevention, new ed., Asakura Shoten // Takeyoshi TANAKA, An Introduction to Building Fire Safety Engineering, The Building Center of Japan, 2002 // Guidebook on performance Verification methods for egress safety, The Housing Bureau of Ministry of Land, Infrastructure and Transportation, Inoue Shoin, 2000
Guidebook on performance Verification methods for fire resistance, The Housing Bureau of Ministry of Land, Infrastructure and Transportation, Inoue Shoin, 2000

【Prerequisite(s)】The participants are requested to accomplish Environmental engineering in Architecture I (40090), II (40100) and Building Systems Design (40180) prior to join this course.

【】

【Web Sites】

【Additional Information】[Office hour] Opportunity for Q&A will be provided during the spare time before and after each lecture. Participants can make further appointments for further time for questions.

Design Theory of Building Systems

建築設備計画法

【Code】 40730 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Shuichi HOKOI, Hirotsugu TAKAHASHI, Kazunori HARADA, Taiichiro ISHIDA, Yosiaki UETANI, Daisuke OGURA, Masahiko OISHI,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|------------------------------|-----------------------|---|
| | 1 | |
| | 1 | |
| | 2 | |
| | 1 | |
| | 3 | |
| design of fire safety system | 2 | The schematics of fire safety system, such as fire detection, suppression and egress guidance, are introduced in connection with building design. The state of seismic damage of building equipment is introduced. The design method of building equipment against seismic action will be explained |
| | 1 | |
| | 2 | |
| | 1 | |

【Textbook】 None specified. Exercise sheet will be provided during the lecture.

【Textbook(supplemental)】

【Prerequisite(s)】 Knowledge on Environmental Engineering in Architecture I(40090) and II(40100) are necessary. In addition, it is desirable that the participants have joined the following courses; Building Systems Design(40180), Lighting and Acoustics in Architecture (40320), Urban Environment Engineering (40520), Thermal Environment Design of Architecture(40600).

【 】

【Web Sites】

【Additional Information】 [Office hour] Questions are accepted at occasion. Contact lecturers for the arrangement of office hours.

Seminar of Practice in Architectural Environmental Engineering

建築環境工学演習

【Code】 40230 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Seminar 【Language】 Japanese

【Instructor】 Shuichi HOKOI, Hirotugu TAKAHASHI, Kazunori HARADA, Taiichiro ISHIDA, Yoshiaki UETANI, Daisuke OGURA, Yoshinari Horinouchi, Chiemi Iba,

【Course Description】 This course is provided to enhance global understanding of the contents lectured in Environmental Engineering in Architecture I & II, and to develop capability in applying the knowledge to real projects. For each topic, examples of design problems are supplied. The participants are to solve the problems by their own skills while interacting with lectures.

【Grading】 Score is evaluated based on reports and participation.

【Course Goals】 The goal is to make global understanding of the elements in environmental engineering in architecture and their mutual relationships. Corresponding goals for education of department are; A: global capability, A2: Capability in understanding the value of architecture in multiple measures, C: Practical skills, C1: Capability in Realize Building Projects.

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|--|
| heat conduction and condensation | 3 | |
| HVAC system | 3 | |
| Building accoustics | 3 | |
| lighting and color | 1 | |
| Solar characteristics and daylighting | 1 | |
| ventilation and smoke control for evacuation | 2 | (1) Basic subjects on ventilkation design such as Velnouille's for mula, pressure difference, friction coefficients, wind pressure coefficients, newtral plane height. (2) Smoke control design for escape from fire in a building |
| special lecture and/or site visit | 1 | Special lecture or site visit are to be planned to introduce design and construction of environmental control systems of real building projects. |
| | 1 | |

【Textbook】 None specified. Practice sheet will be provided during the course.

【Textbook(supplemental)】 Textbooks and notebooks on the courses specified below are necessary for consultation. Function calculator must be provided by participants themselves.

【Prerequisite(s)】 The participants are required to study Building Systems Design (40180), Environmental engineering in Architecture I (40090) and II (40100) prior to join this course. In addition, the knowledge on Building Systems Design (40180), Urban Environment Engineering (40520), Lighting and Acoustics in Architecture (40320), Thermal Environment Design of Architecture (40600) is desirable.

【】

【Web Sites】

【Additional Information】 [Office hour] Opportunity for Q&A will be provided during the spare time before and after each lecture. Participants can make appointments for further questions.

English for Architects

専門英語

【Code】 40650 【Course Year】 4th year 【Term】 【Class day & Period】 【Location】 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 3 | |
| | 1 | |
| | 2 | |
| | 2 | |
| | 2 | |
| | 1 | |
| | 4 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Introduction to Engineering

工学序論

【Code】 21080 【Course Year】 1st year 【Term】 【Class day & Period】 【Location】 【Credits】 1

【Restriction】 No Restriction 【Lecture Form(s)】 【Language】 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1~2 | |
| | 6 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Engineering and Ecology(in English)

工学とエコロジー (英語)

【Code】 22110 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】 2 【Restriction】 【Lecture Form(s)】

【Language】 English 【Instructor】 ,

【Course Description】 The purpose of this course is to teach global ecological and environmental topics from an engineer viewpoint. The course especially contains such global ecological and environmental topics where engineering can provide solutions for sustainability. The course is consisted of lectures and additional exercises, of which the student should complete five (5) written short reports and five (5) 60 minutes laboratory session attendances. The laboratory sessions are held weekly after the lecture, and consist of interactive group work tasks.

【Grading】 Test, reports, laboratory performance.

【Course Goals】 This course will provide tasks for engineering students to become aware of the relationships between engineering and various aspects of environmental issues. Students will also learn how to apply engineering skills to various environmental and ecological issues. The course prepares the students to be able to write engineering related ecological and environmental topics in English as well as verbally express themselves of these subjects.

【Course Topics】

| Theme | Class number of times | Description |
|---|-----------------------|-------------|
| Student orientation, and Basic issues and critical thinking about the environment | 1 | |
| Environment and human population, ecosystems and communities | 2 | |
| Succession and restoration | 3 | |
| Biogeography | 4 | |
| Productivity and energy flow | 5 | |
| World food supply | 6 | |
| Effects of agriculture | 7 | |
| Basics of energy, fossil fuels | 8 | |
| Alternative - and nuclear energies and environment | 9 | |
| Water supply and use | 10 | |
| Water management, pollution and treatment | 11 | |
| Air pollution, Environmental economics | 12 | |
| Waste management, environmental planning | 13 | |
| Final test | 14 | |

【Textbook】

【Textbook(supplemental)】 None

【Prerequisite(s)】 Note:

- Interactive lessons (discussion), Small group working method
- This course is held in English.

【】

【Web Sites】 None

【Additional Information】 If you have any questions or need further information, feel free to contact at 090aglobal@mail2.adm.kyoto-u.ac.jp.

Engineering and Economy(in English)

工学と経済（英語）

【Code】22210 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】 【Lecture Form(s)】

【Language】English 【Instructor】,

【Course Description】 The purpose of this course is to teach economy from an engineer viewpoint. The course especially contains such economic topics which engineer can use to solve practical engineering economy problems. The course is consisted of lectures and additional exercises, of which the student should complete five (5) written short reports and five (5) 60 minutes laboratory session attendances. The laboratory sessions are held weekly after the lecture, and consist of interactive group work tasks. Laboratory sessions are held weekly from 18 to 19 o'clock.// The course is aimed for both Japanese and Foreign nationals.// The course starts on October 6th.

【Grading】 Test, reports, laboratory performance.

【Course Goals】 This course will provide tasks for engineering students to be able to understand relationships between engineering and engineering economy. Students will learn solving economic problems related to engineering project at various levels. The course also prepares the students to write engineering related economic topics in English as well as verbally express themselves of these subjects.

【Course Topics】

| Theme | Class number of times | Description |
|--|-----------------------|---|
| Student orientation, Introduction to engineering economy | 1 | Course introduction; Principles of engineering economy |
| Cost concept | 1 | Cost terminology; Competition; Total revenue function; Breakeven point |
| Design economics | 1 | Cost-driven design; Making vs. purchasing; Trade-offs |
| Cost estimation techniques I | 1 | Integrated approach and WBS; Index, unit, and factor techniques |
| Cost estimation techniques II | 1 | Parametric estimating; Power-sizing technique; Learning curve; Cost estimation, bottom-up, top-down, target costing |
| The time value of money I | 1 | Simple interest; Compound interest; Equivalence concept; Cash-flow diagrams |
| The time value of money II | 1 | Present and future equivalent values of single cash flows |
| The time value of money III | 1 | Uniform series cash flows; Deferred annuities; Uniform gradient cash flows; Nominal and effective interest rates |
| Evaluation of a single project I | 1 | Determining minimum attractive rate of return (MARR); The present worth method; Bond value; Capitalized-worth method |
| Evaluation of a single project II | 1 | The future worth method; The annual worth method; The internal rate of return method; The external rate of return method |
| Comparison and selection among alternatives I | 1 | Basic concepts; The study (analysis) period; Useful lives are equal to the study period |
| Comparison and selection among alternatives II | 1 | Useful lives are unequal to the study period; Repeatability; Cotermination; The imputed market value technique |
| Income taxes and depreciation | 1 | Concepts and terminology; Depreciation; Straight-line method; Declining-balance method; Income taxes; Marginal tax; Gain or loss on the disposal of an asset; After-tax economic analysis |
| Final test | 1 | The test is based on the above topics |

【Textbook】 Sullivan, Wicks, Koelling; Engineering Economy, 15th Ed. 2012, Chapters 1-7.

【Textbook(supplemental)】

【Prerequisite(s)】 Note:

- Interactive lessons (discussion), Small group working method
- This course is held in English.

【】

【Web Sites】 None

【Additional Information】 If you have any questions or need further information, feel free to contact at 090aglobal@mail2.adm.kyoto-u.ac.jp.

Global Leadership Seminar I

G L セミナー (企業調査研究)

【Code】24010 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】1 【Restriction】

【Lecture Form(s)】 【Language】Japanese 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | Class number of times | Description |
|-------|-----------------------|-------------|
| | 1 | |
| | 2~3 | |
| | 2~3 | |
| | 12 | |
| | 3~4 | |
| | 1 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

Global Leadership Seminar II

G L セミナー (課題解決演習)

【Code】25010 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】1 【Restriction】

【Lecture Form(s)】 【Language】 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

| Theme | <small>Class number of times</small> | Description |
|--------------|--------------------------------------|--------------------|
| | 1 | |
| | 2 | |
| | 1 | |
| | 3 | |
| | 7 | |
| | 1 | |
| | 1 | |

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

International Internship of Faculty of Engineering I

工学部国際インターンシップ 1

【Code】 24020 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】 1 【Restriction】

【Lecture Form(s)】 Exercise 【Language】 English, et al.

【Instructor】 Faculty of Engineering, Professor, Hitoshi Mikada and the related faculty members

【Course Description】 Acquisition of international skills with the training of foreign language through the to internship programs hosted by the University, the Faculty of Engineering, or the Departments in the Department.

【Grading】 Marit rating is done based on the presentation or reports after each internship program. Each D epartment responsible to identify if the credit earned by this subject to be included as mandatory ones or not. If the credit is not included in the department in which the participant belongs to, the credit is granted by the Global Leadership Education Center as a optional credit. The number of credits, either 1 or 2, will be determined depending on the contents and the duration of the program that the participant has participated in.

【Course Goals】 The acquisition of international skills with the training of foreign language through the to internship programs hosted by the University is the major expectation to the students.

【Course Topics】

| Theme | Class number of times | Description |
|-------|--------------------------|-------------|
|-------|--------------------------|-------------|

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

International Internship of Faculty of Engineering 2

工学部国際インターンシップ 2

【Code】 25020 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】 2 【Restriction】

【Lecture Form(s)】 Exercise 【Language】 English, et al.

【Instructor】 Faculty of Engineering, Profesor, Hitoshi Mikada, and the related faculty members

【Course Description】 Acquisition of international skills with with the training of foreign language through the participation to the international internship programs held by the Faculty of Engineering or its subsidiary bodies.

【Grading】 Marit rating is done based on the presentation or reports after each internship program. Each D epartment responsible to identify if the credit earned by this subject to be included as mandatory ones or not. If the credit is not included in the department in which the participant belongs to, the credit is granted by the Global Leadership Education Center as a optional credit. The number of credits, either 1 or 2, will be determined depending on the contents and the duration of the program that the participant has participated in.

【Course Goals】 The acquisition of international and foreign language skills through the participation to international programs is expected. Detailed objectives of the participation should be identified by each program.

【Course Topics】

| Theme | Class number of times | Description |
|-------|--------------------------|-------------|
|-------|--------------------------|-------------|

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【 】

【Web Sites】

【Additional Information】

工学部シラバス 2015 年度版
([B] Architecture)
Copyright ©2015 京都大学工学部
2015 年 4 月 1 日発行 (非売品)

編集者 京都大学工学部教務課
発行所 京都大学工学部
〒 606-8501 京都市左京区吉田本町

デザイン 工学研究科附属情報センター

工学部シラバス 2015 年度版

- ・ Common Subjects of Faculty of Engineering
- ・ [A] Global Engineering
- ・ [B] Architecture
- ・ [C] Engineering Science
- ・ [D] Electrical and Electronic Engineering
- ・ [E] Informatics and Mathematical Science
- ・ [F] Industrial Chemistry
- ・ オンライン版 <http://www.t.kyoto-u.ac.jp/syllabus-s/>

本文中の下線はリンクを示しています。リンク先はオンライン版を参照してください。

オンライン版の教科書・参考書欄には 京都大学蔵書検索 (KULINE) へのリンクが含まれています。

