

Development of Structure and Technology (2.0credits) (構造物と技術の発展)

Course Type	Basic Specialized Courses		
Class Format	Lecture		
Course Name	Civil Engineering	Architecture	
Starts 1	1 Spring Semester	1 Spring Semester	
Elective/Compulsory	Compulsory	Compulsory	
Lecturer	norimi mizutani Professor	Hikaru NAKAMURA Professor	Masaki NAKANO Professor
	nobuo hukuwa Professor	Ippei MARUYAMA Professor	Keiichi ARAKI Professor

Course Purpose

The historical changes and the role of construction technology in civil engineering and architecture are based on the basic characteristics of materials such as soil, steel, and concrete, design and technical perspectives, and water, energy and transportation. This course outlines from the viewpoints of social infrastructure development and disaster prevention theory for various natural disasters, and introduces the historical development of typical technologies and structures.

The aim of this course is to nurture the comprehensive and creative capabilities to solve technical issues in civil engineering and architectural structures as well as to teach the historical aspects of civil engineering and architecture that lead from the past to the future and their significance.

At the end of the course, students should be able to understand the history of development and the overall picture of typical civil engineering and architectural structures, and to explain them from the viewpoint of material properties such as soil, steel, concrete, as well as design and technical perspectives, and from the viewpoints of social infrastructure development and disaster prevention theory.

Prerequisite Subjects

The background subject is not specified because this is a course in the first spring semester to introduce the outline of the subject.

Course Topics

1. Guidance
2. Ethics for engineers
3. Development of construction materials and structures
4. Maintenance of infrastructures
5. Geotechnical engineering for supporting national land
6. Geotechnical disaster prevention engineering and environmental geotechnical engineering
7. Beach erosion and its countermeasures
8. Mechanism of storm surges and tsunamis, and coastal disaster prevention
9. Beginning of concrete and reinforced concrete buildings
10. Construction technology for medium/ high rise reinforced concrete buildings
11. Lessons learned from past earthquake disasters
12. Countermeasures for Nankai Trough Earthquake
13. Architectural structure and mechanics
14. Failure mode of structure and dynamics
15. Summary

After the class, you should review the distributed prints. In addition, you will be required to submit a report task several times.

Textbook

Handouts will be distributed by each faculty member.

Additional Reading

Reference books will be introduced as appropriate according to the related content

Grade Assessment

Each instructor individually assigns a report task related to the lecture, scores the report contents, and comprehensively evaluates the total score. And, a passing requirement is C grade or higher. Acceptance criteria are to be able to understand the historical inheritance of technology for civil engineering and architecture and its significance, and explain the technical issues of civil engineering and architectural structures and their solutions based on your own ideas.

Notes

No course requirements are required.

Contacting Faculty

Welcome questions during the class. Each faculty member also accepts questions at the room and by e-mail at any time.

(Hikaru NAKAMURA ExE. 5690, hikaru@cc.nagoya-u.ac.jp)

History of City and Civilization (2.0credits) (都市と文明の歴史)

Course Type	Basic Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	1 Spring Semester	1 Spring Semester
Elective/Compulsory	Compulsory	Compulsory
Lecturer	Takayuki MORIKAWA Professor	Kazuhisa TSUNEKAWA Associate Professor

Course Purpose

Outline the history of city and civilization from ancient times to the present day and master basic knowledge to think about the future of the city.

Lecture while relating to the growth and decline of urban areas based on natural conditions, economic development stage and social background, problems and overcoming environmental hygiene, trends of transportation technology and automobile civilization, and technology development and design of building.

Prerequisite Subjects

Course Topics

1The birth, growth and decline of modern cities,

Progress of automobile civilization and suburbanization VS New city civilization, history of traffic technology.

2History of Japanese cities : Ancient: Formation of the city, Heijokyo and Heiankyo, Early modern times: castle town, modern: from Edo to Tokyo, modern urban planning, contemporary: modern urban planning, Nagoya , Urban space in Japan: formation principle, composition technique, city and architecture

3History of Western cities: Ancient: Athens, Rome, etc., Middle Ages: Venetia · Siena etc., Renaissance · Baroque: Florence, 18th-19th century: London · Paris, Modern city theory: New York etc.

Textbook

Architectural Institute of Japan ed., Toshi-shi Zushu, Shokoku-sha

Additional Reading

Grade Assessment

Paper and exam

Notes

Contacting Faculty

morikawa@nagoya-u.jp

tsune@nagoya-u.jp

Course Type	Basic Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	1 Spring Semester	1 Spring Semester
Elective/Compulsory	Compulsory	Compulsory
Lecturer	Toshiyuki YAMAMOTO Professor	

Course Purpose

Fundamentals of computers and network are discussed. Communication with e-mail, browsing internet resources and learning some applications are the main part of this course. Exercises using the computer system in the Center for Information Media Studies enhance the acquired ability.

We will obtain the skills below

1. make and organize documents with computers
2. use e-mail properly
3. understand the structure of webpages, and make simple webpages
4. Build simple codes, and calculate some problems

Prerequisite Subjects

Course Topics

1. Computer ethics
2. File operation
3. E-mail and Netnews
4. Access to the Internet and Homepages
5. Webpage development
6. Programming

Textbook

Kenichi Harada: Fortran 77 programing, Saiensu-sha

Additional Reading

Introduced according to the process of the lecture.

Grade Assessment

Active participation in class is required. Reports are evaluated.

Notes

Contacting Faculty

Ask questions in classes. No fixed schedules for office hour is set, so ask questions by email, or make an appointment by email for face-to-face inquiry.

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

Introduction to Structural Mechanics (2.0credits) (形と力)

Course Type	Basic Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	1 Autumn Semester	1 Autumn Semester
Elective/Compulsory	Compulsory	Compulsory
Lecturer	Junji KATO Professor	Jun TOBITA Professor

Course Purpose

To learn the basic relationships between shape and forces in structures and inquire the methodology and skills applicable to solve the basic mechanical problem.

Performance targets:

- 1) To understand the basics of mechanics and be able to analyze reaction forces of statically determinate truss, beam and frame structures.
- 2) To understand the concept of sectional forces and to be able to draw the figures.
- 3) To understand the concept of the influence line and and to be able to analyze the sectional forces for statically determinate structures.

Prerequisite Subjects

Course Topics

1. Basic relationships between shape and forces
2. Equilibrium of forces
3. Analysis of internal forces members
4. Concepts of structural shapes

Several reports will be given after lectures.

Textbook

Structural Mechanics 1 Lecture Note (Ichiryusha)

Additional Reading

Reference books are introduced at the first lecture.

Grade Assessment

Examinations and Reports

The goal attainment level is evaluated by both results of the intermediate and the final examination as well as the reports. 60 points or more are accepted for 100 full marks.

Notes

Contacting Faculty

Any questions welcome anytime to the instructors and TAs.

Human Activities and Environment (2.0credits) (人間活動と環境)

Course Type	Basic Specialized Courses		
Class Format	Lecture		
Course Name	Civil Engineering	Architecture	
Starts 1	1 Autumn Semester	1 Autumn Semester	
Elective/Compulsory	Compulsory	Compulsory	
Lecturer	Hiroki tanikawa Professor	ArataKATAYAMA Professor	Teruyuki SAITO Associate Professor
	Satoru IIZUKA Associate Professor		

Course Purpose

Understanding the environmental influences on human life, production and infrastructure

Prerequisite Subjects

Not specified

Course Topics

1. National land conservation and sustainability 2. The natural progress of national land: rivers and valleys
3. Environmental assessment and follow up 4. Ecological system concerning rivers 5. Changes of valleys
6. Natural regeneration 7. Light, sunshine, global warming and human 8. Sound and human 9. Indoor air
and human 10. Heat and moisture 11. Engineering and Architectural Ethics

There are additional overtime studies regarding each lecture.

Textbook

to be distributed

Additional Reading

to be announced in class.

Grade Assessment

Reports to each professor

Notes

No course requirements

Contacting Faculty

Ask via email,

Prof.Tanikawa (tanikawa@nagoya-u.jp)

Prof.Katayamaa-katayama@esi.nagoya-u.ac.jp

A.Prof.Saitosaito@nuac.nagoya-u.ac.jp

A.Prof.Iizukas.iizuka@nagoya-u.jp

Mathematics I and Tutorial (4.0credits) (数学 1 及び演習)

Course Type	Basic Specialized Courses	
Class Format	Lecture and Exercise	
Course Name	Civil Engineering	Architecture
Starts 1	1 Autumn Semester	1 Autumn Semester
Elective/Compulsory	Compulsory	Compulsory
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor

Course Purpose

Learn how to solve the ordinal differential equations and vector analysis.

Prerequisite Subjects

Course Topics

Primitive method

Second-order linear differential equations

Higher-order linear differential equations

Fundamental characteristics of vector

Differentiation of vector

Curved line and curved surface

Integration theorems of vector field

Textbook

Additional Reading

Grade Assessment

Your final grade will be calculated according to the final examination (100%).

Notes

Contacting Faculty

Prof. Mizutani (ext. 4630, mizutani@civil.nagoya-u.ac.jp)

Assoc. Prof. Nakamura (ext. 4632, tnakamura@nagoya-u.jp)

Assist. Prof. Cho (ext. 4634, yhcho@civil.nagoya-u.ac.jp)

Probability and Statistics (2.0credits) (確率と統計)

Course Type	Basic Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	1 Autumn Semester	1 Autumn Semester
Elective/Compulsory	Elective	Elective
Lecturer	Yasuhiro MORI Professor	

Course Purpose

This course introduces the theories of probability and statistics for use in data analysis and decision making in civil engineering and architecture. At the end of this course, participants are expected to

1. Understand the basic theories of probability and statistics and be able to proof these theories,
2. Understand the characteristics of commonly used probability models and be able to calculate their statistics and the distribution functions,
3. Understand the method for estimating the statistics and the probability distributions on the basis of the data from investigations, experiments, and/or observations and be able to apply those methods,
4. Understand the role of the theories of probability and statistics for use in data analysis and decision making in civil engineering and architecture.

Prerequisite Subjects

N/A

Course Topics

1. Statistics and ethics
2. Permutations and combinations
3. Basic theories on probability
4. Random variables and probability distributions
5. Moment
6. Probabilistic model of random events #1: Uniform dist., Binomial dist, Geometric dist.
7. Probabilistic model of random events #2: Poisson dist., Exponential dist., Normal dist.
8. Probabilistic model of random events #3: Central limit theorem, Lognormal dist.
9. Mid-term exam.
10. Data analysis, Statistics of data
11. Correlation coefficient, Regression analysis
12. Statistical inference
13. Statistical tests: mean
14. Statistical tests: variance
15. Probabilistic model, Decision making

Textbook

N/A

Additional Reading

N/A

Grade Assessment

Mid-term exam (25%), Final exam (50%), and reports (25%)

Notes

Contacting Faculty

Office hour will be set up on appointment basis. Emailyasu@nuac.nagoya-u.ac.jp

Analytical Dynamics with Exercises (3.0credits) (解析力学及び演習)

Course Type	Basic Specialized Courses	
Class Format	Lecture and Exercise	
Course Name	Civil Engineering	Architecture
Starts 1	2 Spring Semester	2 Spring Semester
Elective/Compulsory	Elective	Elective
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor

Course Purpose

While reviewing and conscious of Newton's mechanics, students will learn the Lagrangian equation of motion and the Hamilton's principle, which are universal principles of dynamics. The purpose of this lecture is to cultivate a fundamental ability to perform a unified interpretation of various movements by analytical mechanics and deeper mechanical considerations. By learning this lecture, the goal is to be able to:1. Deepen the understanding of Newtonian mechanics.2. Understand the fundamentals necessary for analytical mechanics, such as the principle of virtual work, Lagrange's equation of motion, and the variational method, and perform necessary calculations.3. Understand the relationship between Newtonian mechanics and analytical mechanics, and cultivate the basic power for deeper consideration of mechanical phenomena, and perform necessary calculations.

Prerequisite Subjects

Mathematics 1 with Exercises, Mechanics I and II, Calculus I and II, Algebras I and II

Course Topics

1. Review the basics of Newtonian mechanics (single mass system, multi-mass systems, equation of motion of rigid bodies, etc.) and the basics of mathematics necessary for analytical mechanics.2. Lectures and exercises on the principles of virtual work.3. Lectures on Lagrange's equation of motion including the principle of d'Alembert, generalized coordinates, including the case where motion is constrained.4. Exercise small vibration problems, coupled motion and normal vibration.5. Lectures and exercises on variational methods and Euler's differential equations.6. Learn the variational principle of mechanics (Hamilton's principle) and its relevance to Newtonian mechanics.7. Lectures and exercises on Hamilton's canonical equations (Legendre transform), phase space, canonical transformation, etc. After each lecture, students will work on related exercises. Assignments for home study are also given as appropriate. In addition, in order to confirm the degree of acquisition of the basics of dynamics, a test (initial test) on the dynamics of mass / mass system / rigid body will be conducted at the first time of this class.

Textbook

Analytical dynamics for engineering students, Kawabe, T. Shokabo Co., Ltd. (in Japanese) Printed documents will be distributed during the lecture.

Additional Reading

- Analytical dynamics, Tanabe, Y. and Shinoda, M., Shokabo Co., Ltd. (in Japanese)- Structural mechanics, Tamura, T., Asakura Co., Ltd. (in Japanese)

Grade Assessment

Evaluate the level of achievement for the achievement target through reports, initial exams, midterm exams and final exams. A score of 60 or more out of 100 is a passing score.

Notes

Private language during the lecture is strictly prohibited. Make sure that your mobile phone is not muted during the lecture. It is forbidden to take pictures with a portable camera or the like without permission of writing on the board.

Contacting Faculty

Questions during and after the lecture are welcome. E-mail questions are also accepted at any time. Toshihiro NODA, Ext: 3833, E-mail: noda@nagoya-u.jp, Bldg. 9 Rm. 317 Kentaro NAKAI, Ext: 5203, E-mail: nakai@civil.nagoya-u.ac.jp, Bldg. 9 Rm. 313

Mathematics II and Tutorial (4.0credits) (数学 2 及び演習)

Course Type	Basic Specialized Courses	
Class Format	Lecture and Exercise	
Course Name	Civil Engineering	Architecture
Starts 1	2 Autumn Semester	2 Autumn Semester
Elective/Compulsory	Elective	Elective
Lecturer	kazuya takeda Professor	

Course Purpose

This course will offer Fourier analysis and partial differential equation as the continuation of Mathematics 1 with Exercises. The main purpose of the course is to connect the mathematical theories with actual physical problems in engineering. Through the course, students can master skills for applying Laplace transform for solving differential equations, applying Fourier transforms for various time-sequence analyses and formulating and solving spatio-temporal problems by applying partial differential equations.

Prerequisite Subjects

Fundamental Mathematics 1, 2, 3, 4, 5, Mathematics 1 with Exercises. Credits for these courses are preferable but not mandatory prerequisite of this course.

Course Topics

1. Differential equation 2. Partial differential equation 3. Laplace transform 4. Fourier transform and Fourier analysis

Textbook

Advanced Engineering Mathematics: Fourier analysis and Partial Differential Equations, E. Kreyszig, Baifukan.

Additional Reading

Advanced Engineering Mathematics: Ordinary Differential Equations, E. Kreyszig, Baifukan.

Grade Assessment

Comprehensive evaluation will be made based on the three exams (80%) and seven-nine quizzes (20%). Credit will be issued for the scores of 60% or higher.

Notes

Contacting Faculty

Course information and announcements are available through NUCT (<https://ct.nagoya-u.ac.jp/>) course management system. Access that page regularly. Students can send questions directly to the lecturer. Make an appointment in case when a face-to-face communication is needed.

Fundamentals of Hydrodynamics with Exercises (4.0credits) (流れの力学及び演習)

Course Type	Basic Specialized Courses		
Class Format	Lecture and Exercise		
Course Name	Civil Engineering	Architecture	
Starts 1	2 Spring Semester	4 Spring Semester	
Elective/Compulsory	Compulsory	Elective	
Lecturer	norimi mizutani Professor	Takashi TASHIRO Professor	OBANAMakiko Assistant Professor
	YonghwanCHO Assistant Professor		

Course Purpose

Learn about basics of hydrostatics and fundamental laws of fluid motions. Then analyze flow in pipe.

Prerequisite Subjects

Course Topics

Introduction Characteristics of fluid Hydrostatics Stability of floating body Basic description of flow of ideal fluid Relative hydrostatics Bernoulli's principle Energy analysis in one dimensional problem Unsteady Bernoulli's principle Energy loss Pipe flow Analysis based on momentum (1) Analysis based on momentum (2)

Textbook

Additional Reading

Grade Assessment

Report, mid-term exam and end-term exam. Score of 60 or higher is required.

Notes

Contacting Faculty

Questions after the class are welcome. Email to professors is also recommended.

Graphic Science (2.0credits) (図学)

Course Type	Basic Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	1 Spring Semester	1 Spring Semester
Elective/Compulsory	Elective	Compulsory
Lecturer	Yasuhiko NISHIZAWA Professor	

Course Purpose

This course is intended for students of civil engineering and architecture to cultivate the ability of understanding, representing and telling spatial figure information. The course is divided into two parts. The first part is the representation of three-dimensional figures on two-dimensional surfaces by means of geometric projections. The second part is to draw three dimensional figures based on geometrical analyzing of two dimensional figures and understand information concerning the figures with basic talent of design. Goals: Students will get some abilities. One is representation of three-dimensional figures on two-dimensional surfaces by means of geometric projections. The second part is to draw three dimensional figures based on geometrical analyzing of two dimensional figures and understand information concerning the figures with basic talent of design.

Prerequisite Subjects

Geometry knowledge acquired in high school.

Course Topics

1. Multi-view projection (6 times) 2. Polyhedron and section (4 times) 3. Curves and curved surfaces (2 times) 4. Intersection of plural figures (1 time) 5. Perspective projection (2 times). Then, homework will be given for the review of the class contents, and the answer will be explained next week.

Textbook

KODAK Shiro, Gendai-zugaku (Japanese), Morikita-shuppan, ISBN978-4-627-08030-0

Additional Reading

Some supplementary materials are distributed in class in order to promote understanding of the contents of the lesson.

Grade Assessment

Examination(2 times) \ Evaluation: by examination(100%), 100-90:S, 89-80:A, 79-70:B, 69-60:C, less than 60:F. If you would not take both of two examinations, we mark "absent". If you would not take one of two examinations, we mark "F".

The test asks the following abilities: 1) Ability to project a figure in a three-dimensional space onto a two-dimensional plane. 2) Ability to geometrically analyze a three-dimensional figure from a figure on a two-dimensional plane to grasp and express figure information.

Notes

No registration requirements are imposed.

Bring a triangular ruler and compass as you will be doing drawing exercises in class.

Set the exercises shown in the textbook as review tasks, and explain the answers in the next week's class.

Contacting Faculty

If you had any questions, please tell to the follow address: nszw@nuac.nagoya-u.ac.jp

Spatial Planning (2.0credits) (空間計画論)

Course Type	Basic Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	2 Autumn Semester	2 Autumn Semester
Elective/Compulsory	Compulsory	Elective
Lecturer	Hirokazu KATO Professor	

Course Purpose

You will understand spatial planning theories taking into account the development stages of nations and cities with economic mechanisms and land systems as background.

You will learn about the actual spatial planning systems in Japan and abroad. And you will compare them to explore the ideal spatial planning required of Japan and the world in the 21st century.

The goals by learning this lecture is as follows:

1. To get and explain the basic knowledge on economics, land system, stock, public investment, which is necessary for thinking about spatial planning, and the knowledge on the expansion to planning.
2. To understand and explain the outline of spatial planning in Japan and its problems.
3. To understand and explain the spatial planning, which is necessary for Japan in the future.

Prerequisite Subjects

Infrastructure Planning, Human Activities and the Environment

Course Topics

1. Overview -Why do we need spatial planning?-
2. Spatial planning and the mechanism of growth, decline and regeneration of countries and cities
3. Economics needed to understand spatial planning
4. Stock Economics
5. Socio-economic significance of public goods and public investment
6. Relationship between land tax system, land information, land market system and spatial planning
7. Impacts of spatial planning on environmental issues
8. The overall structure and process of the spatial planning system in Japan
9. Problems of urban planning and improvement measures in Japan
10. Spatial planning for sustainable city management
11. Spatial planning under aging and declining population
12. Ethics required of nation and urban planning engineers

You should review the previous lecture before each class. In the lecture, you should write down not only the whiteboard but also the important points in the talk. You submit a brief comment at the end of each lecture. Sometime, you will be required to submit report.

Textbook

Textbooks are not specified, but lecture materials will be distributed as appropriate

Additional Reading

Reference materials are not specified, but they will be distributed as appropriate

Grade Assessment

Final Examination(70%), Report(30%)

Passed applicants must have basic knowledge of economics, land system, stock, public investment, and the expansion to spatial planning.

90-100: S

80-89: A

70-79: B

60-69: C

-59: F

Notes

None

Contacting Faculty

Please mail me.

<http://orient.genv.nagoya-u.ac.jp/kato/ekato.htm>

Space Design Workshop 1 (3.0credits) (空間設計工学及び演習第 1)

Course Type	Basic Specialized Courses		
Class Format	Lecture and Exercise		
Course Name	Architecture		
Starts 1	2 Spring Semester		
Elective/Compulsory	Compulsory		
Lecturer	Yasuhiko NISHIZAWA Professor	Kazuhisa TSUNEKAWA Associate Professor	Eisuke TABATA Associate Professor
	HOTTA Yoshihiro Assistant Professor		

Course Purpose

To learn the fundamental methods of architectural drafting through hand drafting ,and to acquire the basic ideas and knowledge on planning and design through design of a small space.

At the end of this course, participants are expected to analyze the architectural and urban problems on the assignment, and learn about the technical knowledge on the planning and design as well as the concept, technique, and presentation to solve them.

Prerequisite Subjects

Graphic Science, Introduction to Structural Mechanics, Human Activities and Environment, History of City and Civilization, Development of Structure and Technology, Basic Theory of Space Design, Painting and Sculpture Workshop 1

Course Topics

In the first task, students learn basic knowledge about space design and planning, and learn basic matters related to architectural design drafting. Students also learn the ability to convey architectural plans and designs to others through words and diagrams by analyzing group work of famous modern and contemporary works and tracing blueprints.

The second task is to design a house, and to learn the basics of the architectural design process, such as site analysis, programs, concepts, and examination of planes, sections, elevations, and construction methods. It is necessary to develop ideas based on architectural ideas using models and sketches. Each time you bring a sketch or model of your design and explain it, you will receive individual guidance (esquisse) from your teacher.

Textbook

AIJ, The data for architectural design, Maruzen.

Additional Reading

Instruct the materials for your works during class as needed

Grade Assessment

Presentation of the work in the jury. Grade Assessment is given as follows. S to 100-90 points, A to 89-80 points, B to 79-70 points, C to 69-60 points, and F to 59 points-.

Notes

Be conscious of utilizing the knowledge obtained in the 'Space Design Theory', which is held in parallel, in this exercise.

Contacting Faculty

Yasuhiko NISHIZAWA: nszw@nuac.nagoya-u.ac.jp

Kazuhisa TSUNEKAWA: tsunekawa@cc.nagoya-u.ac.jp

Eisuke TABATA: tabata@cc.nagoya-u.ac.jp

Yoshinori HOTTA: hotta@nuac.nagoya-u.ac.jp

Structural Mechanics and Tutorial (2.5credits) (建築構造力学及び演習)

Course Type	Basic Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	2 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	Jun TOBITA Professor

Course Purpose

The fundamentals of structural mechanics for building engineering and its application are given with exercise. The system of architectural structures and analytical methods for internal forces, stresses, strains and deformation of statically determinate structures are discussed. At the end of the course, introduction to statically indeterminate structures will be given.

Prerequisite Subjects

Introduction to Structural Mechanics

Course Topics

1. Internal forces of statically determinate beams, frames and truss structures
2. Fundamental properties of structural materials
3. Properties of sections
4. Fundamental equation on deformation of beams
5. Analytical methods for statically determinate beams and frames
6. Introduction to analytical methods for statically indeterminate structures
7. Comprehensive exercise

Textbook

Structural Mechanics I, by M. Izumi, Baifu-kan (in Japanese)

Additional Reading

Recommend in the lecture.

Grade Assessment

Reports and examinations. 60% or higher is necessary for acquisition.

Notes

"Introduction to Structural Mechanics" is recommended to learn.

Contacting Faculty

Contact by e-mail:tobita(at)nagoya-u.jp

Basic Theory of Space Design (2.0credits) (空間設計論)

Course Type	Basic Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	2 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	Eisuke TABATA Associate Professor

Course Purpose

To understand the basic theory of space design for architecture and city in followings wide view points.
Relationship between human body, psychology, behavior, life, society, culture, and space.
Planning theory for House which is the basis of various architectural designs.
Building construction methods and materials for various structures.

Prerequisite Subjects

History of cities and civilizations, Graphic Science, Human Activities and Environment

Course Topics

1-6.Basics of architectural planning
7.Field work
8-10.Planning theory for House
11-14.Building construction method
15.Conclusion and Discussion

Textbook

Y. Nagasawa, Architectural Planning, Ichigaya
Y. Uchida, Building Construction, Ichigaya

Additional Reading

AIJ, SPATIAL STUDIES, Inoue shoin

Grade Assessment

Total performance of every lesson reports(40%) and final examination(60%).
Pass: 60 point

Notes

Contacting Faculty

Besides the class, the questions would be answered if the appointment for meeting would be taken by e-mailing.

Eisuke TABATA atabata@cc.nagoya-u.ac.jp

Space Design Workshop 2 (3.0credits) (空間設計工学及び演習第2)

Course Type	Basic Specialized Courses		
Class Format	Lecture and Exercise		
Course Name	Architecture		
Starts 1	2 Autumn Semester		
Elective/Compulsory	Compulsory		
Lecturer	Yasuhiko NISHIZAWA Professor Miya YAMADE Assistant Professor	Hisashi KOMATSU Professor Part-time Faculty	MIYAWAKIMasaru Associate Professor

Course Purpose

Through the learning of the basics on planning, design, structure and environment elements such as light and wind in a small space, public space and landscape, this workshop aims to acquire the basic skills and presentation techniques for drawing and showing site plan, floor plan, elevation, section, perspective drawing as well as making a model.

Prerequisite Subjects

Space Design Workshop 1

Course Topics

15 weeks are divided into the first half and the second half to work on two tasks. Common to both issues, grasp and analyze problems of architecture and cities related to the contents of the issues, acquire planning and design expertise and skills to solve them (cultivate basic skills), and develop ideas, plans, Aim to develop design, technical, and expressive skills (creativity and overall skills). In addition, students will learn the responsibilities of architects by cultivating the ability to consider the impact on the surrounding environment and the area of the site and the exchange of opinions with teachers and TAs. Especially in class, teachers and TAs give advice to students on the design drafts you have created, listening to the students' explanations. In addition, literature surveys, field surveys, and drawings / model productions required for the assignment production are conducted outside of class hours, and the results are reflected in the assignment production.

First part of the workshop : Designing a small space (two subjects)

Second part of the workshop : Researching a territory and Designing public spacePublic space and landscape design.

Textbook

AIJ,The data for architectural design,Maruzen

Additional Reading

Reference books are indicated in classes.

Grade Assessment

The minimum standard is to take part in every Esquisse and submit a pre-designated drawings and models within the designated time limit. The evaluation takes into account the degree of understanding of design conditions, the concept of your work, the degree of perfection in planning and design, the expression, the content of esquisses, the content of presentations at lecture meetings (in principle, all participants), and attitudes during class. The instructor gives a comprehensive score, and the average is used as the grade. A score of 60 or more out of 100 is a passing score.

Notes

There is no requirement for attending the workshop, but it is requested to have interests in architecture and landscape design in the world.

Contacting Faculty

Nishizawanszw@nuac.nagoya-u.ac.jp

Komatsuc42719a@cc.nagoya-u.ac.jp

Miyawakimiyawaki@nuac.nagoya-u.ac.jp

Course Type	Basic Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	2 Autumn Semester
Elective/Compulsory	Compulsory
Lecturer	Keiichi ARAKI Professor Part-time Faculty

Course Purpose

Following Structural Mechanics and Exercises, the advanced theory of mechanics of framed structures is presented with emphasis on its application to structural design of buildings. The course includes extensive studies of applications and exercises to understand the load-carrying mechanism of structures.

- To understand the mechanics of frames, the fundamental theory of structural design of buildings.
- To understand the fundamental concepts of elastic design, plastic design, and structural safety.
- To understand the fundamentals of load transfer in structures through exercises.

Prerequisite Subjects

Introduction to Structural Mechanics, Structural Mechanics and Exercises, Mathematics 1 with Exercises, Mechanics 1 with Exercises

Course Topics

1. Elastic analysis of statically indeterminate structures: Principle of structural analysis, force method (flexibility method), deflection method (stiffness method), principles of energy, elastic buckling 2. Introduction to plastic analysis of frames: inelastic behavior of structural members, limit analysis of trusses, elasto-plastic bending of beams, limit analysis of beams and frames

Textbook

Supplemental materials are provided in the class.

Additional Reading

Supplemental materials are provided in the class.

Grade Assessment

by midterm examination (50%) and term-end examination (50%)

Notes

"Form and force", "Structural mechanics of buildings"

Contacting Faculty

In principle, you can ask a question at any time during the lecture.

After the lecture, use of e-mail should be recommended.

Extension number: 3752, e-mail: yoshikazu.araki@nagoya-u.jp

Steel Structures (2.0credits) (鉄骨構造)

Course Type	Basic Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	2 Autumn Semester
Elective/Compulsory	Compulsory
Lecturer	Ozaki Fuminobu Associate Professor

Course Purpose

The aim of this class is to understand the steel member and structure for buildings.

Prerequisite Subjects

Introduction to Structural Mechanics, Structural Mechanics

Course Topics

Introduction to steel structural designs, mechanical properties of steel, design of members, design of connections and column-bases, structural planning.

Textbook

Steel Structures : Morikita-Shuppan

Additional Reading

Prints

Grade Assessment

term examination and quiz

Notes

Contents of classes on Introduction to Structural Mechanics and Structural Mechanics are needed.

Contacting Faculty

ozakinuac.nagoya-u.ac.jp

Transportation Planning (2.0credits) (交通論)

Course Type	Specialized Courses		
Class Format	Lecture		
Course Name	Civil Engineering	Architecture	
Starts 1	3 Spring Semester	4 Spring Semester	
Elective/Compulsory	Elective	Elective	
Lecturer	Hideki NAKAMURA Professor	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

Course Purpose

Understand the role of transportation in forming land use patterns and learn demand analysis methods and traffic engineering.

Prerequisite Subjects

History of City and Civilization, Human Activities and Environment, Probability and Statistics, Urban and National Land Planning

Course Topics

1. Introduction
2. Characteristics of road traffic flow
3. Traffic flow theory
4. Road capacity
5. Fundamental traffic signal control
6. Road capacity at signalized intersection
7. Transportation planning and evaluation
8. Traffic management and ITS
9. Transportation survey
10. Travel demand forecasting (four-step model)
11. Trip distribution model
12. Network assignment model
13. Disaggregate model of travel demand

Textbook

Yasunori Iida and Ryuichi Kitamura: Transportation Engineering, Ohmsha

Additional Reading

Introduced according to the process of the lecture.

Grade Assessment

Examination (75%) and reports (25%)

Notes

Contacting Faculty

Students can ask questions to professors at any time during classes.

Questions during off-class hours can be asked via e-mail: nakamura@genv.nagoya-u.ac.jp, yamamoto@civil.nagoya-u.ac.jp and miwa@nagoya-u.jp

Infrastructure Planning (2.0credits) (社会資本計画学)

Course Type	Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	2 Spring Semester	3 Spring Semester
Elective/Compulsory	Compulsory	Elective
Lecturer	Takayuki MORIKAWA Professor	Kiichiro HAYASHI Professor

Course Purpose

The objective of this lecture is to learn the basic academic knowledge and the ability to solve the issues related to planning engineering under civil engineering. This lecture provides basics and applied skills of analysis methods and measures to understand the roles of infrastructure by learning its economic characteristics, planning procedure, demand analysis, and evaluation methods.

The goal of this lecture is that the students will understand the basics of planning procedure, demand analysis and evaluation methods, explain measures and study the analytical method of the issues.

Prerequisite Subjects

History of Civilization, Human Activities and Environment, Probability and Statistics, Space Design, Urban and National Land Planning

Course Topics

1. Introduction of infrastructure planning
2. Linear programming 1
3. Linear programming 2
4. Linear programming 3
5. Linear programming 4
6. Linear programming 5
7. Non-linear programming 1
8. Non-linear programming 2
9. Introductory Economics 1
10. Introductory Economics 2
11. Introductory Economics 3
12. Cost-benefit analysis 1
13. Cost-benefit analysis 2
14. Environmental assessment
15. Life-cycle analysis

After the lecture, the students will study some example problems provided through the lecture as home-study.

Textbook

Documents will be provided at the lecture if needed. And some references will be provided if needed.

Additional Reading

Infrastructure Planning, Shogo Kawakami, Kajima Syuppankai

Grade Assessment

Evaluation is based on essay exams (20%) and final examination (80%).

The success criteria is to understand the basics of planning procedure, demand analysis and evaluation methods.

The C level is the minimum requirement for passing this lecture

It employs the course registration withdrawal system.

Notes

There is no condition for taking this class.

Contacting Faculty
in the class and/or by e-mail.

Engineering on Physical Environment (2.0credits) (物理環境工学)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	2 Autumn Semester
Elective/Compulsory	Compulsory
Lecturer	Satoru IIZUKA Associate Professor

Course Purpose

Lectures on the mechanisms and control methods of thermal, air, light, and sound environments in architectural spaces

Prerequisite Subjects

Human Activities and Environment

Course Topics

1. Physics of heat
2. Calculation of heat transfer
3. Physics of ventilation
4. Calculation of ventilation
5. Physics of light
6. Movement of sun
7. Physics of sound
8. Acoustic calculation

Students need to submit reports on each physical environmental issue.

Textbook

Additional Reading

Grade Assessment

Examination (Total 100 points: Each of questions with thermal, air, light, and sound environments is 25 points.)

A passing grade is a score of 60 or higher.

Notes

No course requirements

Contacting Faculty

Students are able to ask questions after the classes. Questions by email are also accepted.

Satoru Iizuka, Associate Professor, Email: s.iizuka@nagoya-u.jp

Concrete Technology (2.0credits) (コンクリート工学)

Course Type	Specialized Courses	
Class Format	Lecture	
Course Name	Architecture	
Starts 1	2 Autumn Semester	
Elective/Compulsory	Compulsory	
Lecturer	Ippei MARUYAMA Professor	You HIBINO Associate Professor

Course Purpose

In this lecture, dynamics, performance, material, manufacture, construction, maintenance, etc. about concrete (reinforced concrete and prestressed concrete are also included) that is indispensable to construction work are performed.

1) Understanding of fundamentals of relationships between properties of concrete components and mixture proportion, 2) Understanding properties of fresh concrete and the relationship between concrete mixture proportion and construction process, 3) Understanding physical properties of concrete which is necessary for reinforced concrete design, 4) Understanding of deterioration mechanism of concrete and the relationships between concrete durability and concrete components and resultant mixture proportions, 5) Understanding fundamentals of reinforced concrete, prestressed concrete, and other concrete structures.

Prerequisite Subjects

Shape and Force

Course Topics

1W-%- Guidannce, Introduction, Outlines of structural materials other than concrete(1) 2W-%- Outlines of structural materials other than concrete(1) 3W-%- What is concrete, History of concrete, Examples 4W-%- Constituents, Required performance, and characters of concrete 5W-%- Cement 6W-%- Water, Admixtures, Aggregates 7W-%- Mix proportioning 8W-%- Fresh concrete 9W-%- Mortar artworks competition. 10W-%- Structural concrete(1) 11W-%- Structural concrete(2) 12W-%- Structural concrete(3) 13W-%- Durability 14W-%- Concrete technology today(1) 15W-%- Concrete technology today(2)

There are assignments of Mortar work competition, Mixture proportion, Calculation of concrete testing results, and so on.

Textbook

Building Material, from selection to execution, Riko-tosyo, 2009

Additional Reading

Arichitectural Material (Riko tosyo), Arichitectural Structural Material (Asakura Syoten)-@-JASS 5 (AIJ)

Grade Assessment

An overall judgment will be based on exercise questions (several times, 30%) and an examination (70%). Over 60, the credits will be given.

Accomplishment degree will be evaluated by reports.

After entrance at H23PY.

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

Before entrance at H23PY.

A:100-80, B:79-70, C:69-60, F:59-0

Attendance of all the lectures are requested. If someone fails to attend the lecture more than or equal to 3 times, credits will not be given.

Notes

Knowledge of Physics, Chemistry, and Math in high school is necessary.

Contacting Faculty

We welcome your questions. At the first lecture, we provide our e-mail address.

Question by e-mail is also welcomed. If you want to meet us directly, we ask you to make a reservation by e-mail.

Architectural Design Workshop 1 (3.0credits) (建築設計及び演習第1)

Course Type	Specialized Courses		
Class Format	Lecture and Exercise		
Course Name	Architecture		
Starts 1	3 Spring Semester		
Elective/Compulsory	Compulsory		
Lecturer	Hisashi KOMATSU Professor	Kazuhisa TSUNEKAWA Associate Professor	Eisuke TABATA Associate Professor
	HOTTA Yoshihiro Assistant Professor	Miya YAMADE Assistant Professor	Part-time Faculty

Course Purpose

In this workshop, it's the final phase for participants to learn about the fundamental knowledge and technique on the architectural design.

At the end of this course, they are expected to acquire the knowledge and technique for the planning and design of architecture and landscape through the workshop about the assignment of a public building with the urban scale.

Prerequisite Subjects

Space Design Workshop 1, Space Design Workshop 2

Course Topics

1. A small apartment house is programmed and designed based on the given conditions of the site. A site plan, floor plans, elevations, sections, a perspective and a model should be submitted. 2. A facility for education is programmed and designed based on the given conditions of the site. A site plan, floor plans, elevations, sections, a perspective and a model should be submitted.

Textbook

Instruct the materials for your works during class as needed

Additional Reading

AIJ, The data for architectural design, Maruzen.

Grade Assessment

Presentation of the work in the jury(100%) Questions: in the studio of 3rd year students

Notes

Contacting Faculty

Any kinds of question are replied in each studio.

History of Architecture 1 (2.0credits) (建築史第1)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	2 Autumn Semester
Elective/Compulsory	Compulsory
Lecturer	Yasuhiko NISHIZAWA Professor

Course Purpose

An outline of the history of Japanese architecture, to understand their ideas and meanings by four view points, architectural style and details, wooden frame structural system, building system, and relation with some Asian architecture. And on this lecture, you can get two talents, one is analyzing architecture and cities, the other is evaluating them.

Goals: Students will get some abilities which are analyzing architecture and cities, and evaluating architecture and cities.

Prerequisite Subjects

Outline of Urbanization and Civilization. Development of Buildings and Technology.

Course Topics

1 Outline of wooden buildings and architectural culture. 2-5 Ancient residents, shrine, buddhism temples and city planning. 6 Old residents in Nara and Heian period. 7-8 Buddhism temples, and residents in middle age. 9 Castles. 10-14 City plan, residents and religious buildings in Edo period. 15 The early modern architecture in Japan. In addition, homework will be given for the review of the class contents, and the answer will be explained next week.

Textbook

Architectural Institute of Japan, "Nihon Kenchiku-shi Zushu", Shokokusha.
ISBN978-4-395-00888-9

Additional Reading

Ohta hirotaro, "Nihon Kenchiku-shi Josetsu", Shokokusha.
Hirai Kiyosho, "Nihon -jutaku-no Rekishi", NHK Publish.
Takahashi Yasuo, "Toshi-shi Zushu", Tokyo University Press.
Inagaki, Eizo, "Nihon no kindai kenchiku", Kajima Shuppankai.

Grade Assessment

Evaluation: by examination(100%), 60% is required for credit. Getting over 90% you can be marked S, 80% to 89% is marked A, 70% to 79% is marked B, 60% to 69% is marked C. Under 60% is marked F. On the examination you should describe outlines and characteristics of style, structure, materials, construction system on Japanese Architecture.

Notes

Interest in the history of Japan and East Asia from ancient to modern times.

Contacting Faculty

If you had any questions, please tell to the following address: nsw@nuac.nagoya-u.ac.jp

Architectural Planning 1 (2.0credits) (建築計画第1)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	Hisashi KOMATSU Professor

Course Purpose

Learning in this lecture begins with the question of what an architectural planning is. Next, students will learn about the history, social systems, building construction methods, and usage of various types of architecture. Then, from the viewpoint of "use", the students acquire the applied skills to acquire advanced specialized knowledge on the spatial composition and functions of architecture. In the lectures, students will mainly learn the architectural planning of apartment buildings, educational facilities (primarily elementary and junior high schools), libraries and museums.

The objectives of this lecture are (1) to understand that architecture is a social entity, (2) to understand the relationship between various activities and architectural space through consideration of specific cases, and (3) to acquire the "eye for understanding architectural program" and "the ability for thinking about the architectural program", which are required in the consensus making in an architectural design, in addition, (4) to foster awareness of ethics in architectural planning.

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

Engineering on Human Environment (2.0credits) (人間環境工学)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	Teruyuki SAITO Associate Professor

Course Purpose

Lectures on the physiological and psychological relations of human beings to the environment, the evaluation of the environment and its application to the environmental design.

Prerequisite Subjects

Human Activities and Environment, Engineering on Physical Environment

Course Topics

1. Sensation, perception and cognition
2. Evaluation of thermal environment
3. Evaluation of visual environment
4. Evaluation of acoustic environment
5. IAQ
6. Cognition of space
7. Inhabitants' consciousness to residential environment
8. Comfort and health

Textbook

Additional Reading

Grade Assessment

Examination(80%) and report(20%)

Notes

No course requirements

Contacting Faculty

Students can ask questions to professors at the end of classes.

Questions during off-class hours can be asked via e-mail.

saito@nuac.nagoya-u.ac.jp

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	Hideki TANAKA Professor

Course Purpose

To understand how the environment in modern architecture or city is controlled by a total system which consists of many sub-systems of consuming energy and material, and how to create healthy, comfortable and functional environment.

Prerequisite Subjects

Human Activities and Environment, Fundamentals of Hydrodynamics, Engineering on Physical Environment, Engineering on Human Environment

Course Topics

1. Urban and architectural environmental system 2. Circulation of energy and material 3. Characteristics of HVAC load 4. Calculation method of HVAC load 5. Planning of energy utilization and heat source 6. Principle of heat source equipment 7. Outline of air-conditioning system 8. Principle of air conditioning equipment 9. Design of HVAC system 10. Outline of water supply system 11. Design of water supply system 12. Outline of plumbing system 13. Outline of electric system 14. Estimation of performance of environmental system 15. Introduction of advanced HVAC system

Textbook

nothing special

Distribute prints as necessary.

Additional Reading

Grade Assessment

Examination

Notes

Contacting Faculty

Accept questions in the lecture room at the end of the lecture

Accept email questions

Contact information for the faculty in charge of the lecture:

tanaka@nagoya-u.jp

Seismic Engineering (2.0credits) (耐震工学)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Elective
Lecturer	nobuo hukuwa Professor

Course Purpose

This course introduces the foundations of earthquake engineering to students taking this course. First, through past earthquake damage, the property of the buildings and soil easily to be damaged and the mechanism of the seismic ground motion are introduced. Next, basic theory of one degree of freedom system is presented, and finally, the basic concept of the earthquake-resistant design is demonstrated. The aim of this course is to acquire the fundamental knowledge and to solve the technical problem in the earthquake-resistant design of the building.

At the end of the course, participants are expected to understand the dynamic characteristics of buildings in the earthquake through the vibration theory of one degree of freedom system and to explain the properties of buildings strong to the earthquake excitation.

Prerequisite Subjects

Mechanics1, Mathematics2, Structural Mechanics, Reinforced Concrete Structure, Steel Structure

Course Topics

1. Guidance : Architecture and Earthquake Engineering
2. Historical Earthquake
3. Kobe Earthquake
4. Tohoku Earthquake
5. Kumamoto Earthquake
6. Nankai Trough Earthquake
7. Earthquake Damage of Housing
8. Earthquake Damage of Reinforced Concrete and Steel Building
9. Earthquake Response and Seismic Design
10. Dynamic Modelling of Building
11. Free Vibration of One Degree of Freedom System and Damping
12. Stationary Response of One Degree of Freedom System and Resonance
13. Transient Response of One Degree of Freedom System and Earthquake Response Spectrum
14. Free Vibration of Multi Degrees of Freedom System
15. Observation of Disaster Management Building

After the class, you will be required to submit a report task.

Textbook

N.Fukuwa, J.Tobita and T.Hirai : Earthquake Engineering, Kodansha

Additional Reading

N.Fukuwa : Let's talk the truth about the next earthquake disaster, Jijitsuushinsha

N.Fukuwa : Let's save Japan from the inevitable coming earthquake disaster, Jijitsuushinsha

Grade Assessment

Your final grade will be calculated according to the following process: Final exam score 50%, Reports 50%. To pass, students must earn at least 60 points out of 100.

Grading is based on level of understanding of building earthquake damage and the earthquake response of building.

Notes

Seismic Engineering (2.0credits) (耐震工学)

No course requirements are required.

Contacting Faculty

Welcome questions during the class and also accepts questions by e-mail at any time.

(Nobuo Fukuwa fukuwa@nagoya-u.jp)

Reinforce Concrete Structures (2.0credits) (鉄筋コンクリート構造)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	You HIBINO Associate Professor

Course Purpose

Reinforced concrete structure (RC structure) consists of a different kind material called a steel rod and concrete. The base of design method of RC structure and the resistance mechanism focusing on the beam and column, which are a typical component of RC structure are performed in this lecture.

Prerequisite Subjects

Dynamics of architectural structure and exercise, Concrete technology

Course Topics

1. Introduction 2. Properties of Materials, Concrete and Steel 3. Principle of RC structure 4,5. Flexural property of RC beam 6. Flexural property of RC column 7. Shear property of RC beam and column 8. Property of RC wall 9. Beam-column connection, bond and anchorage 10. Property of RC slab 11. Earthquake damage and seismic design 12. Allowable Stress Design 13. Lateral load carrying capacity 14. Ductility of RC members 15. Structural design concept for RC structure (Design Example)

Textbook

Reinforced Concrete Structures, Riko-tosyo, 2009

Additional Reading

AIJ, Standard for Structural Calculation of Reinforced Concrete Structures -Based on Allowable Stress Concept, Design Guidelines for Earthquake Resistant Reinforced Concrete Buildings Based on Inelastic Displacement Concept

Grade Assessment

An overall judgment is made by the result of an exercise problem (several times, 30%) and an examination (70%), and 60% or more is considered as success.

Notes

Contacting Faculty

The question is accepted at any time. Visiting my office, or E-mail is available.
Appointment is preferable before visiting my office.

Experiments on Structures and Materials (2.0credits) (構造・材料実験法)

Course Type	Specialized Courses		
Class Format	Lecture and Experiment		
Course Name	Architecture		
Starts 1	3 Spring Semester		
Elective/Compulsory	Compulsory		
Lecturer	Ozaki Fuminobu Associate Professor Tatsuya ASAI Assistant Professor	NAGAETakuya Associate Professor	Takashi HIRAI Assistant Professor

Course Purpose

The fundamental methods of testing the structural materials and members in architecture, such as steel and concrete, are introduced. In the first half of the course, the measuring system, data analyzing methods and safety control are explained. In the second half, various experiments are carried out including production of specimens, various measuring and loading methods.

Prerequisite Subjects

Concrete Engineering, Structural Mechanics with Exercise, Applied Structural Mechanics with Exercise

Course Topics

1. Purpose of experiments 2. Background of physical phenomena 3. Principles of measurements 4. Tests for cements and additives 5. Tests for aggregate properties 6. Mix design of concrete 7. Compression strength test of concrete 8. Non-destructive tests of concrete strength 9. Test for reinforcing bar, 10. Bending test of steel beam 11. Loading test of timber, 12. Processing of reinforcing bar 13. Bending test of RC beam 14. Vibration test, 15. Presentation of experimental results

Textbook

Y. Tanigawa, et al., Experimental Method of Structural Materials, Morikita-Suppan.

Additional Reading

prints

Grade Assessment

Over 60, credits will be given.

Attendance of all the lectures are requested. If someone fails to attend the lecture, he/she should recover it by attending another lecture.

Accomplishment degree will be evaluated by reports.

Notes

Concrete Engineering, Structural Mechanics with Exercise, Applied Structural Mechanics with Exercise (preferable)

Contacting Faculty

<http://www.degas.nuac.nagoya-u.ac.jp/lecture/index.html>

We welcome your questions. Need reservation of meeting by e-mail.

Regulations in Building and Urban Area (1.0credits) (建築法規)

Course Type	Specialized Courses	
Class Format	Lecture	
Course Name	Architecture	
Starts 1	3 Spring Semester	
Elective/Compulsory	Compulsory	
Lecturer	Ozaki Fuminobu Associate Professor	Part-time Faculty

Course Purpose

This lecture is outlined about the Building Standard Law, the City and Town Planning Act including the background and the actual condition of a design and examination. It aims at deepening an understanding also about the importance of law observance from an ethical viewpoint and the fundamental knowledge about a building law required for the examination for class-1 architects. Students can understand the Building Standard Law.

Prerequisite Subjects

Disaster prevention and safety

Course Topics

1. Outline of the Building Code in Japan 2. Terms and Definition of the Statute and Regulation about Ordinary Structure 3. Regulation about Fire Prevention and Refuge 4. Regulation about Strength of Structure, and Road and Usage 5. Regulation about Area, Height, and Sun Shadow and Guidance Techniques for Building Agreement and Integrated Design 6. Procedure Regulation of Check, Inspection and Violation 7. Town Planning and Zoning Act System of Nagoya City 8. Urban Landscape of Nagoya City Report assignments as homework are required.

Textbook

Hajimete no Kenchiku-Hoki, Gakugei Shuppansha

Additional Reading

Related handout distributed by every lecture

Grade Assessment

Estimation due to reports(70%) and tests(30%).

Notes

Report assignments as homework must be submitted.

Contacting Faculty

E-mail:ozaki@nuac.nagoya-u.ac.jp

Disaster Mitigation Management (1.0credits) (防災安全)

Course Type	Specialized Courses		
Class Format	Lecture		
Course Name	Architecture		
Starts 1	3 Spring Semester		
Elective/Compulsory	Compulsory		
Lecturer	Yasuhiro MORI Professor	Ozaki Fuminobu Associate Professor	Masafumi MORI Designated Professor

Course Purpose

Students are required to learn the skills of problem solving in the field of disaster planning and disaster information.

Achievement

- 1.Students understand risk management.
- 2.Students understand fireprevention management
- 3.Students understand earthquake disasters.

Prerequisite Subjects

Probability and statistics,
Physical environmental engineering

Course Topics

calender: 1,2,3.Risk and Security 4,5:Earthquake disaster, 6,7,8:Fire and Security
Report assignments as homework are required.

Textbook

Related handouts(documents) will be distributed.

Additional Reading

Related handout distributed by ever lecture

Grade Assessment

Based on reports.

Notes

The report assignment for every lecture must be submitted.

Contacting Faculty

ozaki@nuac.nagoya-u.ac.jp, yasu@nuac.nagoya-u.ac.jp
m.mori@nagoya-u.jp

Architectural Design Workshop 2 (3.0credits) (建築設計及び演習第2)

Course Type	Specialized Courses		
Class Format	Lecture and Exercise		
Course Name	Architecture		
Starts 1	3 Autumn Semester		
Elective/Compulsory	Elective		
Lecturer	Hisashi KOMATSU Professor	MIYAWAKIMasaru Associate Professor	Part-time Faculty

Course Purpose

Workshop of the planning and design of building complexes and large developments with regard to urban contexts.

Prerequisite Subjects

Space Design Workshop 1, Space Design Workshop 2, Architectural Design Workshop 1, Architectural Planning 1,2

Course Topics

- 1.A complex of buildings such as a cultural center and a housing development is designed based on the given conditions of site and program. A site plan, floor plans, elevations, a perspective and a model should be submitted.
2. Conceptual and schematic planning of urban or regional projects is developed based on the given conditions.

Textbook

AIJ, The data for architectural design, Maruzen.

Additional Reading

Reference books are indicated in classes.

Grade Assessment

Presentation of the work in the jury. Grade Assessment is given as follows. S to 100-90 points, A to 89-80 points, B to 79-70 points, C to 69-60 points, and F to 59 points-.

Notes

There is no requirement.

Contacting Faculty

Komatsuc42719a@cc.nagoya-u.ac.jp

Miyawakimiyawaki@nuac.nagoya-u.ac.jp

History of Architecture 2 (2.0credits) (建築史第2)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Compulsory
Lecturer	Yasuhiko NISHIZAWA Associated Faculty Professor

Course Purpose

An outline of the history of Western architecture from ancient to pre-modern period, to understand their characteristics of architectural style, construction system. Then, you can get two talents on this class, one is analyzing architecture and urban planning, the other is evaluating them. In particular, you can understand three points, the first one is outline of religious architecture and public facilities, the second one is outline of building system and masonry system, the last one is the relationship between architecture and urbanization. Goals: Students will get two talents on this class, one is analyzing architecture and cities, the other is evaluating them.

Prerequisite Subjects

History of City and Civilization
History of Architecture 1

Course Topics

1. Egypt
2. Ancient Greek
3. Ancient Rome
4. From Early Christian to Byzantine
5. Romanesque
6. Gothic
7. Gothic
8. Medieval city and domestic architecture
9. Renaissance 1(outline and church architecture)
10. Renaissance 2(city and domestic architecture)
11. Baroque 1(outline and church architecture)
12. Baroque 2(city and domestic architecture)
13. 18th Century 1(architecture/city/garden in France and England)
14. 18th Century 2(Revolutionary architecture in France)
15. 19th Century

In addition, homework will be given for the review of the class contents, and the answer will be explained next week.

Textbook

Architectural Institute of Japan ed., Seiyō Kenchiku-shi Zushu, Shokoku-sha. As for the detailed informations of each building, Refer to this text book.

Additional Reading

Reference books are introduced in the printed materials in each lecture.

Grade Assessment

Evaluation by examination(50%) and paper(50%). 60% is required for the credit.

Notes

Interest in world history.

Contacting Faculty

If you had any questions, please tell to the follow address : nszw@nuac.nagoya-u.ac.jp, or hotta@nuac.nagoya-u.ac.jp.

Architectural Planning 2 (2.0credits) (建築計画第2)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Kazuhisa TSUNEKAWA Associate Professor

Course Purpose

Students should learn the background history, social systems, architectural methods, and how to use them for various issues in architectural design, and acquire expertise in the spatial composition and functions of architecture. In particular, acquire knowledge on medical and welfare facilities, offices, and theaters. In addition, understand related fields that link architecture and society.

Prerequisite Subjects

Course Topics

Textbook

AIJ, The data for architectural design, Maureen.
Will be distributed handouts in the class

Additional Reading

Will be introduced in the class

Grade Assessment

Paper(40%) and final exam (60%).
S: 90-100%, A: 80-89, B: 70-79, C: 60-69, F: 0-59

Notes

Contacting Faculty

Urban and National Land Planning (2.0credits) (都市・国土計画)

Course Type	Specialized Courses	
Class Format	Lecture	
Course Name	Architecture	
Starts 1	3 Autumn Semester	
Elective/Compulsory	Elective	
Lecturer	MIYAWAKIMasaru Associate Professor	NAKAMURAShinichiro Associate Professor

Course Purpose

The purpose of this course is to recognize the importance of urban and regional planning as a field related to sustainability and quality of life, learn the history of urban and regional planning and to understand the current planning system. The aim of this course is to be able to explain the above items comprehensively.

Prerequisite Subjects

History of City and Civilization, City and Environment, Spatial Planning, Spatial Design, Architecture, History of Civil Engineering

Course Topics

1. Current situation, issues and approaches of Nagoya region
2. Current situation, issues and approaches of various cities around the world
3. Various urban planning ideas, modern urban planning and contemporary urban planning
4. Machizukuri in Japan
5. Contemporary urban and regional planning: national, region, municipality, area and district levels
6. Characteristics, issues and prospects of Japanese urban and regional planning

Review of textbook is required after every class.

Textbook

Book to Understand Landscape and Urban Design(Asakura-syoten)

Additional Reading

Kokudokeikaku-no-Hensen (Kajimashuppankai)

Machizukuri Keyword Dictionary (Gakugei Shuppan-sha)

Sustainable Site Design 100 Cases: Acupuncture of Sustainable Urban Regeneration (Shokokusha)

Grade Assessment

In-class Final examination and reports: 100% will be evaluated. 60 points out of 100 points is a pass grade.

Notes

There is no requirement.

Contacting Faculty

Questions are welcome.

Please make an appointment beforehand.

E-mail: miyawaki@nuac.nagoya-u.ac.jp (Dr. Miyawaki), shinichiro@civil.nagoya-u.ac.jp (Dr. Nakamura)

Building Services Engineering (2.0credits) (設備工学)

Course Type	Specialized Courses	
Class Format	Lecture	
Course Name	Architecture	
Starts 1	3 Autumn Semester	
Elective/Compulsory	Elective	
Lecturer	Hideki TANAKA Professor	Teruyuki SAITO Associate Professor

Course Purpose

Through the lectures on the application of the theory outlined in Environmental System Engineering, the purpose, characteristic, constitution and expected effect of building service system, and relationship between that system and environment should be understood. More practical training is pursued in Environmental System Engineering with Exercises.

Prerequisite Subjects

Engineering on Physical Environment, Engineering on Human Environment, Environmental System Engineering, Sanitary Engineering

Course Topics

1. Transport equipment, Electric equipment, Heat source equipment, Automatic control and building automation
2. Thermal storage system, District heating and cooling, Application system of unused energy, Co-generation system, Assessment of building environment performance
3. Solar and wind energy system, Application system of rain and reclaimed water
4. Indoor air quality and ventilation

Textbook

Handouts are to be distributed.

Additional Reading

Grade Assessment

Examination

Notes

No course requirements

Contacting Faculty

Students can ask questions to professors at the end of classes.

Questions during off-class hours can be asked via e-mail.

tanaka@nagoya-u.jp

saito@nuac.nagoya-u.ac.jp

Environmental System Engineering with Exercises (2.5credits) (環境システム設計及び演習)

Course Type	Specialized Courses		
Class Format	Lecture and Exercise		
Course Name	Architecture		
Starts 1	3 Autumn Semester		
Elective/Compulsory	Elective		
Lecturer	Teruyuki SAITO Associate Professor	Satoru IIZUKA Associate Professor	UKAI Makiko Assistant Professor

Course Purpose

This course includes exercise of office building planning, and practices of building service planning and design. The students learn the basic energy conservation methods and practical planning knowledge of building service through the exercise and practices. They understand the necessity and urgency of improvement on energy conservation performance, and the responsibility for it as an engineer. Moreover, they also improve their communication abilities through the exercise and practices.

Prerequisite Subjects

Human Activities and Environment, Engineering on Physical Environment, Engineering on Human Environment, Environmental System Engineering, Sanitary Engineering

Course Topics

1. Lecture on the outline of building services planning and the exercise of office building planning
2. Exercise of energy conservation by architectural methods (calculation of PAL)
3. Calculation of heating and cooling loads
4. Planning of air-conditioning system
5. Planning of piping system

Textbook

Handouts are to be distributed.

Additional Reading

Grade Assessment

Submission drawings and calculation sheets, Exercise activities
A passing grade is a score of 60 or higher.

Notes

No course requirements

Contacting Faculty

Students can ask questions to professors during classes.
Questions during off-class hours can be asked via e-mail.
saito@nuac.nagoya-u.ac.jp
s.iizuka@nagoya-u.jp
ukai@nuac.nagoya-u.ac.jp

Structural Analysis and Tutorial (2.5credits) (建築構造解析及び演習)

Course Type	Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	3 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Keiichi ARAKI Professor NAGAETakuya Associate Professor

Course Purpose

Learning the fundamentals for the structural analysis through computer programming by use of the matrix theory and time-history seismic response calculation.

Prerequisite Subjects

Mechanics I, Shape and Forces, Structural Mechanics with practice, Applied Structural Mechanics with practice

Course Topics

1. Matrix Calculations
2. Stress Analysis of Plane Truss
3. Stress Analysis of Plane Rigid Frame
4. Time-History Seismic Response Calculation of Single-Degree-of-Freedom System
5. Calculation of Response Spectrum

Textbook

Additional Reading

Grade Assessment

Report

The goal attainment level is evaluated by the reports. 60 points or more for 100 point full marks are accepted.

Notes

Contacting Faculty

Structural Design (2.0credits) (構造設計工学)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Yasuhiro MORI Professor

Course Purpose

As the basic knowledge in the field of structural engineering for buildings, this course first introduces the ideas and technologies for achieving the safety and functionality of buildings in relation to Japanese Building Standard Law. Then as the advanced technical knowledge, this course introduces the idea of performance-based design along with the measures of performance levels, and limit state design as a tool to achieve the performance-based design. In the second half, this course introduces the methods to determine the design load on the basis of observed physical phenomena such as imposed load, snow depth, wind speed, and ground motion intensities, as well as the current Japanese seismic provisions.

Prerequisite Subjects

Course Topics

1. Structural design and risk management
2. Performance-based design and responsibility of stake holders
3. Measure of structural performance level
4. Limit state probability, Reliability index
5. Structural design methods, Load combinations
6. Dead load and live load
7. Snow load #1
8. Snow load #2
9. Wind load #1
10. Wind load #2
11. Seismic load: Lessons from past disasters, Seismic response of structures
12. Response spectrum, Ductility and ballance of stiffness, Past seismic provisions
13. Japanese current seismic provisions #1
14. Japanese current seismic provisions #2
15. Japanese current seismic provisions #3

Textbook

Additional Reading

Grade Assessment

Final exam (70%), and reports (30%)

Notes

Contacting Faculty

Office hour will be set up on appointment basis. Emailyasu@nuac.nagoya-u.ac.jp

Building Foundation Engineering (2.0credits) (建築基礎構造)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Masafumi MORI Designated Professor

Course Purpose

Outline and important points for design procedure of building foundation will be shown. Concepts and computational methods on shear strength, deformation, bearing capacity, earth pressure, design of pile and spread foundations of building structures.

Prerequisite Subjects

Introduction to Structural Mechanics, Structural Mechanics and Tutorial, Reinforce Concrete Structures

Course Topics

1. Ground conditions and examples of soil disasters 2. Fundamental properties of soil 3. Soil exploration 4. Penetration, Consolidation and ground settlement 5. Shear deformation and strength 6. Earth pressure problem 7. Bearing capacity 8. Foundation of building structures (spread foundation and pile foundation) 9. Summary and Evaluation

Some reports are assigned during the lecture.

Textbook

Not specified.

Prepare prints as necessary.

Additional Reading

The Soil -- Soil and foundation for building engineers, M. Fujii, et. al., Kenchiku Gijutsu Building Foundation (The Second Edition), M. Hatanaka and M. Kakurai, Toyoshoten

Grade Assessment

Reports(50%), Final Examination(50%).

<Enrollees after 2020>

95 to 100 points :A+ 80 to 94 points:A 70 to 79 points:B 65 to 69 points:C 60 to 64 points:C- 59 points or less:F.

<Enrollees before 2019>

95 to 100 points :S 90 to 89 points:A 70 to 79 points:B 60 to 69 points:C 59 points or less:F.

But the person who is absent from a final examination is judged "W".

Criterion of evaluation is a correct understanding of basic concepts and terms related to the design of the building foundation.

Notes

Course requirements are not required.

Contacting Faculty

E-mail:m.mori@nagoya-u.jp EX:3765

Building Material Engineering (2.0credits) (建築材料工学)

Course Type	Specialized Courses	
Class Format	Lecture	
Course Name	Architecture	
Starts 1	3 Autumn Semester	
Elective/Compulsory	Elective	
Lecturer	Ippei MARUYAMA Professor	Part-time Faculty

Course Purpose

Influences of the material properties on a architectural design are considered by studying various materials,products,production systems,mechanical properties and standards.The information of many types of non-structural materials as well as structural materials, and the process of material selection in architectural design are discussed.

Prerequisite Subjects

Concrete EngineeringReinforced concrete designMaterial/Structural Experiment for Architecture

Course Topics

1.Overview of building materials 2.Performance and properties of materials 3.Materials and production of concrete 4.Properties of concrete 5.Properties and production of steel 6.Wood and wooden materials 7.Non-structural metals 8.Ceramics 9.Plastics 10.Paints,adhesives,sealing materials 11.Insulation,fire-proof materials 12.Water-proof materials 13.Exterior materials 14.Interior materials 15.Material design and example of construction

Textbook

Learning of building materials, Richo tosyo, Tanigawa et al. (in Japanese)

Additional Reading

We use Japanese text book, see .

Grade Assessment

Over 60, credits will be given.

Score will be based on 2 times of examinations and reports.

The percentage of them will be announced at the first lecture.

Regarding scoring, following will be applied:

After entrance at H23PY.

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

Before entrance at H23PY.

A:100-80, B:79-70, C:69-60, F:59-0

Attendance of all the lectures are requested. If someone fails to attend the lecture more than or equal to 3 times, credits will not be given.

Notes

Postulate the credits of concrete engineering and reinforced concrete design.

Contacting Faculty

We welcom your questions. At the first lecture, we provide our e-mail address.

Question by e-mail is also welcomed. If you want to meet us directly, we ask you to make a reservation by e-mail.

Building Construction Engineering (2.0credits) (建築生産システム)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Autumn Semester
Elective/Compulsory	Compulsory
Lecturer	Ippei MARUYAMA Part-time Faculty Professor

Course Purpose

The process of architectural construction, its historical development, introduction of new technology, and actual state in construction control are discussed. The practical arrangements in architectural construction and new technology for saving time and labor are also presented.

Prerequisite Subjects

Material Engineering, Material Design Engineering, Structural Design Engineering 1, Structural Design Engineering 2

Course Topics

1. Overview of construction business 2. Construction plan 3. Temporary work 4. Earthwork 5. Ground work and pile construction 6. Form work 7. Reinforcement work 8. Steel frame work 9. Concreting work 10. Special construction 11. Concrete construction, 11. Concrete construction and steel frame construction, 12. Steel frame construction, 13. Building envelope construction, 14. Internal finish construction, 15 future trends

Textbook

ISBN978-4-8446-0796-0 is needed.

Additional Reading

, ISBN978-4-274-21342-7

Grade Assessment

Intermediate examination, final examination, and periodic quiz will be provided, Criterion is to understand the construction process and to be able to use appropriately the technical terms about construction process. 60% of total score is required.

Notes

Concrete engineering and Reinforced concrete design are required.

Taking lecture of building material engineering and steel structure engineering are necessary.

Contacting Faculty

Questions will be corrected through answer sheet of quiz.

Questions is always welcome.

E-mail address is shown at the first lecture.

Senior Design Workshop 1 (Structural Design) (3.0credits) (総合設計及び演習第1 (構造))

Course Type	Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	4 Spring Semester
Elective/Compulsory	Elective
Lecturer	Keiichi ARAKI Professor Part-time Faculty

Course Purpose

The purposes of this class are two folds:

- (1) To understand the fundamentals of structural design by integrating the knowledge gained from the classes related to structural engineering.
- (2) To understand the missions of structural engineers.

For these purposes, the following 2 goals are set in this class:

- (1) To understand the whole structure and concrete procedures in structural design through exercises on structural design of reinforced concrete buildings.
- (2) To study the fundamentals of construction project management. Concrete examples are given for this purpose.

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Evaluation is made based on the submitted report. Minimum requirement is 60 points out of 100.

Notes

Contacting Faculty

Senior Design Workshop 1 (Architectural Design) (3.0credits) (総合設計及び演習第1 (計画))

Course Type	Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	4 Spring Semester
Elective/Compulsory	Elective
Lecturer	Yasuhiko NISHIZAWA Associated Faculty Professor

Course Purpose

The aim of this studio and lecture is to foster not only technical knowledge and techniques needed for designers, but also communication ability, social responsibility and ability to learn independently and continuously. Each student is expected to analyze the issues of actual natural, built and social environments, set a design theme, develop a program and calculate size to realize the theme, select the site, conduct basic design and complete the drawings.

Goals: Documents and presentation and discussion can be realized.

Prerequisite Subjects

Space Design Workshop 1

Space Design Workshop 2

Architectural Design Workshop 1

Architectural Design Workshop 2

Course Topics

Each student will set a theme related to architectural and urban design on his/her own, develop a program, calculate size, conduct basic design, complete the drawings and make a presentation. The workshop consists of orientation, studio selection, esquisses, an interim jury and a final jury.

Textbook

Text books will be announced by the advisers of each studio.

Additional Reading

Text books will be announced by the advisers of each studio.

Grade Assessment

Presentation of the work in the jury. 60% is required for the credit.

Notes

Requirements will be announced by the advisers of each studio.

Contacting Faculty

About the specific questions of each individual project, ask the advisers of each studio.

Course Type	Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	4 Spring Semester
Elective/Compulsory	Elective
Lecturer	Associated Faculty

Course Purpose

This course includes practice of building service planning and design for commercial buildings and so on. Through the practice, each student is expected to learn the practical planning knowledge of building service, to understand social responsibility for the energy conservation as an engineer and to foster communication and presentation ability.

Prerequisite Subjects

Space Design Workshop 1&2, Architectural Design Workshop 1&2, Engineering on Physical Environment, Engineering on Human Environment, Environmental System Engineering, Building Services Engineering, Environmental System Engineering with Exercises

Course Topics

1) Understand the method of decreasing air-conditioning loads and calculate thermal loads using a general simulation program, 2) Decide the capacities of chiller and boiler based on calculated thermal loads and select the kinds of them, 3) Understand the characteristic of each air-conditioning method and design its system of the target space, 4) Draw the plan of air-conditioning system and make a presentation.

Textbook

Handouts are to be distributed at the time of guidance.

Additional Reading

Grade Assessment

Submission drawings and calculation sheets, Exercise activities and presentation skills
A passing grade is a score of 60 or higher.

Notes

Course that is desirable to take: Environmental System Engineering with Exercises

Contacting Faculty

Students can ask questions to professors during classes.

Questions during off-class hours can be asked via e-mail.

saito@nuac.nagoya-u.ac.jp

s.iizuka@nagoya-u.jp

ukai@nuac.nagoya-u.ac.jp

History of Architecture 3 (2.0credits) (建築史第3)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	3 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Yasuhiko NISHIZAWA Professor

Course Purpose

An outline of the history of modern architecture in the Western Architecture and Japanese Architecture, to understand their ideas and meanings by four view points, architectural style and details, steel frame and reinforced concrete structural system, building system, and relation between Western Architecture and Japanese modern architecture. And on this lecture, you can get two talents, one is analyzing architecture and urban, the other is evaluating them.

Goals: Students will get two talents which are analyzing architecture and cities, and evaluating them.

Prerequisite Subjects

Architectural History 1

Architectural History 2

Course Topics

1. Introduction to the Modern Architecture
2. Arts and Crafts Movement
3. Garden City Movement
4. Art Nouveau
5. American Skyscraper and Suburban House
6. Aesthetics of Organism
7. Aesthetics of Machine(1)
8. Aesthetics of Machine(2)
9. Colonial Style in Japan
10. Modernization and Western Style Architecture in Japan
11. Works of Early Japanese Architects
12. Search of Architectural Originality in Japan
13. Architectural Law and Technology in Japan
14. Early Modernism in Japan
15. The Second World War and Architecture in Japan

In addition, homework will be given for the review of the class contents, and the answer will be explained next week.

Textbook

Instead of the text book, printed materials are given in each lecture.

Additional Reading

M.Tafuri and F.Dal Co, Modern Architecture 1 and 2, New York

K.Frampton, Modern Architecture A Critical History, London

E.Inagaki, Nihon no Kindai Kenchiku, Tokyo

T.Fujimori, Nihon no kindai Kenchiku, Tokyo.

Grade Assessment

Evaluation: by examination(100%), 60% is required for credit. On the examination you should describe outlines and characteristics of style, structure, materials, construction system on modern architecture in Europe, America and Japan.

Notes

Interest in the history of the 19th and 20th centuries.

Contacting Faculty

Questions are replied by Prof. Nishizawa (#513, Engineering and Science building, ext.3748, nszw@nuac.nagoya-u.ac.jp) or Prof. Hotta (#515, Engineering and Science building, hotta@nuac.nagoya_u.ac.jp)

Environmental Engineering (2.0credits) (社会環境保全学)

Course Type	Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	4 Spring Semester
Elective/Compulsory	Elective
Lecturer	Hiroki tanikawa Professor Ozaki Fuminobu Associate Professor ArataKATAYAMA Professor

Course Purpose

Lecture on the relationship between human activity and carrying capacity air pollution, taking material and energy flow, water quality, disaster, and environmental technology as examples.

Prerequisite Subjects

Sanitary Engineering Environmental System Engineering Building Services Engineering Statistics and Probability

Course Topics

1. Environment and Human Activity

(1) Global Warming, Climate Change (2) Carrying Capacity (3) Economic Growth, Energy, Resource and Environment (4) Regional Environmental Management and Index (5) Sound Material Society and Material Flow

2. Environment, Disaster and Technology

(1)Industrial Activity and Environmental Problem (2)Technological Development and Environmental Burden Reduction (3)Disaster and Accident for Buildings (4)Preservation and Retrofit Technology for Building (5)LCA for Building

3. Human Activity and Water Resource

(1) Basic of Water quality (2) Environmental Standard of Water quality

Textbook

to be distributed by each lecturer

Additional Reading

Committee on Environmental Systems Research, Japan Society of Civil Engineers Environmental Systems, Asakura, 1998 Vital Signs, The trends that are shaping our future, World Watch Japan, 2009

Grade Assessment

Short essay (17%), in-class exam (50%) and final examination (33%).

Notes

There is no condition for taking this class.

Contacting Faculty

Contact to Professor Tanikawa ex3840, tanikawa@nagoya-u.jp

Senior Design Workshop 2 (3.0credits) (総合設計及び演習第2)

Course Type	Specialized Courses
Class Format	Lecture and Exercise
Course Name	Architecture
Starts 1	4 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Yasuhiko NISHIZAWA Associated Faculty Professor

Course Purpose

Each student is requested to develop further his/her basic scheme studied in the Senior Design Workshop I, to design the details, and to finish the drawings and the model.

Goals: Documents and presentation and discussion can be realized.

Prerequisite Subjects

Senior Design Workshop 1 (Structural Design)

Senior Design Workshop 1 (Architectural Design)

Senior Design Workshop 1 (Environmental and Building Service Design)

Course Topics

Esquisses and final jury

Textbook

Text books will be announced by the advisers of each studio.

Additional Reading

Text books will be announced by the advisers of each studio.

Grade Assessment

Presentation of the work in the jury. 60% is required for the credit.

Notes

Requirements will be announced by the advisers of each studio.

Contacting Faculty

About the specific questions of each individual project, ask the advisers of each studio.

Graduation Thesis A (5.0credits) (卒業研究A)

Course Type	Specialized Courses	
Class Format	Experiment and Exercise	
Course Name	Civil Engineering	Architecture
Starts 1	4 Spring Semester	4 Spring Semester
Elective/Compulsory	Compulsory	Compulsory
Lecturer	Associated Faculty	Associated Faculty

Course Purpose

* Civil and Environmental Engineering Program

Each student will do exercises on how to solve unknown problems. Specifically, he/she will select a research topic by consulting with their supervisor, clarify issues on the research topic through reviews based on literature surveys, etc., and consider methods for solving the issues. Then, he/she will practice the methods themselves, analyze the material obtained from the practice, and derive the answer to the issues. Finally, he/she will compile a series of these processes into a bachelor thesis, and give a presentation at a final defense.

* Architecture Program

Through the selecting research topic, conducting research and making a presentation of the outcomes, students are expected to acquire the ability to understand and analyze the problems related to architecture from the overall viewpoint and to improve the quality of architecture and urban environment.

Prerequisite Subjects

Lectures in his/her freshman to junior year

Course Topics

* Civil and Environmental Engineering Program

Each student will do lab-based seminars, discussions with faculty members, self-learning in the laboratory, work on experiments, analysis, surveys, etc., preparation of the bachelor thesis, presentations, etc. Prior to the seminars, discussions, and presentations, work such as self-learning in the laboratory, experiments, analysis, surveys, and paper writing should be carried out. Specific work will be carried out with meetings with his/her supervisor.

* Architecture Program

With consult with his/her adviser, each student selects a research topic for his/her senior paper, learns background of that topic, and conducts research. Under the guidance of his/her adviser, he/she shall carry out literature review, experiments, and/or analyses by himself/herself. Through this process, he/she will do exercise on the fundamental methodology for the investigation/analysis for solving a problem.

Textbook

Directed by his/her adviser

Additional Reading

Directed by his/her adviser

Grade Assessment

Reports and presentation

Notes

Contacting Faculty

Directed by his/her adviser

Graduation Thesis B (5.0credits) (卒業研究B)

Course Type	Specialized Courses	
Class Format	Experiment and Exercise	
Course Name	Civil Engineering	Architecture
Starts 1	4 Autumn Semester	4 Autumn Semester
Elective/Compulsory	Compulsory	Compulsory
Lecturer	Associated Faculty	Associated Faculty

Course Purpose

* Civil and Environmental Engineering Program

Each student will do exercises on how to solve unknown problems. Specifically, he/she will select a research topic by consulting with their supervisor, clarify issues on the research topic through reviews based on literature surveys, etc., and consider methods for solving the issues. Then, he/she will practice the methods themselves, analyze the material obtained from the practice, and derive the answer to the issues. Finally, he/she will compile a series of these processes into a bachelor thesis, and give a presentation at a final defense.

* Architecture Program

Through the selecting research topic, conducting research and making a presentation of the outcomes, students are expected to acquire the ability to understand and analyze the problems related to architecture from the overall viewpoint and to improve the quality of architecture and urban environment.

Prerequisite Subjects

Lectures in his/her freshman to junior year

Graduation Thesis A

Course Topics

* Civil and Environmental Engineering Program

Each student will do lab-based seminars, discussions with faculty members, self-learning in the laboratory, work on experiments, analysis, surveys, etc., preparation of the bachelor thesis, presentations, etc. Prior to the seminars, discussions, and presentations, work such as self-learning in the laboratory, experiments, analysis, surveys, and paper writing should be carried out. Specific work will be carried out with meetings with his/her supervisor.

* Architecture Program

With consult with his/her adviser, each student selects a research topic for his/her senior paper, learns background of that topic, and conducts research. Under the guidance of his/her adviser, he/she shall carry out literature review, experiments, and/or analyses by himself/herself. Through this process, he/she will do exercise on the fundamental methodology for the investigation/analysis for solving a problem.

Textbook

Directed by his/her adviser

Additional Reading

Directed by his/her adviser

Grade Assessment

Reports and presentation

Notes

Contacting Faculty

Directed by his/her adviser

National Planning and Construction Projects (2.0credits) (国土のデザインとプロジェクト)

Course Type	Related Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	2 Spring Semester	4 Spring Semester
Elective/Compulsory	Elective	Elective
Lecturer	Takashi TOMITA Professor Part-time Faculty	NAKAMURASHinichiro Associate Professor Part-time Faculty

Course Purpose

In Japan, the importance of capturing the relationship between the use of national land and the infrastructures has been reaffirmed through the historical severe disasters: the Isewan Typhoon, the Great Hanshin-Awaji Earthquake, and the Great East Japan Earthquake. On the other hand, looking at the world, not only disasters, but also securing and managing food, water and energy have become vital to the nation. The infrastructures have important role to support them. In this lecture, from the viewpoints of national land design, you will learn the importance of integrated design of infrastructure suitable for population trends, economic growth and land use. which are the basic elements of an infrastructure projects, to design the land and support the society, economy, and environment to be realized, the necessary requirements are set for the natural and social conditions of the country and region. The purpose of this lecture is to understand the necessary requirements for infrastructure projects from the three perspectives, technology, citizens, and industry, with considering social circumstances, spatial differences, and temporal changes.

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

History of Civil Engineering (2.0credits) (土木史)

Course Type	Related Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	3 Spring Semester	4 Spring Semester
Elective/Compulsory	Elective	Elective
Lecturer	Part-time Faculty	Part-time Faculty

Course Purpose

The goal of this course is to learn philosophy and necessity of civil engineering through its history.

Prerequisite Subjects

History of City and Civilization

Course Topics

1. Guidance, General discussion
 2. Birth of settlement, or town
 3. Appearance of polis
 4. Foundation in ancient Japan
 5. Formation of Europe
 6. Renaissance and Baroque
 7. Pre-modern Japanese Civil Engineering
 8. Industrial Revolution
 9. Grave urban problems
 10. Civilization and Construction of the modern nation
 11. System of water management
 12. Urban modernization, Industrial bases
 13. Parks and Greens
 14. City and Regional Planning
 15. Review and final report
- Short report1. Guidance, General discussion
2. Birth of settlement, or town
 3. Appearance of polis
 4. Foundation in ancient Japan
 5. Formation of Europe
 6. Renaissance and Baroque
 7. Pre-modern Japanese Civil Engineering
 8. Industrial Revolution
 9. Grave urban problems
 10. Civilization and Construction of the modern nation
 11. System of water management
 12. Urban modernization, Industrial bases
 13. Parks and Greens
 14. City and Regional Planning
 15. Review and final report

Short worksheet will be assigned every lecture. In addition, several reports will be assigned.

Textbook

Related books will be introduced in lectures.

Additional Reading

Related books will be introduced in lectures.

Grade Assessment

History of Civil Engineering (2.0credits) (土木史)

Knowledge about philosophy and history of civil engineering obtained through this course will be evaluated. The evaluation is based on worksheets to be submitted every lecture and several reports reports. 60% of evaluation is required for credit earning.

Notes

Not required.

Contacting Faculty

Questions may be accepted via the worksheet which should be submitted in every lecture, then it would be responded in an ex post facto lecture.

Information Processing and Tutorial (1.5credits) (情報処理及び演習)

Course Type	Related Specialized Courses	
Class Format	Lecture and Exercise	
Course Name	Architecture	
Starts 1	2 Autumn Semester	
Elective/Compulsory	Elective	
Lecturer	Eisuke TABATA Associate Professor	Part-time Faculty

Course Purpose

To acquire basic knowledge about the technology for architectural design using CAD (Computer Aided Design) software.

In addition, learns to use the computer as a design tool, by actually operating the computer.

Prerequisite Subjects

Introduction to Information Processing, Space Design Workshop 1, Basic Theory of Space Design, Painting and Sculpture Workshop 1

Course Topics

Learning the design method using computer by 3 steps.

- 1.Learning 2-dimensional CAD tools.
- 2.Learning an architectural presentation by using computers.
- 3.Acquire the ability to present their own creative forms to others.

Textbook

Additional Reading

Grade Assessment

Evaluate according to submission task (about 3 times).

Notes

Contacting Faculty

Painting and Sculpture Workshop 1 (1.0credits) (造形演習第 1)

Course Type	Related Specialized Courses
Class Format	Exercise
Course Name	Architecture
Starts 1	2 Spring Semester
Elective/Compulsory	Elective
Lecturer	Part-time Faculty

Course Purpose

This workshop aims at learning the basic presentation ability for creation to communicate the impression for a natural phenomenon, a social phenomenon and a design to anyone with the word and figure. In this workshop, the practice is carried out in terms of the following four viewpoints.

Quality of Line

Observation

Disabled Drawing

Communication

Drawing presentation by hand provides lots of the learning opportunity in their process. Those increase the sensibility for the eyesight and space. The training to catch a subject in terms of the different viewpoints gives the flexible idea, releases the thinking and helps the improvement of the communication abilities.

Prerequisite Subjects

Graphic Science, Introduction to Structural Mechanics, Human Activities and Environment, History of City and Civilization, Development of Structure and Technology, Basic Theory of Space Design, Space Design Workshop 1

Course Topics

Guidance

Quality of Line 1

Quality of Line 2

Quality of Line 3

Observation 1

Observation 2

Observation 3

Disabled Drawing 1

Disabled Drawing 2

Disabled Drawing 3

Communication 1

Communication 2

Communication 3

Final Assignment

Exhibition & General Comment

Textbook

There is no textbook. Handout materials will be distributed during classes.

Additional Reading

Campvs Martivs Antiqvae vrbis: Il Campo Marzio dell'antica Roma, Honnotomo-sha, 1993.6.

Grade Assessment

Your overall grade of this course will be decided on the basis on the designated works, including the final assignment. Credits will be awarded to those students who score 60 or more out of 100.

Notes

Contacting Faculty

Questions during classes are encouraged.

Painting and Sculpture Workshop 2 (1.0credits) (造形演習第 2)

Course Type	Related Specialized Courses
Class Format	Exercise
Course Name	Architecture
Starts 1	3 Spring Semester
Elective/Compulsory	Elective
Lecturer	Part-time Faculty

Course Purpose

Learn modeling, rendering, retouching, etc. using BIM and CG software by actually operating a computer. In addition, learn method of using a computer as a design tool and the modeling ability using a computer.

Prerequisite Subjects

Painting and Sculpture Workshop 1

Course Topics

Designs of various objects and other 3-dimensional representations.

Textbook

Additional Reading

Grade Assessment

Submission of the work:

Notes

Contacting Faculty

Soil Mechanics with Exercises (4.0credits) (土質力学及び演習)

Course Type	Related Specialized Courses	
Class Format	Lecture and Exercise	
Course Name	Civil Engineering	Architecture
Starts 1	2 Autumn Semester	4 Autumn Semester
Elective/Compulsory	Compulsory	Elective
Lecturer	Toshihiro NODA Professor YOSHIKAWA Takahiro Assistant Professor	Kentaro NAKAI Associate Professor SAKAI Takayuki Assistant Professor

Course Purpose

In order to understand the mechanical properties of a saturated soil composed of soil particles and water, this lecture will explain how to capture a two-phase mixed material. In particular, while clarifying the difference between the movement (infiltration) of pore water without deformation of the soil skeleton composed of soil particles and the movement (consolidation) of pore water with deformation of the soil skeleton based on the effective stress concept, the purpose of this lecture is to develop basic knowledge of soil mechanics. By learning this lecture, the goal is to be able to: 1. Explain the basic physical quantities that describe the state of the soil, the classification of the soil, and the compaction characteristics. 2. Explain the meaning of Darcy's law, potential flow, hydraulic conductivity, and the method of laboratory test for obtaining it in relation to hydraulics in the ground. In addition, understand the continuous equation in the permeation problem, and calculate the permeation flow using a graphical solution method. 3. Explain the definition and meaning of the equilibrium conditions of force balance and stress, displacement and strain, and constitutive equations, taking a one-dimensional one-phase system problem as an example. 4. Understand the concept of effective stress and derive the consolidation equation in one-dimensional elastic consolidation theory and solve by the Fourier method. The consolidation phenomenon can be grasped and the amount of consolidation settlement can be calculated.

Prerequisite Subjects

Mechanics I, Mechanics II

Course Topics

1. Learn basic properties of soil, basic physical quantities and engineering classification of soil. 2. Learn about Darcy's law and the characteristics of general potential flow with respect to water flow in the ground. In addition, students will learn the meaning of permeability and the methods of two laboratory tests to measure it. Students will also learn about the continuous equation and the problems of two-dimensional steady infiltration. 3. Understand the properties of unsaturated soil and soil compaction. 4. Understand the concept of equilibrium of force and stress of one-phase materials in one-dimensional problems, and learn the concept of deformation matching conditions and strain. 5. Derive a one-dimensional consolidation equation in the consolidation problem. In that, each governing equation such as the principle of effective stress will be explained. In addition, the solution of the one-dimensional consolidation equation by the Fourier method is shown, and the consolidation phenomenon (dissipation process of excess pore water pressure) is deepened based on the solution. After each lecture, students will work on related exercises. Assignments for home study are also given as appropriate.

Textbook

Soil mechanics (Corona): by Masaki Nakano Printed documents will also distributed during the class.

Additional Reading

References will be introduced as necessary.

Grade Assessment

Evaluate the level of achievement for the achievement target through reports, midterm exams, and final exams. A score of 60 or more out of 100 is a passing score.

Notes

If the absence is more than 1/2, the final exam will not be accepted.

Contacting Faculty

Questions during and after the lecture are welcome. E-mail questions are also accepted at any time. Toshihiro NODA, Ext: 3833, E-mail: noda@nagoya-u.jp, Bldg. 9 Rm. 317 Kentaro NAKAI, Ext: 5203, E-mail: nakai@civil.nagoya-u.ac.jp, Bldg. 9 Rm. 313 Takayuki SAKAI, Ext: 2734, E-mail: t-sakai@civil.nagoya-u.ac.jp, Bldg. 9 Rm. 327 Takahiro YOSHIKAWA, Ext: 3834, E-mail: yoshikawa@civil.nagoya-u.ac.jp, Bldg. 9 Rm. 315

Measurement Technology and Experiments (2.5credits) (計測技術及び実習)

Course Type	Related Specialized Courses		
Class Format	Lecture and Practice		
Course Name	Civil Engineering	Architecture	
Starts 1	3 Spring Semester	3 Spring Semester	
Elective/Compulsory	Elective	Elective	
Lecturer	Toshiyuki YAMAMOTO Professor	Jun TOBITA Professor	Teruyuki SAITO Associate Professor
	Satoru IIZUKA Associate Professor	Takashi HIRAI Assistant Professor	Yuji KAKIMOTO Assistant Professor
	UKAI Makiko Assistant Professor	Part-time Faculty	

Course Purpose

To learn the principles and tools of measurements required for design, manufacturing, and management of structures. Field and laboratory experiments are included.

Prerequisite Subjects

Probability and Statistics, Fundamentals of Hydrodynamics with Exercises, Engineering on Physical Environment, Human Activities and Environment

Course Topics

Surveying practice (distance surveying, leveling, measurement of angle, plane table surveying), Error estimation (law of error propagation, method of least squares), Measurement of temperature, humidity and wind velocity, Visualization of fluid, Measurement of meteorological factors, luminous environment, traffic noise and vibration.

Textbook

Introduced according to the process of the lecture.

Additional Reading

Architectural Institute of Japan: Kankyo Kogaku Jikkenyo Kyozaizai I/II

Grade Assessment

Attendance and reports

Notes

Not required

Contacting Faculty

Students can ask questions to professors during classes.

Questions during off-class hours can be asked via call: Yamamoto at 789-4636, Tobita at 789-3754 and Saito at 789-5240.

Sanitary Engineering (2.0credits) (衛生工学)

Course Type	Related Specialized Courses	
Class Format	Lecture	
Course Name	Civil Engineering	Architecture
Starts 1	3 Spring Semester	3 Spring Semester
Elective/Compulsory	Elective	Elective
Lecturer	ArataKATAYAMA Professor	NagahisaHIRAYAMA Associate Professor

Course Purpose

This lecture starts from water quality as basics, and deals the topics on the planning, system, method and assessment of water supply, on those of sewage treatment system, and on those of waste treatment. Students are expected to build up themselves with the ability to consider how should be water managed.

By learning sanitary engineering, the students should be able to do the following things.

1. To understand water quality indicators and to be able to explain the water quality required.
2. To understand the mechanism of water supply and to be able to explain treatment plans, water supply and distribution system, and treatment methods.
3. To understand the sewer system and to be able to explain treatment plans, removal system of sewage and rainwater, and treatment methods.
4. To understand waste treatment required in water treatment and to be able to explain it.
5. To understand the issues of water and sewage in natural disasters and to be able to explain them.
6. To understand the environmental assessment and to be able to explain it.

Prerequisite Subjects

chemistry, human activities and environment, hydrology, Social environmental conservation

Course Topics

1. Introduction to Sanitary Engineering: 2. Water quality: 3. Drinking water supply (planning, delivery and distribution, treatment): 4. Sewer system (planning, catchment and discharge, wastewater treatment) and sewage sludge treatment: 5. Wastewater treatment without sewer system: 6. disaster countermeasure: 7. Environmental Impact Assessment

After the class, the reference reviews are recommended to have comprehensive understanding of the issues. The students will be given assignments and requested to solve and submit them as reports.

Textbook

Upon the class, the lecture documents are provided on the intranet of the University (NUCT and etc.) where students can freely access and download them.

Additional Reading

G. Kiely "Environmental Engineering" McGraw-Hill International, Singapore, 1996, 979pp.

J.G. Henry, G. W. Heinke, "Environmental Science and Engineering" Prentice Hall, Eaglewood Cliffs, N.J. 1989, 728pp.

Grade Assessment

Report and Examination

Higher than 60 points in 100 as full mark is passed.

Grade "pass" is given to the students who are able to explain the individual basic issues on water quality, water supply system, sewer system, and the related issues such as waste treatment, natural disaster countermeasures and environmental assessment. The students who shows the comprehensive understandings on the difficult complex problems will be reflected on the grades.

Notes

It is mandatory for students to join the technical tours to the drinking water treatment plant and waste water treatment plant.

Contacting Faculty

After the class

or

Responding to individual questions: by appointment of date/time by telephone/email.

Special Lectures on Architecture (2.0credits) (建築学特別講義)

Course Type	Related Specialized Courses
Class Format	Lecture
Course Name	Architecture
Starts 1	4 Autumn Semester
Elective/Compulsory	Elective
Lecturer	Part-time Faculty

Course Purpose

A series of special lectures by visiting speakers such as architects, urban planners, structural designers, environmental designers, and historians to understand the design practices and various trends in the contemporary society.

Prerequisite Subjects

Basic Theory of Space Design, History of Architecture 1&2, Architectural Planning 1&2, Engineering on Human Environment, Environmental System Engineering, Urban and National Land Planning, Reinforce Concrete Structures, Structural Design, Building Material Engineering, Building Foundation Engineering

Course Topics

A omnibus lectures of several visiting speakers

Textbook

Textbooks will be introduced in classes.

Additional Reading

Textbooks will be introduced in classes.

Grade Assessment

Reports

Notes

There is no requirement but there is announcement in class.

Contacting Faculty

All questions are responded by Associate Professor Masaru Miyawaki (747-6778, miyawaki@nuac.nagoya-u.ac.jp).

Outline of Engineering 1 (1.0credits) (工学概論第 1)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Materials Science and Engineering	Department of Physical Science and Engineering
	Department of Energy Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering
	Civil Engineering	Architecture	
Starts 1	1 Spring Semester	1 Spring Semester	1 Spring Semester
	1 Spring Semester	1 Spring Semester	1 Spring Semester
	1 Spring Semester	1 Spring Semester	
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
	Elective	Elective	
Lecturer	Part-time Faculty		

Course Purpose

Based upon the wide and deep experiences, alumni and/or aluminae of Nagoya University, who work the hub of society, give future perspectives, foster internal and external active personality and propose guideline for their further study.

Prerequisite Subjects

Because it is a common subject not to affect a specialized subject, I do not appoint the subject to become the background.

Course Topics

Experience every time own as "do your best younger student" a senior playing an active part in the social center I perform a class on the basis of this. In all eight times of classes, I perform orientation and the lecture by seven outside lecturers. What I check about a lecturer and a title released before a class of every time beforehand. After a lecture, conduct an additional investigation depending on the need including contents and the phrase handled in a lecture. In addition, submit it as you impose the report problem about lecture contents every time.

Textbook

I distribute a slide or the print which the person in charge of each time lecturer uses as a lecture document.

Additional Reading

Instructions will be given as necessary in class

Grade Assessment

I evaluate an acquirement degree for the accomplishment by a report. I keep lecture contents of every time under control, and it is said that I pass if I can collect own thought and lets results reflect it according to the depth of the contents which were able to learn it such as the grasp of lecture contents, a guideline for the future dream, study of oneself.

Notes

There are no prerequisites

Contacting Faculty

I cope after a lecture every time. Or ask the staff of the educational affairs section.

Outline of Engineering 2 (1.0credits) (工学概論第2)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Materials Science and Engineering	Department of Physical Science and Engineering
	Department of Energy Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering
	Civil Engineering	Architecture	
Starts 1	4 Spring Semester	4 Spring Semester	4 Spring Semester
	4 Spring Semester	4 Spring Semester	4 Spring Semester
	4 Spring Semester	4 Spring Semester	
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
	Elective	Elective	
Lecturer	Part-time Faculty		

Course Purpose

In the world, the social formation of the low-carbon model becomes the problem in the face of the issue of global warming. I grasp a summary of the energy supply and demand of Japan by this lecture and am intended that I understand the trend of the energy saving and renewable energy technology and introduction promotion plan. In addition, I comment on "a basic energy plan" to become the guideline of the energy policy of our country.

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

Outline of Engineering 3 (2.0credits) (工学概論第3)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Materials Science and Engineering	Department of Physical Science and Engineering
	Department of Energy Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering
	Civil Engineering	Architecture	
Starts 1	4 Autumn Semester	4 Autumn Semester	4 Autumn Semester
	4 Autumn Semester	4 Autumn Semester	4 Autumn Semester
	4 Autumn Semester	4 Autumn Semester	
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
	Elective	Elective	
Lecturer	Kiyohisa NISHIYAMA Lecturer	Emanuel LELEITO Lecturer	Gang ZENG Lecturer

Course Purpose

This course will introduce the history, the current state and future prospects of R&D (research and development) in various sectors related to the field of engineering in Japan. The course will expose you to a wide range of issues being tackled by engineers in different fields, with the aim of motivating and preparing you to pursue your research interest. You will have an opportunity to explore basic concepts and real world applications, and to do a mini research task leading to a final presentation. Apart from the engineering field related knowledge, this lecture will also help you develop the following skills:

Cross-disciplinary Communication skills

Communication across language barriers (English/Japanese)

Online search and research skills for information gathering

Presentation skills

Prerequisite Subjects

You do not require any background knowledge to join this class. Each lecturer will provide the basic knowledge that might be needed to understand the lecture topics.

Course Topics

This class consists of “omnibus-style” lectures on the following topics.

1. Science, Technology and Innovations in Embedded Computing Systems (Gang ZENG)

- This lecture gives an overview of the embedded computing systems related technologies in Japan. In particular, the latest innovations on the low-energy and automotive applications will be introduced.

- The students are asked to participate in group discussion to share their ideas and thoughts about energy conservation and future automobiles.

2. The innovative factors of technologies in Japan (Kiyohisa NISHIYAMA)

- This lecture provides the participants with the concept of 40 innovation principles. Some Japanese technologies are broken down into the combination of the principles as examples.

- The students each are asked to analyse a technology of interest found in Japan. The students will be able to grab the concepts of any technological innovations after completing this lecture.

3. Science, Technology and Innovation for Disaster Risk Reduction (Emanuel LELEITO)

- This lecture gives students an overview of the Scientific and Technology Innovations that have contributed to Japan's leading role in Disaster Risk Reduction (DRR).

- DRR related discussions and presentation in class will help students exercise their creative thinking and problem solving skills.

Outline of Engineering 3 (2.0credits) (工学概論第3)

Each lecturer will give you assignments to read in preparation for each of the lectures.

Textbook

Lecture materials will be distributed in class during each lecture.

Additional Reading

Lecture materials will be distributed in class during each lecture.

Grade Assessment

Credits will be awarded to those students who score over 60 out of 100 based on the following evaluation criteria:

- 1) Reports (60%): Each lecturer will ask you to prepare and submit reports to evaluate your understanding of the topics taught. The reports will be worth 60% of the total score.
- 2) Presentation (40%): You will be asked to do a final presentation based on one or a combination of the topics taught. The presentation will require that you do independent online research to gather necessary information and present the topic in a 3-5 minute video. Your understanding of the topic as well as the effectiveness of your presentation will be evaluated. The presentation is worth 40% of the total score.

Notes

The students are required to actively participate in class discussions, submit reports and presentations on time.

Contacting Faculty

Questions are received during or after class time. Lecturers will provide contact information during class orientation.

Outline of Engineering 4 (3.0credits) (工学概論第4)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Materials Science and Engineering	Department of Physical Science and Engineering
	Department of Energy Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering
	Civil Engineering	Architecture	
Starts 1	1 Spring Semester	1 Spring Semester	1 Spring Semester
	1 Spring Semester	1 Spring Semester	1 Spring Semester
	1 Spring Semester	1 Spring Semester	
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
	Elective	Elective	
Lecturer	Part-time Faculty	Yukio ISHIDA Designated Professor	

Course Purpose

Elementary Class This course is intended to teach Japanese to students who have not learnt Japanese before or who have learned only a very little. Basic Japanese which is necessary for daily life in Japan will be taught.

The students study the fundamentals of grammar and basic conversational expressions. The students are requested to communicate in daily life using simple expressions.

Intermediate Class This course is intended to teach Japanese to students who already learned Japanese of Elementary level. The aims of this study are to obtain the ability necessary to explain their experiences concretely.

The students are requested to communicate in their study in Japanese. Depending on the students' Japanese ability, the advanced class will also be prepared.

Prerequisite Subjects

Elementary Class None

Intermediate Class Elementary Japanese

Course Topics

Elementary Class 1. Pronunciation of Japanese 2. Structure of Japanese sentences 3. Fundamental vocabulary and expressions 4. Conversation practice 5. Listening practice, Students must read the part which they will study in the next lecture.

Intermediate Class 1 Grammar, 2 Conversation, 3 Opinion delivery, 4 Reading comprehension, 5 Listening practice, The students must memorize the most important sentences which they will study in the next lecture.

Textbook

Elementary Class NIHONGO Breakthrough, From survival to communication in Japanese, JAL Academy, ASK Publishing Co.Ltd.

Intermediate Class weekly J : 6

Additional Reading

I introduce it to progress appropriately

Grade Assessment

Elementary Class Attendance 20 Class performance and assignments 20 Interview test and examination 30, Presentation 30

In each item (except attendance), the ability of conversation is an important check point.

Outline of Engineering 4 (3.0credits) (工学概論第4)

Intermediate Class Attendance 20 Class performance and assignments 10 Interview test 20 Written examination 20, Presentation 30.

In each item (except attendance), the ability of correct expressions is an important check point. These scores are summed and evaluated. The students with the evaluation S, A, B, or C can pass this subject.

Notes

This subject is open for NUSIP students.

Contacting Faculty

Ext. 6797 ishida@nuem.nagoya-u.ac.jp

Engineering Ethics (2.0credits) (工学倫理)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Materials Science and Engineering	Department of Physical Science and Engineering
	Department of Energy Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering
Starts 1	Civil Engineering	Architecture	
	1 Spring Semester	1 Spring Semester	1 Spring Semester
	1 Spring Semester	1 Spring Semester	1 Spring Semester
Elective/Compulsory	Elective	Elective	Elective
	Compulsory	Elective	Elective
	Elective	Elective	
Lecturer	Part-time Faculty		

Course Purpose

All students will push forward the preparations to a member of society through a college life having high flexibility as well as the lecture of the university, but this is the conscious problem that it is independent and should work on. Therefore, about life, the responsibility of the necessary member of society (a person of occupation and researcher solving another person such as engineers and social problem situation), found ability, ethic, it is the purpose of the class that gets an image at the beginning of student life. I solved many problems until now, and the engineer developed the society, but had much failure, accidents and the ethical disgraceful affair. I understand basic power to act as a member of society, an engineer ethically while having the viewpoint to the future a little while referring to a lot of such failure examples. In addition, I acquire a custom to think on the spot, and to be settled necessary for an engineer, a member of society. (the lecturer is engaged in a study and the business of the engineer ethic in professional engineer (nation qualification) with the work experience.)

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

Statistics and Analysis B (2.0credits) (データ統計解析 B)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Physical Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering
	Civil Engineering	Architecture	
Starts 1	4 Spring Semester	4 Spring Semester	4 Spring Semester
	4 Spring Semester	4 Spring Semester	
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	
Lecturer	Yoji YAMADA Professor	Shogo OKAMOTO Associate Professor	

Course Purpose

In the first half of the course, we study the basic statistics with underlying mathematics for data analysis. In the second half of the course, we study a few representative multivariate analysis techniques. Through the analysis of actual data using these techniques, we are to attain insights into the mechanisms behind the data.

Prerequisite Subjects

There is no specific requirement to enroll in this course.

Course Topics

1. Probabilistic distribution- Random variable and probabilistic distribution function- Gaussian distribution and normalization
 2. Basis of statistics- Statistics representing data- Moment
 3. Statistic estimation and test- Sampling- Error and uncertainty- Estimation- Hypothesis test
 4. Correlation and regression- Statistic independence- Explanatory and objective variables- Linear regression equation
 5. Level of measurement
 6. Multiple regression analysis- Theory including generalized inverse matrix- Variable selection- Extension to nonlinear analysis- Presentation by students

Textbook

Additional Reading

Provided in the class accordingly.

Grade Assessment

Homework (60%) and examination (40%). After this course, the students should be able to analyze their own data and reach some conclusions by themselves.

Notes

Potential attendees are not required to have finished Data Statistics Analysis A.

Contacting Faculty

It is preferred that questions are asked, solved, and shared with all the attendees during the class. Emails or direct visits with appointments are acceptable.- Prof. Yoji Yamada, yamada-yoji@mech.nagoya-u.ac.jp, Room 302 at 2nd eng. build.- Dr. Shogo Okamoto, okamoto-shogo@mech.nagoya-u.ac.jp, Room 305 at 2nd eng. build.

Technical Writing (2.0credits) (テクニカルライティング)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Materials Science and Engineering	Department of Physical Science and Engineering	Department of Energy Science and Engineering
	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering	Civil Engineering
	Architecture		
Starts 1	4 Spring Semester	4 Spring Semester	4 Spring Semester
	4 Spring Semester	4 Spring Semester	4 Spring Semester
	4 Spring Semester		
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
	Elective		
Lecturer	Kiyohisa NISHIYAMA Lecturer	Gang ZENG Lecturer	Emanuel LELEITO Lecturer

Course Purpose

This course is to learn the logical thinking and the method of expression for sending scientific and technical contents to others in English and learn how to apply these methods to technical writing and presentation in English.

What you will get in this course:

1. Understand logical thinking and structure issues.
2. Understand and write the document structure that leads to problem solving.
3. Write abstracts of scientific and technical papers in English.
4. Apply the above methods to presentations and debates in English.

Prerequisite Subjects

This course will be taught from the basics, background subjects are not specified.

Course Topics

1. Logical thinking
 - 1.1 Logical thinking
 - 1.2 Structuring logic
 - 1.3 Problem Solving
2. Writing skill
 - 2.1 Understanding document structure
 - 2.2 Organizing document structure
 - 2.3 Writing abstracts in English
3. Presentation skill
 - 3.1 Creating slides in English
 - 3.2 Presentation and Q & A in English
 - 3.3 Discussion in English

Students are required to read related contents of next lecture in advance. Reports will be assigned after each lecture, which should be completed independently by searching necessary information. Reports and final presentation will be used for evaluation.

Textbook

No textbook is specified. Lecture materials will be distributed in each class.

Additional Reading

2019

2018

, 2016

A Manual for Writers of Research Papers, Theses, and Dissertations: Chicago Style for Students and Researchers (Chicago Guides to Writing, Editing, and Publishing) - Kate L. Turabian, Revised by Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, Joseph Bizup, William T. FitzGerald and the University of Chicago Press Editorial Staff.

Grade Assessment

Evaluation will be conducted based on reports and final presentation. Credits will be awarded to those students who can write abstract and present idea using basic skills.

Notes

No course requirements.

Contacting Faculty

Questions will be accepted in the classroom after the lecture.

Industry and Economy (2.0credits) (産業と経済)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Physical Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering
	Department of Mechanical and Aerospace Engineering	Civil Engineering	Architecture
Starts 1	4 Autumn Semester	4 Autumn Semester	4 Autumn Semester
	4 Autumn Semester	4 Autumn Semester	4 Autumn Semester
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
Lecturer	Part-time Faculty		

Course Purpose

I learn knowledge about the economy while examining the background, structure, influence about various economic phenomena, pocketbook issues.

I learn the economic thought method that economists built that understanding, explanation solves a pocketbook issue at the same time.

A target: In this lecture, a student attending a lecture aims for coming to be able to do the next thing.

1. As a member of society, an industrial person, I learn necessary and useful economic knowledge and come to be able to inflect.
2. I understand structure and the mechanism of the economic phenomenon, pocketbook issue and come to be thought systematically.
3. I understand the way of economic thought (view, way of thinking) and learn it and become able to inflect.

Prerequisite Subjects

Because it is not a specialized subject, I do not appoint it in particular.

Course Topics

1. Economic circulatory structure ... give-and-take
2. Change ... prosperous conditions and recession of the economy
3. Foreign exchange rate ... strong yen and weak yen
4. Role ... annual revenue and annual expenditure of the government
5. Maintenance of role ... price stability and the trust order of Bank of Japan
6. Problem ... overflow of population of the population and too few population
7. Economic history ... Smith and Keynes
8. Free-market economy ... light and shadow
9. Japanese economy ... inflation and deflation after World War II

Reading as I appoint the range that should read a textbook beforehand at the time of a lecture of every time for the next time.

In addition, reviewing it as I show a part to review and a method about the document which I distributed, and deepening understanding.

Textbook

Nakaya"Nyumonsho wo yomumae no Keizaigaku nyumon";Doubunkan

Additional Reading

P. A.Samuels, W. D.Node house "economics" (Iwanami Shoten) Kennichi Miyazawa () "introduction to industrial linkage analysis" (Nikkei library, Nihon Keizai Shimbun, Inc.) Iwao Ozaki "industrial structure of Japan" (Keio University publication society)

R. A.I introduce it at the time of a lecture of every time including Feldman "economic latest lecture of the Dr. Feldman in Japan" (Bungeishunju Ltd.).

Grade Assessment

Understand a basic concept about the economy definitely, and keep the structure of the pocketbook issue under control, and, in wearing an economic thought method, pass; is based. I evaluate an accomplishment degree by a small report (20%) to assign at the time of a lecture of every time and the regular examination (80%) of the term end and do higher than 60 points with a pass at one hundred perfect score. In addition, the absentee of the regular examination assumes it "absence".

Notes

There are no prerequisites

Contacting Faculty

Around during the lecture and lecture time, a charge teacher copes in a lecture room

Patent and Intellectual Property (1.0credits) (特許及び知的財産)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Physical Science and Engineering	Department of Energy Science and Engineering
	Department of Electrical Engineering, Electronics, and Information Engineering	Department of Mechanical and Aerospace Engineering	Civil Engineering
	Architecture		
Starts 1	2 Autumn Semester	4 Autumn Semester	4 Autumn Semester
	4 Autumn Semester	4 Autumn Semester	4 Autumn Semester
	4 Autumn Semester		
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	Elective
	Elective		
Lecturer	Masahiro KITO Professor		

Course Purpose

Understand the necessity and significance of patents from the viewpoint of researchers and engineers at universities and companies

Acquire basic knowledge of patents and acquire what researchers and engineers who invent should do.

Attainment target

1. Understand the purpose and necessity of the patent system
2. Understand the basics of patent application procedures and how to write application documents
3. Can perform basic patent search
4. Understand how companies and universities use patents

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Civil Engineering	Architecture	
Starts 1	4 Autumn Semester	4 Autumn Semester	
Elective/Compulsory	Elective	Elective	
Lecturer	Hideki NAKAMURA Professor	Jun TOBITA Professor	Yasuhiko NISHIZAWA Professor
	Hisashi KOMATSU Professor	Part-time Faculty	

Course Purpose

The objectives of this course are (1) to establish scenarios for certain social infrastructure projects, and thereby introduce relevant civil engineering theories and construction technology, as well as conduct site-visits; (2) to survey, through technical site visits, various aspects of urban and architectural studies, including building material experiments, energy conservation, and the recent development of regional disaster mitigation activities.

Prerequisite Subjects

As the objective of this class is to understand fundamentals of civil engineering and architecture, no background class is assigned.

Course Topics

You can understand some characteristics of infrastructure, buildings and townscape with visiting sites. A report is requested to submit after each visit.

Textbook

Suggested in the class, if necessary.

Additional Reading

Suggested in the class, if necessary.

Grade Assessment

Students will be evaluated on attendance and written reports. 100-90:S, 89-80:A, 79-7:B, 69-60:C, less than 60:F. Attendance to the site visits and proper understanding on civil engineering and architecture are evaluated as a condition of obtaining a credit of this course.

Notes

No condition is required.

Contacting Faculty

Questions are welcome. Please send your questions by e-mail. E-mail: nakamura@genv.nagoya-u.ac.jp (Dr. Nakamura), tobita@sharaku.nuac.nagoya-u.ac.jp (Dr. Tobita).

Management Engineering (2.0credits) (経営工学)

Course Type	Related Specialized Courses		
Class Format	Lecture		
Course Name	Department of Chemistry and Biotechnology	Department of Physical Science and Engineering	Department of Electrical Engineering, Electronics, and Information Engineering
	Department of Mechanical and Aerospace Engineering	Architecture	
Starts 1	4 Autumn Semester	4 Autumn Semester	4 Autumn Semester
	4 Autumn Semester	4 Autumn Semester	
Elective/Compulsory	Elective	Elective	Elective
	Elective	Elective	
Lecturer	Part-time Faculty		

Course Purpose

[purpose of the class] In the corporate management, I learn it about the management of the technique that is essential for the growth, development and the innovation.

[arrival target] I become able to understand a way of thinking and the basics of management. I understand an organization change and an organization design, the management of the innovation and come to be able to give explanation.

Prerequisite Subjects

Course Topics

Management of technology (MOT) and knowledge management

Management and artefact (artifact)

Organization to realize innovation

Science, technique, sense of values

Innovation and organization learning

[instructions of the class overtime learning]

Preparing a next class range, and understanding the meanings of the technical term.

Textbook

Isao Naito, Yukihiro Wakuta edition (2016) " organization theory of the representation" CHUOKEIZAI-SHA

Additional Reading

Instructions will be given as necessary in class

Grade Assessment

evaluation method] I give a small test to look back on the lecture content of the day before the end of the lecture of every time and have you finally submit a report. I evaluate it at 50% of normal points, report point 50%. In addition, I do not accept the submission of the report when there is absence more than 1/3.

[point of reference] Pass in understanding the basic concept and term in conjunction with the management engineering definitely; is based.

Notes

There are no prerequisites

Contacting Faculty

I accept questions during the class.