Anan College	専門共通科目（本科）	Year	2024

Department Goals

Course Category		Course Title	Course Code	Credit Type	Credits	Class Hours per Week 1st Year 1st 1Q	1st Year 1st 2Q	1st Year 2nd 3Q	1st Year 2nd 4Q	2nd Year 1st 1Q	2nd Year 1st 2Q	2nd Year 2nd 3Q	2nd Year 2nd 4Q	3rd Year 1st 1Q	3rd Year 1st 2Q	3rd Year 2nd 3Q	3rd Year 2nd 4Q	4th Year 1st 1Q	4th Year 1st 2Q	4th Year 2nd 3Q	4th Year 2nd 4Q	5th Year 1st 1Q	5th Year 1st 2Q	5th Year 2nd 3Q	5th Year 2nd 4Q	Instructor	Division in Learning
Specialized	Compulsory	Career Design 1	0001	School Credit	0	0	0																		Yoshida Susumu	
Specialized	Elective	Career Design 2	0002	School Credit	0	0	0																		Yoshida Susumu	
Specialized	Compulsory	Basic Lecture and Practice for Engineers	1511000	School Credit	4	4	4																		Okumoto Yoshihiro,Nishimoto Koji,Nakaoka Nobushi,Hasegawa Tatsuo,Fujihara Takeshi,Kozai Takanori,Fukuda Koji,Fukumi Junji,Okamoto Hiroyuki,Yasuno Emiko,Ota Kengo,Yoshimura Hiroshi,Ota Naotomo,Zheng Tao,Sugiyama Yuuki,Kadono Takuma,Konishi Tomoya,Ueda Kohei,Park Youngsoo,Kagemasa Shuka,goto yumi	
Specialized	Compulsory	Fundamentals of Design	1511100	School Credit	2	2	2																		Moriyama Takuro,Nakaoka Nobushi,Nishino Seiichi	

Specialized	Compulsory	Computer Literacy 1	1511C01	School Credit	2	2	2																		Okuwa Katsunori,goto yumi	
Specialized	Compulsory	Career Design 1	0006	School Credit	0					0	0														Yoshida Susumu	
Specialized	Elective	Career Design 2	0007	School Credit	0					0	0														Yoshida Susumu	
Specialized	Elective	Career Design 2	0010	School Credit	0									0	0										Yoshida Susumu	
Specialized	Compulsory	Career Design 1	1513R01	School Credit	1									1	1										Yoshida Susumu	
Specialized	Compulsory	Interdisciplinary Project	1214T11	School Credit	1													1	1						Nishimoto Koji,Okita Yuji,Okumoto Yoshihiro,Kawabata Nariyuki,Matsuura Fuminori,Yasuda Takeshi,Itami Shin	
Specialized	Compulsory	Interdisciplinary Project	1314T11	School Credit	1													1	1						Komatsu Minoru	
Specialized	Compulsory	Interdisciplinary Project	1414T11	School Credit	1													1	1						Ueda Kohei	
Specialized	Elective	Minor	1554300	Academic Credit	2													2							Ota Naotomo	
Specialized	Elective	Career Design 2	1594R02	School Credit	3													3	3						Yoshida Susumu	
Specialized	Compulsory	Interdisciplinary Project	1714T11	School Credit	1													1	1						Yoshida Susumu,Tanaka Tatsuji	
Specialized	Compulsory	Interdisciplinary Project	1814T11	School Credit	1													2							Tada Yutaka	
Specialized	Elective	Manufacturing Process	1555100	Academic Credit	2																	2			Nishimoto Koji	
Specialized	Elective	Heat Transfer Engineering	1555101	Academic Credit	2																			4	Kusano Koji,Nishimoto Koji	

Specialized	Elective	Instrumentaion Engineering	1555102	Academic Credit	2															2	Itami Shin	
Specialized	Elective	Science of Material Selection	1555103	Academic Credit	2															2	Okumoto Yoshihiro	
Specialized	Elective	Electronic Circuits	1555200	Academic Credit	2													2			Fujihara Takeshi	
Specialized	Elective	LED Technology	1555203	Academic Credit	2															2	Hasegawa Tatsuo	
Specialized	Elective	Electrical and Electronic Drawing	1555204	Academic Credit	2															2	Kamano Masaru	
Specialized	Elective	Computer Programming	1555300	Academic Credit	2													2			Fukuda Koji	
Specialized	Elective	Numerical Computation	1555301	Academic Credit	2															2	Sugino Ryuzaburo	
Specialized	Elective	Information Communication Network	1555302	Academic Credit	2															2	Tanaka Tatsuji,Hirayama Motoi	
Specialized	Elective	Information Theory	1555304	Academic Credit	2															2	Hirayama Motoi	
Specialized	Elective	Constructional Materials	1555402	Academic Credit	2															2	Kadono Takuma	
Specialized	Elective	Structural Engineering	1555404	Academic Credit	2															2	Moriyama Takuro	
Specialized	Elective	Introduction of Architectural Planning	1555405	Academic Credit	2													2			Tada Yutaka	
Specialized	Elective	Inorganic Materials	1555502	Academic Credit	2															2	Konishi Tomoya	
Specialized	Elective	Physical Chemistry 4	1555504	Academic Credit	2															2	Nakamura Atsunobu	
Specialized	Elective	Biochemistry	1555505	Academic Credit	2													2			Otani Takashi	

Anan College	Year	2024	Course Title	Career Design 1

Course Information

Course Code	0001	Course Category	Specialized / Compulsory
Class Format		Credits	School Credit: 0
Department	専門共通科目（本科）	Student Grade	1st
Term	Year-round	Classes per Week	0
Textbook and/or Teaching Materials	Video content distributed by manaba		
Instructor	Yoshida Susumu		

Course Objectives

1. By the time you complete your first year, you can visualize yourself in the future and decide what you should study at a technical college.
2. By the time you complete your second year, you will be able to understand what kind of work it is to be an engineer.
3. At the stage of completing the third year, students can decide whether to get a job or go to further education, and can list concrete career options.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	By the end of the first year, students have decided what they should study at a technical college.	At the end of the first year, there are candidates for what to study at a technical college.	At the end of the first year, students have not yet decided what they should study at a technical college.
Achievement 2	By the end of the second year, students are able to understand the content and significance of an engineer's work.	By the end of the second year, students are able to understand the content of an engineer's work.	At the end of his second year, he still doesn't understand what an engineer's job entails.
Achievement 3	At the end of the third year, students are given concrete career options.	At the end of the third year, students decide whether to get a job or go on to higher education.	At the end of his third year, he does not have a concrete career path in mind.

Assigned Department Objectives

Teaching Method

Outline	watch the lecture of all 12 episodes between a first grader and a third grader and record own opinion, impression for each lecture (essential)
Style	carry it out in video seeing and hearing/on-demand basically. Please learn at own pace.
Notice	Not to make any what it all processes in a mass in the last of the third grader as there is arrival target of at the time of every grade completion.

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	To make KOSEN life significant	
		2nd	Significance of attending the society, and working	
		3rd	company and society	
		4th	Manner to acquire while learning in KOSEN	
		5th	Review of 1st grade 1st-4th	
		6th	Generalization: Carrier design of the first grader	
		7th	Work of an organization and the engineer of the company	
		8th	With the human resources who are favorable for a company	
	2nd Quarter	9th	With the communication power to be required	
		10th	Review of 2nd grade 1st-4th	
		11th	Experiences of the graduate	
		12th	Generalization: Carrier design of the second grader	
		13th	industry study and company study	
		14th	know oneself and have another person know oneself	
		15th	Review of 3rd grade 1st-4th	
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		

		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Proficiency	0	0	0	0	20	0	20
Specialized Proficiency	0	0	0	0	60	0	60
Cross Area Proficiency	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Career Design 2

Course Information

Course Code	0002	Course Category	Specialized / Elective
Class Format		Credits	School Credit: 0
Department	専門共通科目（本科）	Student Grade	1st
Term	Year-round	Classes per Week	0
Textbook and/or Teaching Materials			
Instructor	Yoshida Susumu		

Course Objectives

Achieve special results that cannot be obtained from the regular curriculum by carrying out extracurricular and off-campus learning activities in accordance with their own plans.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities to expand their possibilities. Organize study groups of their own design and obtain qualifications.	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities that expand your possibilities.	There is no policy in place for students to participate in seminars, etc. organized by the Career Support Office and to make career decisions.

Assigned Department Objectives

Teaching Method

Outline	These are elective courses designed to evaluate and give credit for extracurricular and off-campus activities to develop a foundation of skills necessary for a productive life while in school and after graduation (grades 1 through 4).
Style	Students can accumulate Career Points (CP) by engaging in extracurricular and off-campus activities approved by the Career Support Office for the prescribed amount of time (60 to 90 minutes) and submitting the prescribed reports and assignments. 15 CP are converted to 1 credit and students can apply for a maximum of 3 credits to be awarded at the end of the school year. Activities that are deemed eligible to be given CP and the conditions for certification (reports, assignments, etc.) will be announced on manaba. Activities are mainly categorized into the following 1) to 4). (1) Activities for career development after graduation (2) Work experience at a familiar workplace (on-campus) Volunteer activities on and off campus (4) Activities to expand one's potential
Notice	Other than seminars and other activities organized by the Career Support Office, some activities are organized by outside groups or in response to requests from the school's faculty and staff, but most of them are considered to be activities planned and managed by students on their own initiative. Please check with manaba to confirm whether your activities are eligible for CP. If you have any questions, please contact the Career Support Office Manager on your own.

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Please receive the "Career Design 2 Recording Form (Part 1)" at the Career Support Office between the first and fourth year students to start the course.	
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		

		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Proficiency	0	0	0	0	20	0	20
Specialized Proficiency	0	0	0	0	60	0	60
Cross Area Proficiency	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Basic Lecture and Practice for Engineers

Course Information

Course Code	1511000	Course Category	Specialized / Compulsory
Class Format	Seminar	Credits	School Credit: 4
Department	専門共通科目（本科）	Student Grade	1st
Term	Year-round	Classes per Week	前期:4 後期:4
Textbook and/or Teaching Materials	Studysapuri : Recruit Co., Ltd.		
Instructor	Okumoto Yoshihiro,Nishimoto Koji,Nakaoka Nobushi,Hasegawa Tatsuo,Fujihara Takeshi,Kozai Takanori,Fukuda Koji,Fukumi Junji,Okamoto Hiroyuki,Yasuno Emiko,Ota Kengo,Yoshimura Hiroshi,Ota Naotomo,Zheng Tao,Sugiyama Yuuki,Kadono Takuma,Konishi Tomoya,Ueda Kohei,Park Youngsoo,Kagemasa Shuka,goto yumi		

Course Objectives

[Course Tour] To get an overview of what kind of manufacturing is done in each course.
[TL Basics] Understand the outline of cross-disciplinary capabilities.
[Educational Collaboration] Enhance basic skills in general education necessary for manufacturing.

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Able to explain the general education and technology used in the manufacturing of each course.	Able to give an overview of the manufacturing experienced in each course.	Able to explain the basic knowledge required for manufacturing in each course.
Achievement 2	Explain the need for cross-disciplinary capabilities in manufacturing.	Provide an overview of cross-disciplinary competencies.	List at least 3 elements of cross-disciplinary competence.
Achievement 3	Able to answer at least 80% of basic general education questions related to manufacturing correctly.	Able to answer 65~79% of basic general education questions related to manufacturing correctly.	Able to answer 60~64% of basic general education questions related to manufacturing correctly.

Assigned Department Objectives

Teaching Method

Outline	In order to acquire a foundation as engineers involved in manufacturing, students study the contents of five courses (mechanical, electrical, information, construction, and chemical) through classroom lectures and practical training in rotation over five periods in the first semester. Furthermore, by acquiring knowledge in a wide range of engineering fields, students will lay the foundation for becoming engineers in the multidisciplinary fields required by today's society, and by gaining an enjoyment of manufacturing, they will be motivated to study specialized subjects in the second year and beyond. In addition, students will deepen their understanding of the outline of cross-disciplinary capabilities through teamwork exercises. In addition, through educational collaboration with general education, the course aims to improve basic skills in physics and mathematics necessary for manufacturing. This course also constitutes the Mathematical, Data Science, and AI Education Program (Literacy), and mastery of this course is required for completion of the program.
Style	This course is divided into the following parts: [Course Tour], [Fundamentals of TL], and [Educational Collaboration]. Each part will be taught through various forms of implementation, including practical training, lecture attendance, observation, teamwork exercises, and online materials.
Notice	Each course has a different meeting place and preparation (clothing). Each course has its own safety precautions. Please be sure to observe them. The final examination of the first semester and the achievement test of the studysapuri will be held.

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	[Course Tour] General Guidance	Understand the content, learning methods, and precautions. Understand how to conduct practical training for each course.
		2nd	[Educational Cooperation] studysapuri Achievement Test	Confirm basic academic skills.
		3rd	[Course Tour] Practical training 1	Understand the overview of manufacturing in each course.
		4th	[Course Tour] Practical training 1	Understand the overview of manufacturing in each course.
		5th	[Course Tour] Practical training 2	Understand the overview of manufacturing in each course.
		6th	[Course Tour] Practical training 2	Understand the overview of manufacturing in each course.
		7th	[Course Tour] Practical training 3	Understand the overview of manufacturing in each course.
		8th	[Course Tour] Practical training 3	Understand the overview of manufacturing in each course.
	2nd Quarter	9th	No midterm exam : Studysapuri	Acquire basic academic skills.
		10th	[TL Basics] TL Teamwork Exercise 1	Understand cross-disciplinary competencies.
		11th	[TL Basics] TL Teamwork Exercise 2	Understand cross-disciplinary competencies.

		12th	[Course Tour] Practical training 4	Understand the overview of manufacturing in each course.
		13th	[Course Tour] Practical training 4	Understand the overview of manufacturing in each course.
		14th	[Course Tour] Practical training 5	Understand the overview of manufacturing in each course.
		15th	[Course Tour] Practical training 5	Understand the overview of manufacturing in each course.
		16th	Return of final examinations	
2nd Semester	3rd Quarter	1st	[Educational Cooperation] Entrepreneurship education	Understand the overview of entrepreneurship education
		2nd	[Course Tour] Course Introduction 1	Understand the overview of manufacturing in each course.
		3rd	[Course Tour] Course Introduction 1	Understand the overview of manufacturing in each course.
		4th	[Course Tour] Course Introduction 2	Understand the overview of manufacturing in each course.
		5th	[Course Tour] Course Introduction 2	Understand the overview of manufacturing in each course.
		6th	[Course Tour] Course Introduction 3	Understand the overview of manufacturing in each course.
		7th	[Course Tour] Course Introduction 3	Understand the overview of manufacturing in each course.
		8th	No midterm exam : Studysapuri	
	4th Quarter	9th	[Course Tour] Course Introduction 4	Understand the overview of manufacturing in each course.
		10th	[Course Tour] Course Introduction 4	Understand the overview of manufacturing in each course.
		11th	[Course Tour] Course Introduction 5	Understand the overview of manufacturing in each course.
		12th	[Course Tour] Course Introduction 5	Understand the overview of manufacturing in each course.
		13th	[Educational Cooperation] studysapuri Achievement Test	Confirm basic academic skills.
		14th	[Educational Cooperation] Patent Lecture	Understand the importance of patents from patent cases.
		15th	[Educational Cooperation] Stakeholder Lecture	Understand the business and job descriptions at stakeholder companies (companies where graduates work).
		16th	No final examinations	

Evaluation Method and Weight (%)

	Examination	Course Tour	TL Basics	Educational Cooperation	Portfolio	Other	Total
Subtotal	30	50	10	10	0	0	100
Basic Proficiency	10	20	0	10	0	0	40
Specialized Proficiency	20	20	0	0	0	0	40
Cross Area Proficiency	0	10	10	0	0	0	20

Anan College	Year	2024	Course Title	Fundamentals of Design

Course Information

Course Code	1511100	Course Category	Specialized / Compulsory
Class Format	Seminar	Credits	School Credit: 2
Department	専門共通科目（本科）	Student Grade	1st
Term	Year-round	Classes per Week	前期:2 後期:2
Textbook and/or Teaching Materials	Drafting, Akira Harada et al, Jikkyo Shuppan Co., Ltd. Fundamental Drafting, Sei Ohnishi, Rikogaku Shuppan Co., Ltd		
Instructor	Moriyama Takuro,Nakaoka Nobushi,Nishino Seiichi		

Course Objectives

1. Understand the purpose of drafting.
2. A three-dimensional drawing of a simple shape can be drawn by hand by projecting a three-dimensional object onto paper.
3. Solid models can be created using 3D CAD (SolidWorks).
4. Three to five assemblies can be created using 3D CAD (SolidWorks).

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Understand the purpose of drafting and the role of drawings, and be able to create drawings that are most suitable for manufacturing	Understand the purpose of drafting and the role of drawings, and be able to enter the shapes and dimensions necessary for manufacturing in drawings	Receive individual instruction and fill in the shapes and dimensions necessary for manufacturing as drawings.
Achievement 2	A three-dimensional object with a complicated shape can be projected onto paper and drawn by hand as a three-dimensional drawing.	A three-dimensional object with a simple shape can be projected onto paper and drawn by hand as a three-dimensional drawing.	Able to project a three-dimensional object with a simple shape on paper and draw a three-dimensional drawing by hand after receiving individual instruction.
Achievement 3	Using 3D CAD (SolidWorks), you can create a complex solid (three-dimensional) model that you devised yourself.	Able to create specified standard solid models using 3D CAD (SolidWorks)	Able to create a specified solid (three-dimensional) model using 3D CAD (SolidWorks) with individual instruction.
Achievement 4	Three to five parts assemblies can be created using 3D CAD (SolidWorks), and the center of gravity and length can be accurately evaluated.	Three to five parts assemblies can be created using 3D CAD (SolidWorks).	Receive individual instruction and use 3D CAD (SolidWorks) to create 3 to 5 parts assemblies.

Assigned Department Objectives

Teaching Method

Outline	In the first stage of manufacturing, the ideas that exist in the head are designed so that they can be made into concrete forms, and they are created in a form such as drawings that contain the information necessary for manufacturing. In this course, instructors who used to be in charge of mechanical design at a company make use of his experience, and in particular teach three-dimensional shapes and assemble two or more parts, not just one, in a practice format.
Style	In this class, we will first learn how to draw a three-dimensional solid shape as a two-dimensional figure like paper, and then learn how to create a three-dimensional figure in a computer as it is. In order to make this, the most effective method of dimensioning is learned through lectures in the first semester and three-dimensional CAD practice in the second semester.
Notice	This course covers a wide range of topics, from the basics of drafting, which is a design tool necessary for engineers in many fields, to the latest 3D CAD. As a result, the progress of the lessons is fast and the amount of assignments is large. If you are absent, do not understand the class, or are behind on the progress of your assignment, take measures such as asking questions before the next class.

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Drafting basics/lectures	Understand the purpose of drafting and the role of drawings.
		2nd	How to use drafting tools and line practice	Understand how to use drafting tools and can draw different types of straight lines.
		3rd	How to use drafting tools and line practice	Understand how to use a drafting tool and can draw various types of circles with a compass.
		4th	Drawing method 1: Drawing using a ruler and compass	Be able to do basic construction using a ruler and compass.
		5th	Drawing method 2: Drafting using Drafta	Able to do basic drawing using Drafter.
		6th	Projection method, third trigonometry	Understand the concept of projection and be able to create a simple trihedral drawing using third angle.
		7th	Hand-drawn drafting using drafthta 1	Drafter can be used to create trihedral problems with simple shapes.
		8th	Review	Review how to use drafting tools and simple construction methods.

	2nd Quarter	9th	Hand-drawn drafting using drafthta 2	Drafters can be used to create trihedral problems with somewhat complicated shapes.
		10th	Hand-drawn drafting using drafthta 3	Drafters can be used to create trihedral problems with complex shapes.
		11th	Creation of cabinet drawings/cabinet drawings	Understand the concept of cabinet diagrams and be able to create simple cabinet diagrams.
		12th	Isometric Drawing/Creating isometric drawings on oblique paper	Understand the concept of isometric drawings and be able to create simple isometric drawings on diagonal paper.
		13th	Creation of cross-sectional view, full cross-sectional view and half cross-sectional view	Understand full and half section views and be able to draw simple diagrams of these.
		14th	Hand-drawn drafting using drafthta 4	Drafters can be used to create full section and half section issues.
		15th	Summarization and assignment preparation day	You can complete the task while reviewing what you have learned so far and summarize the handwritten drawings.
		16th	Return of answers	You will be able to find your own mistakes and understand correctly through explanations of model answers.
2nd Semester	3rd Quarter	1st	Basics of creating 3D models/Drafting using SolidWorks (Basic operations for extruded feature/cut features)	A block-shaped 3D model can be created using an extruded feature. A block-shaped 3D model can be created using cut features.
		2nd	Basics of creating 3D models/Drafting using SolidWorks (Basic operations for tangent arcs, entity conversion, trim, rotation, and textures)	Create 3D models using tangent arcs, entity transformations and trims. Threads can be created using revolve features and textures.
		3rd	Basics of creating 3D models/Drafting using SolidWorks (Basic loft operations)	Create 3D models using contour selections and lofts with multiple regions in the same sketch.
		4th	Basics of creating 3D models/Drafting using SolidWorks (Hole wizard, mirror copies and other basic operations)	A 3D model can be created using the hole wizard. Create 3D models using symmetrical sketches and feature mirror copies.
		5th	Basics of creating 3D models/Drafting using SolidWorks (Application tasks that require each feature operation)	You can create 3D models of various block shapes using each feature learned in weeks 1 to 4.
		6th	Practical exam	Practical test of model creation based on the basics of 3D model creation learned in weeks 1 to 5
		7th	Dimensioning method	You can enter dimensions using the basics of dimensioning and supplementary symbols.
		8th	midterm exam	Review the 3D model creation operation method and dimensioning method.
	4th Quarter	9th	3D Modeling Contest / Drawing using SolidWorks (free theme modeling)	You can model with a free theme using the 3D modeling techniques you have learned so far and the modeling techniques you have researched yourself.
		10th	3D Modeling Contest / Drawing using SolidWorks (free theme modeling)	You can model with a free theme using the 3D modeling techniques you have learned so far and the modeling techniques you have researched yourself.
		11th	3D Modeling Contest / Drawing using SolidWorks (free theme modeling)	You can model with a free theme using the 3D modeling techniques you have learned so far and the modeling techniques you have researched yourself.
		12th	Assembly of 3D model parts and drawing using SolidWorks	Assemblies can be accurately created with 3-5 model parts and the inter-part lengths can be moved accurately.
		13th	Assembly of 3D model parts and drawing using SolidWorks	It can model 3-5 model parts, accurately create assemblies, and accurately determine barycentric coordinates.
		14th	Assembly of 3D model parts and drawing using SolidWorks	It can model 3-5 model parts, accurately create assemblies, and accurately determine barycentric coordinates.
		15th	Assembly of 3D model parts and drawing using SolidWorks (Modeling questions of the qualification exam CSWA sample)	In the modeling questions of the qualification exam CSWA sample,it can model 3-5 model parts, accurately create assemblies, and accurately determine barycentric coordinates.
		16th	Return of answers	You can find your own mistakes and understand them correctly by explaining the model answers.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	50	0	0	0	50	0	100
Basic Proficiency	25	0	0	0	25	0	50

Specialized Proficiency	25	0	0	0	25	0	50
Cross Area Proficiency	0	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Computer Literacy 1

Course Information

Course Code	1511C01	Course Category	Specialized / Compulsory
Class Format	Seminar	Credits	School Credit: 2
Department	専門共通科目（本科）	Student Grade	1st
Term	Year-round	Classes per Week	前期:2 後期:2
Textbook and/or Teaching Materials	30時間でマスターOffice2019 Ｗｉｎｄｏｗｓ10対応　実教出版／K-SEC「情報モラル教材」「低学年向け共通教材」, 実教出版「高校情報Ｉ Python」		
Instructor	Okuwa Katsunori,goto yumi		

Course Objectives

１．パソコンを使うときに守るべきルール・マナーについて説明できる。
２．ワープロ、表計算、プレゼンテーションソフトを使って文章作成ができる。
３．パソコンの構成やネットワークの仕組みについて説明できる。
４．パソコンにおけるソフトウエアの役割について説明できる。

Rubric

	理想的な到達レベルの目安	標準的な到達レベルの目安	最低限の到達レベル
到達目標1：パソコンを使うときに守るべきルール・マナーについて説明できる。	パソコンを利用する上で発生する問題について正しい対処法を実践できる。	パソコンを利用するときに必要なルール、マナーについて説明できる。	パソコンを利用するときに必要なルール、マナーについて知っている。
到達目標2：ワープロ、表計算、プレゼンテーションソフトを使って文章作成ができる。	ワープロ、表計算、プレゼンテーションソフトの各ソフトウエアを複合的に使って文章作成ができる。	ワープロ、表計算、プレゼンテーションソフトそれぞれのソフトウエアを使って目的のファイルを作成できる。	ワープロ、表計算、プレゼンテーションソフトのソフトウエアを使用できる。
到達目標3：パソコンの構成やネットワークの仕組みについて説明できる。	パソコンやネットワークにおける要素の関連性について意識しシステムとして説明できる。	パソコンやネットワークにおける個々の要素について説明できる。	パソコンやネットワークにおける個々の要素について知っている。
到達目標4：パソコンにおけるソフトウエアの役割について説明できる。	パソコンを使用する上で必要なソフトウエアについて、その役割を説明できる。	パソコンを使用する上で必要なソフトウエアについて説明できる。	パソコンを使用する上で必要なソフトウエアについて知っている。

Assigned Department Objectives

学習・教育到達度目標 B-4

Teaching Method

Outline	技術者として身につけておくべきコンピュータの基本操作を実習によって修得する。また、専門教科を学習する上で必要なソフトウエアとハードウエアの基礎知識に加え、情報ネットワークの全般的な取り扱い方について学ぶことにより、コースを問わず必要となるICT技術の基礎を身に着ける。本科目は数理・データサイエンス・AI教育プログラム（リテラシー）を構成し，プログラムの修了には本科目の修得が必要である。
Style	テキストに沿って説明を行い、実際に操作する実習を通して必要な知識を修得していきます。
Notice	情報リテラシーは、技術者にとって非常に大切な道具として、日常的に利用します。これに対し、ハードウエアやソフトウエアは日進月歩ですから、常に新しい知識や技法を修得する必要があります。このため、マニュアルを読んで理解し、それを活用することに習熟しなければなりません。授業では、情報リテラシーの一部しか取り扱いませんので、自分から進んで勉強し、得られた知識を応用する習慣を身につけてください。

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	オリエンテーション	情報システム使用上の注意点について説明できる。 アカウント(ID,パスワード)について理解し、パスワードの適切な設定と管理を行う。
		2nd	パソコンの基本操作	情報システム使用上の注意点について説明できる。 セキュリティポリシーやパスワード強度などを理解する。
		3rd	パソコンの基本操作	情報セキュリティとネチケットについて説明できる。 メディアリテラシー、情報の真偽の検討、個人情報流出などについて理解する。
		4th	パソコンの基本操作	Windowsの基本操作、メールの使用法を習得する。
		5th	Wordと文書作成	Wordによる文章入力ができる。
		6th	Wordと文書作成	Wordによる文章入力ができる。
		7th	Wordと文書作成	Wordによる文章入力、さらに表や画像を活用した文章の作成ができる。
		8th	Wordと文書作成	Wordによる文章入力、さらに表や画像を活用した文章の作成ができる。
	2nd Quarter	9th	【前期中間試験】	
		10th	Excelとデータ処理	Excelにおいて、Excel関数(SUM,AVERAGEなど)を利用した表計算を行うことができる。 Excel関数(SUM,AVERAGEなど)
		11th	Excelとデータ処理	Excelにおいて、Excel関数(SUM,AVERAGEなど)を利用した表計算を行うことができる。
		12th	Excelとデータ処理	Excelにおいて、関数とグラフを利用した表計算を行うことができる。
		13th	PowerPointとプレゼンテーション	テキスト入力を活用したプレゼンテーションの作成ができる。

		14th	PowerPointとプレゼンテーション	テキスト入力や図を活用したプレゼンテーションの作成ができる。
		15th	PowerPointとプレゼンテーション	テキスト入力や図やグラフの活用したプレゼンテーションの作成ができる。
		16th	【前期期末試験】 【答案返却】	
2nd Semester	3rd Quarter	1st	後期オリエンテーション、社会の情報化の進展と課題	後期情報リテラシーでの学習内容、学習方法が理解でき、社会の情報化の進展と課題について理解し説明できる。
		2nd	情報システムとコンピュータの仕組み	代表的な情報システムと利用形態について説明でき、コンピュータの構成とオペレーティングシステム(OS)の役割を理解し、基本的な取扱いができる。
		3rd	アナログとデジタル、情報のディジタル表現	アナログ情報とデジタル情報の違いと、コンピュータ内におけるデータ(数値、文字等)の表現方法について説明できる。
		4th	情報収集、データベース	情報を適切に収集・取得でき、データベースの意義と概要について説明できる。
		5th	メディア	情報の真偽について、根拠に基づいて検討する方法を説明でき、情報の適切な表現方法と伝達手段を選択し、情報の送受信を行うことができる。
		6th	ネットワーク	情報通信ネットワークの仕組みや構成および構成要素、プロトコルの役割や技術についての知識を持ち、社会における情報通信ネットワークの役割を説明できる。
		7th	情報セキュリティ1	情報セキュリティの必要性を理解し、対策、暗号技術の基礎、情報セキュリティに基づいた情報へのアクセス方法について説明できる。
		8th	情報セキュリティ2	情報や通信に関連する法令や規則等と、その必要性および情報社会で生活する上でのマナー、モラルの重要性、情報セキュリティを運営するための考え方と方法を説明できる。
	4th Quarter	9th	データサイエンス・AI技術1	データサイエンス・AI 技術の概要および社会や日常生活における課題解決の有用なツールであり、様々な専門領域の知見と組み合わせることによって価値を創造するものであることを、活用事例をもとに説明できる。
		10th	データサイエンス・AI技術2	データサイエンス・AI技術を利活用する際に求められるモラルや倫理について理解し、データを守るために必要な事項について説明できる。
		11th	データサイエンス・AI技術3	データサイエンス・AI 技術の利活用に必要な基本的スキル（データの取得、可視化、分析）を使うことができる。
		12th	アルゴリズムとプログラミング1	アルゴリズムとプログラミングの概要について理解し、同一の問題に対し、それを解決できる複数のアルゴリズムが存在しうることを知っている。
		13th	アルゴリズムとプログラミング2	基本的なプログラムを作成することができ、与えられた基本的な問題を解くための適切なアルゴリズムを構築することができる。
		14th	アルゴリズムとプログラミング3	プログラミング言語を用いて数学的な処理を行うことができる。
		15th	プレゼンテーション発表	これまでの知識を用いて、資料を作成できる。
		16th		

Evaluation Method and Weight (%)

	定期試験	小テスト	ポートフォリオ	発表・取り組み姿勢	その他	Total
Subtotal	25	25	45	5	0	100
基礎的能力	25	25	40	5	0	95
専門的能力	0	0	0	0	0	0
分野横断的能力	0	0	5	0	0	5

Anan College	Year	2024	Course Title	Career Design 1

Course Information

Course Code	0006	Course Category	Specialized / Compulsory
Class Format		Credits	School Credit: 0
Department	専門共通科目（本科）	Student Grade	2nd
Term	Year-round	Classes per Week	0
Textbook and/or Teaching Materials	manaba配信による動画コンテンツ等／阿南高専生のためのキャリアデザインワークブック（PDF版）		
Instructor	Yoshida Susumu		

Course Objectives

１．１年生を修了する段階で、将来の自分をイメージし高専で何を学ぶべきかの決断ができる。
２．２年生を修了する段階で、エンジニアとはどんな仕事なのかを理解できる。
３．３年生を修了する段階で、就職か進学かの決断をし、具体的な進路の候補を挙げられる。

Rubric

	理想的な到達レベルの目安	標準的な到達レベルの目安	未到達レベルの目安
目的・到達目標１	１年生終了段階で、高専で何を学ぶべきかが決まっている。	１年生終了段階で、高専で何を学ぶべきかの候補がある。	１年生終了段階で、高専で何を学ぶべきかが決まっていない。
目的・到達目標２	２年生終了段階で、エンジニアの仕事の内容や意義を理解できている。	２年生終了段階で、エンジニアの仕事の内容を理解できている。	２年生終了段階で、エンジニアの仕事の内容を理解できていない。
目的・到達目標３	３年生終了段階で、具体的な進路の候補が挙げられる。	３年生終了段階で、就職か進学かが決められている。	３年生終了段階で、具体的な進路の見通しが立っていない。

Assigned Department Objectives

Teaching Method

Outline	①１年生から３年生までの間に全１２話の講演を視聴し、それぞれの講演に対して自分の意見・感想を記録しておく（必須） ②３年生の時にある３つの特別講演を視聴する。
Style	基本的にビデオ視聴／オンデマンドで実施する。 自分のペースで学んでください。
Notice	学年修了時ごとの到達目標があるので、３年生の最後にあわてて全部まとめて処理することのないように。

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	１年第１回　高専生活を有意義なものにするために	
		2nd	１年第２回　社会に出て働くことの意義	
		3rd	１年第３回　企業と社会	
		4th	１年第４回　高専で学びながら身につけるマナー	
		5th	１年生第１回～４回の振り返り	
		6th	２年第１回　会社の組織とエンジニアの仕事	
		7th	２年第２回　企業にとって好ましい人材とは	
		8th	２年第３回　必要とされるコミュニケーション力とは	
	2nd Quarter	9th	２年第４回　先輩（卒業生）の体験談	
		10th	２年生第１回～４回の振り返り	
		11th	３年第１回　業界研究と企業研究	
		12th	３年第２回　自分を知り、自分を知ってもらう	
		13th	３年第３回　インターンシップの目的と意義	
		14th	３年第４回　就職・進学の流れ	
		15th	３年生第１回～４回の振り返り	
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		

		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	0	0	0	0	100	0	100
基礎的能力	0	0	0	0	20	0	20
専門的能力	0	0	0	0	60	0	60
分野横断的能力	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Career Design 2

Course Information

Course Code	0007	Course Category	Specialized / Elective
Class Format		Credits	School Credit: 0
Department	専門共通科目（本科）	Student Grade	2nd
Term	Year-round	Classes per Week	0
Textbook and/or Teaching Materials			
Instructor	Yoshida Susumu		

Course Objectives

Achieve special results that cannot be obtained from the regular curriculum by carrying out extracurricular and off-campus learning activities in accordance with their own plans.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities to expand their possibilities. Organize study groups of their own design and obtain qualifications.	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities that expand your possibilities.	There is no policy in place for students to participate in seminars, etc. organized by the Career Support Office and to make career decisions.

Assigned Department Objectives

Teaching Method

Outline	These are elective courses designed to evaluate and give credit for extracurricular and off-campus activities to develop a foundation of skills necessary for a productive life while in school and after graduation (grades 1 through 4).
Style	Students can accumulate Career Points (CP) by engaging in extracurricular and off-campus activities approved by the Career Support Office for the prescribed amount of time (60 to 90 minutes) and submitting the prescribed reports and assignments. 15 CP are converted to 1 credit and students can apply for a maximum of 3 credits to be awarded at the end of the school year. Activities that are deemed eligible to be given CP and the conditions for certification (reports, assignments, etc.) will be announced on manaba. Activities are mainly categorized into the following 1) to 4). (1) Activities for career development after graduation (2) Work experience at a familiar workplace (on-campus) Volunteer activities on and off campus (4) Activities to expand one's potential
Notice	Other than seminars and other activities organized by the Career Support Office, some activities are organized by outside groups or in response to requests from the school's faculty and staff, but most of them are considered to be activities planned and managed by students on their own initiative. Please check with manaba to confirm whether your activities are eligible for CP. If you have any questions, please contact the Career Support Office Manager on your own.

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Please receive the "Career Design 2 Recording Form (Part 1)" at the Career Support Office between the first and fourth year students to start the course.	
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		

		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Proficiency	0	0	0	0	20	0	20
Specialized Proficiency	0	0	0	0	60	0	60
Cross Area Proficiency	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Career Design 2

Course Information

Course Code	0010	Course Category	Specialized / Elective
Class Format		Credits	School Credit: 0
Department	専門共通科目（本科）	Student Grade	3rd
Term	Year-round	Classes per Week	0
Textbook and/or Teaching Materials			
Instructor	Yoshida Susumu		

Course Objectives

Achieve special results that cannot be obtained from the regular curriculum by carrying out extracurricular and off-campus learning activities in accordance with their own plans.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities to expand their possibilities. Organize study groups of their own design and obtain qualifications.	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities that expand your possibilities.	There is no policy in place for students to participate in seminars, etc. organized by the Career Support Office and to make career decisions.

Assigned Department Objectives

Teaching Method

Outline	These are elective courses designed to evaluate and give credit for extracurricular and off-campus activities to develop a foundation of skills necessary for a productive life while in school and after graduation (grades 1 through 4).
Style	Students can accumulate Career Points (CP) by engaging in extracurricular and off-campus activities approved by the Career Support Office for the prescribed amount of time (60 to 90 minutes) and submitting the prescribed reports and assignments. 15 CP are converted to 1 credit and students can apply for a maximum of 3 credits to be awarded at the end of the school year. Activities that are deemed eligible to be given CP and the conditions for certification (reports, assignments, etc.) will be announced on manaba. Activities are mainly categorized into the following 1) to 4). (1) Activities for career development after graduation (2) Work experience at a familiar workplace (on-campus) Volunteer activities on and off campus (4) Activities to expand one's potential
Notice	Other than seminars and other activities organized by the Career Support Office, some activities are organized by outside groups or in response to requests from the school's faculty and staff, but most of them are considered to be activities planned and managed by students on their own initiative. Please check with manaba to confirm whether your activities are eligible for CP. If you have any questions, please contact the Career Support Office Manager on your own.

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Please receive the "Career Design 2 Recording Form (Part 1)" at the Career Support Office between the first and fourth year students to start the course.	
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		

		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Proficiency	0	0	0	0	20	0	20
Specialized Proficiency	0	0	0	0	60	0	60
Cross Area Proficiency	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Career Design 1

Course Information

Course Code	1513R01	Course Category	Specialized / Compulsory
Class Format		Credits	School Credit: 1
Department	専門共通科目（本科）	Student Grade	3rd
Term	Year-round	Classes per Week	1
Textbook and/or Teaching Materials	Video content distributed by manaba		
Instructor	Yoshida Susumu		

Course Objectives

1. By the time you complete your first year, you can visualize yourself in the future and decide what you should study at a technical college.
2. By the time you complete your second year, you will be able to understand what kind of work it is to be an engineer.
3. At the stage of completing the third year, students can decide whether to get a job or go to further education, and can list concrete career options.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	By the end of the first year, students have decided what they should study at a technical college.	At the end of the first year, there are candidates for what to study at a technical college.	At the end of the first year, students have not yet decided what they should study at a technical college.
Achievement 2	By the end of the second year, students are able to understand the content and significance of an engineer's work.	By the end of the second year, students are able to understand the content of an engineer's work.	At the end of his second year, he still doesn't understand what an engineer's job entails.
Achievement 3	At the end of the third year, students are given concrete career options.	At the end of the third year, students decide whether to get a job or go on to higher education.	At the end of his third year, he does not have a concrete career path in mind.

Assigned Department Objectives

Teaching Method

Outline	watch the lecture of all 12 episodes between a first grader and a third grader and record own opinion, impression for each lecture (essential)
Style	carry it out in video seeing and hearing/on-demand basically. Please learn at own pace.
Notice	Not to make any what it all processes in a mass in the last of the third grader as there is arrival target of at the time of every grade completion.

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	To make KOSEN life significant	
		2nd	Significance of attending the society, and working	
		3rd	company and society	
		4th	Manner to acquire while learning in KOSEN	
		5th	Review of 1st grade 1st-4th	
		6th	Generalization: Carrier design of the first grader	
		7th	Work of an organization and the engineer of the company	
		8th	With the human resources who are favorable for a company	
	2nd Quarter	9th	With the communication power to be required	
		10th	Review of 2nd grade 1st-4th	
		11th	Experiences of the graduate	
		12th	Generalization: Carrier design of the second grader	
		13th	industry study and company study	
		14th	know oneself and have another person know oneself	
		15th	Review of 3rd grade 1st-4th	
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		

		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Proficiency	0	0	0	0	20	0	20
Specialized Proficiency	0	0	0	0	60	0	60
Cross Area Proficiency	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Interdisciplinary Project

Course Information

Course Code	1214T11	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	専門共通科目（本科）	Student Grade	4th
Term	Year-round	Classes per Week	前期:1 後期:1
Textbook and/or Teaching Materials	As designated by each faculty member		
Instructor	Nishimoto Koji,Okita Yuji,Okumoto Yoshihiro,Kawabata Nariyuki,Matsuura Fuminori,Yasuda Takeshi,Itami Shin		

Course Objectives

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Able to understand the significance and purpose of teamwork, view team issues as their own issues, and engage in team work with a sense of ownership.	Able to listen carefully to team members' opinions and take necessary actions for the good of the team, such as suppressing one's own emotions and helping team members with their work.	Able to act with awareness of his or her role within the team, although he or she may sometimes overemphasize his or her role.
Achievement 2	Able to consider and implement actions that lead to the improvement of the team. Take responsibility for their own actions based on their own will and judgment, without waiting for instructions.	Able to accurately perceive the situation around them, understand their own abilities, strengths, and feasible actions, and take action on their own initiative.	Although they may propose actions that do not take feasibility into account, they are able to propose actions necessary for the team based on their understanding of the surrounding situation and take action on their own.
Achievement 3	Able to explain and express one's ideas in a way that is easy to understand for a wide range of audiences. Able to give explanations that get to the point and use concrete examples and evidence in presentations.	Able to describe and explain one's thoughts by choosing words that take the other person's point of view into consideration. To be able to explain in a presentation using simple charts and diagrams.	Able to explain, describe, and communicate one's thoughts to a person with expertise. Can explain and describe his/her thoughts using expressions that express emotions (e.g., responses, body language, emotional expressions, etc.).

Assigned Department Objectives

学習・教育到達度目標 A-1 学習・教育到達度目標 A-2 学習・教育到達度目標 A-3 学習・教育到達度目標 D-3 学習・教育到達度目標 E-2

Teaching Method

Outline	The objective is to understand one's own role and to be able to work as a team to achieve the team's goals.
Style	The first few sessions will be spent discussing and presenting the issues to be addressed by the team. Students are required to prepare a weekly report on each session and enter the report on the LMS. Please note that submission of the weekly report is considered as attendance. The class is a year-round course, but the midterm presentation will be made in July and the final presentation will be made at the Anan college festival. The schedule should be prepared based on this. A final report must be submitted after the completion of all activities.
Notice	The faculty does not provide specialized instruction, but allows students to think and work on their own. Students can collect necessary materials and information, and ask questions to the faculty members when necessary.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Issue selection	Able to participate proactively in discussions to select issues.
		2nd		
		3rd		
		4th	Issue selection and work plan preparation	Able to participate proactively in discussions to select issues and formulate opinions as a group.
		5th		
		6th		
		7th	Issue selection and work plan preparation	Able to participate proactively in discussions to select issues and formulate opinions as a group.
		8th		
	2nd Quarter	9th		
		10th	Preparation for Issue Presentation	Able to participate proactively in discussions to select issues and formulate opinions as a group.
		11th		
		12th		
		13th	Presentation of issues (mid-term presentation)	Able to communicate the issues to be addressed to others in an easy-to-understand manner.

		14th	Tackling issues	Able to understand their roles and is able to tackle challenges.
		15th	Tackling issues	Able to understand their roles and is able to tackle challenges.
		16th		
2nd Semester	3rd Quarter	1st	Tackling issues	Able to understand their roles and is able to tackle challenges.
		2nd	Tackling issues	Able to understand their roles and is able to tackle challenges.
		3rd	Tackling issues	Able to understand their roles and is able to tackle challenges.
		4th	Tackling issues	Able to understand their roles and is able to tackle challenges.
		5th	Tackling issues	Able to understand their roles and is able to tackle challenges.
		6th	Tackling issues	Able to understand their roles and is able to tackle challenges.
		7th	Preparation for final presentation	Able to communicates their own efforts to the group in an easy-to-understand manner.
		8th	Final presentation	Able to communicates their own efforts to the group in an easy-to-understand manner.
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	midterm/final exam	quiz	portfolio	presentation/attitude	Other	Total
Subtotal	0	0	50	50	0	100
Basic Proficiency	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	0
Cross Area Proficiency	0	0	50	50	0	100

Anan College	Year	2024	Course Title	Interdisciplinary Project

Course Information

Course Code	1314T11	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	専門共通科目（本科）	Student Grade	4th
Term	Year-round	Classes per Week	前期:1 後期:1
Textbook and/or Teaching Materials	なし		
Instructor	Komatsu Minoru		

Course Objectives

1.一つの目標に向かってチームで活動できる.
2.チームの中で自己の役割を認識し，自らの長所を発揮しながら主体的に行動できる.
3.チームや自身の取組みを他者にわかりやすく，文章やプレゼンテーションで伝えることができる.

Rubric

	理想的な到達レベルの目安	標準的な到達レベルの目安	最低限の到達レベル
評価項目1	チームワークの意義と目的を理解し，チームの課題を自らの課題ととらえ，当事者意識をもってチーム作業に取り組むことができる.	チームメンバーの意見をよく聞き，自らの感情を抑制したり，メンバーの仕事を手伝ったりするなど，チームのために必要な行動をとることができる.	自分の役割を重視しすぎた行動をとることもあるが，チーム内での自分の役割を認識した行動をとることができる.
評価項目2	チームの改善につながる行動を考え実践することができる．指示待ちになることなく，自分の意思・判断によって責任を持って行動することができる.	周囲の状況を的確にとらえ，自身の能力や長所，実現可能な行動を理解して自ら進んで行動することができる.	実現可能性を考慮していない行動を提案する場合もあるが，周囲の状況を理解したうえでチームに必要な行動を提案し，自ら行動を起こすことができる.
評価項目3	広い対象に対してわかりやすく自分の考えを伝えるための説明・表現ができる．要点をとらえた説明ができ，具体例やエビデンスを使ってプレゼンで説明することができる.	相手の立場を考えた言葉を選び，自分の考えを記述・説明することができる．簡単な図表等を用いてプレゼンで説明することができる.	専門知識を有する相手に対して自分の考えを説明・記述し伝えることができる．感情を表す表現（相づち，ボディーランゲージ，情緒的表現等）を使いながら自分の考えを説明・記述することができる.

Assigned Department Objectives

学習・教育到達度目標 A-1 学習・教育到達度目標 A-2 学習・教育到達度目標 A-3 学習・教育到達度目標 E-1 学習・教育到達度目標 E-2

Teaching Method

Outline	チームとしての目標を達成するため，自らの役割を理解し活動できることを目的とする.
Style	初回から数回はチームで取組む課題を検討・発表する．各回の取組みについて週報を作成し，LMS上で入力すること．週報の提出を持って出席とみなすため注意すること. 授業は通年科目であるが中間発表を7月，最終発表は蒼阿祭（高専祭）での活動とする．それを踏まえたスケジュールを作成すること．また，全活動終了後に最終レポートを提出すること.
Notice	教員から専門的な指導はせず，学生自身で考えて取り組ませる．学生は必要な資料や情報を収集し，状況によっては教員に質問できる.

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	課題選定	課題を選定するための議論に主体的に参加することができる.
		2nd		
		3rd		
		4th	課題選定・作業計画作成	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		5th		
		6th		
		7th	課題選定・作業計画作成	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		8th		
	2nd Quarter	9th		
		10th	課題発表会準備	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		11th		
		12th		
		13th	課題発表会（中間発表）	他者にわかりやすく取り組む課題を伝えることができる.
		14th	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		15th	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		16th		

2nd Semester	3rd Quarter	1st	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		2nd	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		3rd	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		4th	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		5th	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		6th	課題への取り組み	自身の役割を理解して課題に取り組むことができる.
		7th	最終発表会準備	自身の取り組みをグループ内でわかりやすく伝えることができる.
		8th	最終発表会	他者にわかりやすくグループでの取り組みを伝えることができる.
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	中間・定期試験	小テスト	ポートフォリオ	態度	発表・取り組み姿勢	その他	Total
Subtotal	0	0	50	0	50	0	100
基礎的能力	0	0	0	0	0	0	0
専門的能力	0	0	0	0	0	0	0
分野横断的能力	0	0	50	0	50	0	100

Anan College	Year	2024	Course Title	Interdisciplinary Project

Course Information

Course Code	1414T11	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	専門共通科目（本科）	Student Grade	4th
Term	Year-round	Classes per Week	前期:1 後期:1
Textbook and/or Teaching Materials			
Instructor	Ueda Kohei		

Course Objectives

1. Able to summarize various technical information in the field of chemistry into a report.
2. Able to work in a team with students of different ages toward the same goal.
3. Able to think about your role in the team and act on your own initiative.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Able to understand technical information and corporate activities, and summarize it in a report including your own considerations.	Able to understand technical information and corporate activities, and summarize its contents in a report.	Able to understand the basics of technical information and corporate activities, and summarize them in a report.
Achievement 2	Able to understand the meaning and purpose of teamwork, take the team's issues as your own, and work them with a sense of ownership.	Able to think and implement the necessary actions for the team, after listening carefully to the opinions of the members.	Able to think and act on your role within the team.
Achievement 3	Able to act responsibly based on your own will and judgment, moreover, think and act to improve your team.	Able to understand your surroundings, think about your abilities, strengths, and feasibility, and work initiative.	Able to understand your surroundings, think about the actions your team needs to take, and work initiative.

Assigned Department Objectives

学習・教育到達度目標 A-1 学習・教育到達度目標 A-2 学習・教育到達度目標 A-3 学習・教育到達度目標 E-2

Teaching Method

Outline	You learn about advanced knowledge in the field of chemistry and the activities of current chemical companies. Furthermore, based on the knowledge you have acquired, you will carry out group works in cooperation with different grades. Through this work, the purpose is that you achieve the goals of your team.
Style	You acquire advanced knowledge in the field of chemistry and knowledge about corporate activities through lectures. For group work, you are divided into groups. The teachers becomes facilitators.
Notice	The score will be reduced as you miss report deadlines by a week. If you miss a class, you must submit your report tentatively at Manaba.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance, Lecture by a chemistry course teacher and an external lecturer, group work1	Able to understand the purpose of this lesson. Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		2nd	Lecture by a chemistry course teacher and an external lecturer, group work2	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		3rd	Lecture by a chemistry course teacher and an external lecturer, group work3	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		4th	Lecture by a chemistry course teacher and an external lecturer, group work4	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		5th	Lecture by a chemistry course teacher and an external lecturer, group work5	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		6th	Lecture by a chemistry course teacher and an external lecturer, group work6	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		7th	Lecture by a chemistry course teacher and an external lecturer, group work7	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.

		8th	Lecture by a chemistry course teacher and an external lecturer, group work8	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
	2nd Quarter	9th	Lecture by a chemistry course teacher and an external lecturer, group work9	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		10th	Lecture by a chemistry course teacher and an external lecturer, group work10	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		11th	Lecture by a chemistry course teacher and an external lecturer, group work11	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		12th	Lecture by a chemistry course teacher and an external lecturer, group work12	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		13th	Lecture by a chemistry course teacher and an external lecturer, group work13	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		14th	Lecture by a chemistry course teacher and an external lecturer, group work14	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		15th	Lecture by a chemistry course teacher and an external lecturer, group work15	Able to understand the background and current problems of the lecturer's field of expertise. Able to listen to lecturer and think about your career path.
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Assignment	Total
Subtotal	100	100
Basic Proficiency	30	30
Specialized Proficiency	30	30
Cross Area Proficiency	40	40

Anan College	Year	2024	Course Title	Minor

Course Information

Course Code	1554300	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	4th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials	Official Textbook for the 9th Revised Edition of the eco Test for Environmental Society, Tokyo Chamber of Commerce and Industry, JMA Management Center, Inc.		
Instructor	Ota Naotomo		

Course Objectives

1. Understand sustainability and explain the history of environmental issues.
2. Explain the physical, chemical, and biological characteristics of the earth and the current status and issues in society related to the environment.
3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
4. To be able to explain the current status and issues of basic principles, plans, environmental standards, environmental conservation methods, environmental education, and environmental impact assessment in environmental conservation.
Understand and explain the collaboration among government, business, and citizens in environmental conservation and the roles of each.

Rubric

	Ideal Level	Standard Level	minimum Level
Achievement 1	Understand sustainability and be able to explain the history of environmental issues in detail.	Understand sustainability and be able to explain the history of environmental issues.	Understand sustainability and the history of environmental issues.
Achievement 2	To be able to explain in detail the physical, chemical and biological characteristics of the earth and the current status and issues of society regarding the environment.	To be able to explain the physical, chemical and biological characteristics of the earth and the current status and issues of society regarding the environment.	To be able to understand the physical, chemical and biological characteristics of the earth and the current status and issues of society regarding the environment.
Achievement 3	To be able to explain in detail about global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.	To be able to explain about global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.	To be able to understand about global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
Achievement 4	To be able to explain in detail the current status and issues regarding basic principles, planning, environmental standards, environmental conservation methods, environmental education, and environmental impact assessment.	To be able to explain the current status and issues regarding basic principles, planning, environmental standards, environmental conservation methods, environmental education, and environmental impact assessment.	To be able to understand the current status and issues regarding basic principles, planning, environmental standards, environmental conservation methods, environmental education, and environmental impact assessment.
Achievement 5	Understand and be able to explain in detail the collaboration among government, business, and citizens in environmental conservation and the roles of each.	Understand and be able to explain the collaboration among government, business, and citizens in environmental conservation and the roles of each.	Understand the collaboration among government, business, and citizens in environmental conservation and the roles of each.

Assigned Department Objectives

Teaching Method

Outline	Acquire a broad knowledge of the entire environmental field with the aim of becoming a human resource capable of leading a "sustainable society" that balances the environment and the economy.
Style	Students will be evaluated by quizzes, reports, and presentations.
Notice	

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	
		2nd	History with Sustainability and Environmental Issues	1. Understand sustainability and explain the history of environmental issues.
		3rd	Fundamentals of the Earth	2. Explain the physical, chemical, and biological characteristics of the earth and the current status and issues in society related to the environment.
		4th	Current state of society: population, economy, food, resources, poverty	2. Explain the physical, chemical, and biological characteristics of the earth and the current status and issues in society related to the environment.

		5th	Global Warming	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
		6th	Energy Issues	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
		7th	Biodiversity and its crisis	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
		8th	Global environmental problems	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
	2nd Quarter	9th	Recycling-oriented society	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
		10th	Local Environmental Issues	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
		11th	Chemical Substances and Radioactivity	3. To be able to explain the current status and issues of global warming, energy problems, biodiversity, recycling-oriented society, chemical substances, radioactivity, and regional and global environmental problems from the viewpoint of environmental conservation.
		12th	Basic principles, plans, environmental standards, and methods of environmental conservation	4. To be able to explain the current status and issues of basic principles, plans, environmental standards, environmental conservation methods, environmental education, and environmental impact assessment in environmental conservation.
		13th	Environmental education, environmental impact assessment	4. To be able to explain the current status and issues of basic principles, plans, environmental standards, environmental conservation methods, environmental education, and environmental impact assessment in environmental conservation.
		14th	Roles of government and business	5.Understand and explain the collaboration among government, business, and citizens in environmental conservation and the roles of each.
		15th	Role of individuals and NPOs	5.Understand and explain the collaboration among government, business, and citizens in environmental conservation and the roles of each.
		16th		

Evaluation Method and Weight (%)

	quiz	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	65	15	0	0	20	0	100
Basic Proficiency	65	15	0	0	20	0	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Career Design 2

Course Information

Course Code	1594R02	Course Category	Specialized / Elective
Class Format		Credits	School Credit: 3
Department	専門共通科目（本科）	Student Grade	4th
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Yoshida Susumu		

Course Objectives

Achieve special results that cannot be obtained from the regular curriculum by carrying out extracurricular and off-campus learning activities in accordance with their own plans.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities to expand their possibilities. Organize study groups of their own design and obtain qualifications.	Participate in seminars and other events organized by the Career Support Office to formulate a plan for reaching a career decision. Participate in activities that expand your possibilities.	There is no policy in place for students to participate in seminars, etc. organized by the Career Support Office and to make career decisions.

Assigned Department Objectives

Teaching Method

Outline	These are elective courses designed to evaluate and give credit for extracurricular and off-campus activities to develop a foundation of skills necessary for a productive life while in school and after graduation (grades 1 through 4).
Style	Students can accumulate Career Points (CP) by engaging in extracurricular and off-campus activities approved by the Career Support Office for the prescribed amount of time (60 to 90 minutes) and submitting the prescribed reports and assignments. 15 CP are converted to 1 credit and students can apply for a maximum of 3 credits to be awarded at the end of the school year. Activities that are deemed eligible to be given CP and the conditions for certification (reports, assignments, etc.) will be announced on manaba. Activities are mainly categorized into the following 1) to 4). (1) Activities for career development after graduation (2) Work experience at a familiar workplace (on-campus) Volunteer activities on and off campus (4) Activities to expand one's potential
Notice	Other than seminars and other activities organized by the Career Support Office, some activities are organized by outside groups or in response to requests from the school's faculty and staff, but most of them are considered to be activities planned and managed by students on their own initiative. Please check with manaba to confirm whether your activities are eligible for CP. If you have any questions, please contact the Career Support Office Manager on your own.

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Please receive the "Career Design 2 Recording Form (Part 1)" at the Career Support Office between the first and fourth year students to start the course.	
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		

		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Proficiency	0	0	0	0	20	0	20
Specialized Proficiency	0	0	0	0	60	0	60
Cross Area Proficiency	0	0	0	0	20	0	20

Anan College	Year	2024	Course Title	Interdisciplinary Project

Course Information

Course Code	1714T11	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	専門共通科目（本科）	Student Grade	4th
Term	Year-round	Classes per Week	前期:1 後期:1
Textbook and/or Teaching Materials	担当教員の指定による		
Instructor	Yoshida Susumu,Tanaka Tatsuji		

Course Objectives

1．学生とチームを組み，一つの目標に向かってチームで活動できる.
2．現状の課題を見つけ，情報技術を用いた解決方法の提案ができる.
3．課題を分析するために様々な情報を収集し，活用することができる.
4．チームの中で自己の役割を認識し，自らの長所を発揮しながら主体的に行動できる.
5．チームや自身の取組みを他者にわかりやすく，デモやプレゼンテーションで伝えることができる.

Rubric

	理想的な到達レベルの目安	標準的な到達レベルの目安	最低限の到達レベルの目安(可)
到達目標1	チームワークの意義と目的を理解し，チームの課題を自らの課題ととらえ，当事者意識をもってチーム作業に取り組むことができる.	チームメンバーの意見をよく聞き，自らの感情を抑制したり，メンバーの仕事を手伝ったりするなど，チームのために必要な行動をとることができる.	チーム内での自分の役割を認識した行動をとることができる.
到達目標2	課題について十分に理解しており，適切な解決システムを提案したうえで，システムの具体的な設計ができる.	課題について客観的に分析・提示でき，適切な解決システムを提案できる.	課題について理解し，解決のために必要な要件について整理することができる.
到達目標3	収集した情報源や引用元の信頼性・正確性への配慮が必要となることを理解したうえで，課題の解決につながる情報を取捨選択できる.	収集した情報の取捨選択・整理・分類などにより，活用すべき情報を選択できる.	書籍，インターネット，ヒアリング等により必要な情報を適切に収集できる.
到達目標4	チームの改善につながる行動を考え実践することができる．自分の意思・判断によって責任を持って行動することができる.	周囲の状況を的確にとらえ，自身の能力や長所，実現可能な行動を理解して自ら進んで行動することができる.	周囲の状況を理解したうえでチームに必要な行動を提案し，自ら行動を起こすことができる.
到達目標5	わかりやすくチームおよび自分の考えや成果を伝えるため、デモやプレゼンにて要点をとらえた説明ができる.	チームおよび自分の考えを、簡単な図表等を用いてプレゼンで説明することができる.	専門知識を有する相手に対して自分の考えを説明・記述し伝えることができる.

Assigned Department Objectives

学習・教育到達度目標 A-1 学習・教育到達度目標 A-2 学習・教育到達度目標 A-3 学習・教育到達度目標 E-2

Teaching Method

Outline	ランダムに選んだメンバーによるチームを構成し，演習を進める．様々な考え方を有する構成員からなる集団において，自らの役割を理解し，チームとしての目標を達成するための活動ができることを目的とする. 本科目内で取り組むグループワークで扱うテーマは、インターンシップ、システム設計1、システム設計2で扱うテーマと連携しながら、チーム活動を通して、目標を達成するための活動を学びます。 本科目は数理・データサイエンス・AI教育プログラム（リテラシー）を構成し，プログラムの修了には本科目の修得が必要である.
Style	初回から数回は毎回異なるグループにて進路研究および情報技術を用いて解決すべき課題の調査に取り組む。中盤からグループを固定し、システム開発により課題解決する対象の課題を発見するためのアイデアソンを行い、取り組む課題とその解決案の発表を行う。後半は、チームで開発するシステム案をまとめ、企業技術者の方へシステム案のアイデアレビュー、システム提案レビューを行い、アドバイスをもらいながらシステム案を完成させる。 その後、チームでシステムを開発していく過程でのチーム運営や各自の役割について企業技術者の方に進捗レビューを実施しながら、チームによるシステム開発における進め方について学ぶ。チームの取り組み成果の最終発表会は12月上旬を予定している. システム案発表および最終発表では企業技術者の聴講を予定している．学外の人にもわかりやすくシステムを説明できるよう発表内容を考えることが重要である.
Notice	教員からグループワークおよびチーム活動について具体的な指導はせず，学生自身で考えて取り組ませる．学生は必要な情報を収集し，状況によっては教員に質問できる．企業技術者の方がグループワークやチーム開発におけるメンターとして関わってくれます。 評価割合：システム案発表会【チーム採点20%】，最終発表会【チーム採点30%】、作業報告書【個人採点40%】，チーム内相互評価【個人採点10%】

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☑ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス、参加企業紹介 進路研究	グループワークの基礎を知り，グループとして取り組んでいく準備ができる.
		2nd	インターンシップ先研究 企業紹介、課題提案	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		3rd	インターンシップ先研究 企業紹介、課題提案	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		4th	インターンシップ先研究 企業紹介、課題提案	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.

		5th	システム開発のためのアイデアソン	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		6th		
		7th		
		8th		
	2nd Quarter	9th	システム開発のためのアイデアソン	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		10th	アイデアテーマ選定とシステム案の作成	他者にわかりやすくグループでの取り組みを伝えることができる．.
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
2nd Semester	3rd Quarter	1st	システム開発のためのアイデアソン	課題を選定するための議論に主体的に参加し，グループとしての意見をまとめることができる.
		2nd	システム案アイデアレビュー	他者にわかりやすくグループでの取り組みを伝えることができる.
		3rd	システム案紹介レビュー	他者にわかりやすくグループでの取り組みを伝えることができる.
		4th	システム開発役割担当レビュー	自身の役割を理解して課題に取り組むことができる.
		5th	役割別進捗レビュー	自身の役割を理解して課題に取り組むことができる.
		6th	システム開発・ドキュメント進捗レビュー	自身の役割を理解して課題に取り組むことができる.
		7th	システム開発・ドキュメント進捗レビュー	自身の役割を理解して課題に取り組むことができる.
		8th	システムデモ準備状況報告会	他者にわかりやすくグループでの取り組みを伝えることができる.
	4th Quarter	9th	システムデモ発表会	他者にわかりやすくグループでの取り組みを伝えることができる.
		10th	企業メンターへの報告と、振り返り	他者にわかりやすくグループでの取り組みを伝えることができる.
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	中間・定期試験	相互評価	ポートフォリオ	発表・取り組み姿勢	その他	Total
Subtotal	0	10	40	50	0	100
基礎的能力	0	0	0	0	0	0
専門的能力	0	0	0	0	0	0
分野横断的能力	0	10	40	50	0	100

Anan College	Year	2024	Course Title	Interdisciplinary Project

Course Information

Course Code	1814T11	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	専門共通科目（本科）	Student Grade	4th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials	The teacher distributes document, videos		
Instructor	Tada Yutaka		

Course Objectives

Explain the disaster risks in Anan City. 2.
Explain countermeasures against earthquake, tsunami, flood, landslide, etc.
3. To be able to use construction DX tools. 4.
4. To obtain opinions from local residents in a workshop.
5. To be able to put together a new idea by collaborating the spatial design method with knowledge from other fields.

Rubric

	Ideal Level	Standard Level	Minimum Level
Course Objective 1	Accurately describe at least five disasters that occur in Anan City.	Accurately describe at least three disasters that occur in Anan City.	Accurately describe at least one disaster that occur in Anan City.
Course Objective 2	Accurately explain at least five countermeasures against earthquakes, tsunamis, floods, landslides, etc.	Accurately explain at least three countermeasures against earthquakes, tsunamis, floods, landslides, etc.	Accurately explain at least one countermeasure against earthquakes, tsunamis, floods, landslides, etc.
Course Objective 3	3 of the construction DX tools can be used	2 of the construction DX tools can be used	1 of the construction DX tools can be used
Course Objective 4	Obtain 30 or more opinions from local residents and others at workshops	Obtain 20 or more opinions from local residents and others at workshops	Obtain 10 or more opinions from local residents and others at workshops
Course Objective 5	Can bring together new ideas that collaborate at least three other fields of knowledge with spatial design methods.	Can bring together new ideas that collaborate at least two other fields of knowledge with spatial design methods.	Can bring together new ideas that collaborate at least one other fields of knowledge with spatial design methods.

Assigned Department Objectives

学習・教育到達度目標 A-1 学習・教育到達度目標 A-2 学習・教育到達度目標 A-3 学習・教育到達度目標 B-1 学習・教育到達度目標 B-4 学習・教育到達度目標 E-2

Teaching Method

Outline	Anan City, where Anan National College of Technology is located, has experienced various disasters in the 20 years since you were born. In the future, many disasters are predicted to occur in combination, such as a huge Nankai Trough earthquake, tsunami disaster, liquefaction, landslide disaster, flooding of the Nagawa River and Kuwano River, and inland water flooding. The purpose of this course is to predict disasters that you may be affected by in the future and to enhance your disaster preparedness. First, most of the problems that occur after a disaster are often accelerated problems that already existed before the disaster. The class will start by finding out the current problems in Anan City and your own problems. We encourage you to learn more about Anan City and how to cope with possible disasters by combining existing spatial design methods from architecture, civil engineering, and urban planning with new ideas from other disciplines.
Style	Weeks 2-5 will consist of video lectures on disaster prevention and pre-disaster recovery, followed by group discussion and research, and a presentation at the end of the class. Weeks 6-10: Exercises using construction DX tools. From 11 to 13 weeks, a workshop will be held for local residents to understand their awareness of disasters. The final submission will be an A3 poster presentation.
Notice	Group work.

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation (how to generate ideas)	Learn evolutionary thinking as a way of generating ideas
		2nd	The Future of Reconstruction	Be able to have your own opinion about the future of reconstruction
		3rd	Characteristics of earthquake and tsunami damage and countermeasures	Explain the characteristics of earthquake damage and countermeasures Explain the characteristics of tsunami damage and countermeasures
		4th	Rebuilding the lives of disaster victims	Explain the characteristics of flood damage and countermeasures
		5th	Rebuilding the Lives of Survivors	Explain the types and processes of rebuilding the lives of disaster victims
		6th	Let's find safe land.	Able to summarize disaster information using Geographical Survey Institute maps

		7th	Let's find safe land.	Can create your own hazard maps using QGIS
		8th	Let's find safe land.	Can create your own hazard maps using QGIS
	2nd Quarter	9th	Let's design a safe house!	Able to perform seismic design using wallstat
		10th	Let's design a safe house!	Able to perform seismic design using wallstat
		11th	Reconstruction Town Planning Image Training	Let's identify local disaster risks through workshops!
		12th	Reconstruction Town Planning Image Training	Let's identify local disaster risks through workshops!
		13th	Reconstruction Town Planning Image Training	Let's identify local disaster risks through workshops!
		14th	Presentation Preparation	Putting ideas together into a presentation
		15th	Presentation of own designed object	A learner can communicate to everyone their own designed object by using the design submission form.
		16th	Presentation	Presenting Ideas

Evaluation Method and Weight (%)

	Final Presentation	Weekly Presentation	exercises	Workshop	Other	Total
Subtotal	25	25	25	25	0	100
Basic Proficiency	5	5	5	5	0	20
Specialized Proficiency	15	15	15	15	0	60
Cross Area Proficiency	5	5	5	5	0	20

Anan College	Year	2024	Course Title	Manufacturing Process

Course Information

Course Code	1555100	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials	Materials will be distributed as needed.		
Instructor	Nishimoto Koji		

Course Objectives

1. Able to explain the outline of casting and various casting methods.
2. Able to explain the outline of welding and various welding methods.
3. Able to explain the outline of cutting and various cutting methods.
4. Able to explain the outline of grinding and various grinding methods.
5. Able to explain the outline of plastic forming and various plastic forming methods.

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Able to explain casting preparation methods, mold structures and types, and special castings.	Able to explain the outline of casting and various casting methods.	Able to explain overview of casting.
Achievement 2	Able to explain select and explain welding methods appropriate to the joint material and joint style.	Able to explain an overview of welding and various welding methods.	Able to explain overview of welding.
Achievement 3	Able to understand and explain the types and construction of various types of cutting machines.	Able to explain the outline of cutting and various cutting methods.	Able to explain overview of cutting.
Achievement 4	Able to understand and explain an overview of the grinding process and the three elements of a grinding wheel.	Able to explain the outline of grinding and various grinding methods.	Able to explain overview of grinding.
Achievement 5	Able to understand the characteristics of various machining methods and be able to select the best method for the workpiece.	Able to explain the outline of plastic forming and various plastic forming methods.	Able to explain overview of plastic forming.

Assigned Department Objectives

Teaching Method

Outline	In the manufacture of various machine parts, it is desirable to be able to produce the optimum product in the smallest process and in the shortest period of time. In this lecture, students will learn about typical machining methods such as removal machining, deformation machining, and addition machining. The objective of this course is to develop the ability to select the most appropriate machining method for the workpiece by understanding the fundamentals of the various machining methods and machine tools.
Style	In principle, classes will be conducted in lecture format. As this course is a credit course, a report will be required as pre- and post-learning. 【30 hours of class time + 60 hours of self-study】
Notice	

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Outline of Machine Tool Act	
		2nd	Casting	Able to explain the outline of casting.
		3rd	Casting	Able to explain various casting methods.
		4th	Casting	Able to explain various casting methods.
		5th	Welding	Able to explain the outline of welding.
		6th	Welding	Able to explain various welding methods.
		7th	Welding	Able to explain various welding methods.
		8th	Midterm exam	
	2nd Quarter	9th	Cutting	Able to explain the outline of cutting.
		10th	Cutting	Able to explain various cutting methods.
		11th	Grinding	Able to explain the outline of grinding.
		12th	Grinding	Able to explain various grinding methods.
		13th	Plastic forming	Able to explain the outline of plastic forming.
		14th	Plastic forming	Able to explain various plastic forming methods.
		15th	Plastic forming	Able to explain various plastic forming methods.
		16th	Final exam	

Evaluation Method and Weight (%)						
	midterm/final exam	quiz	portfolio	presentation/attitude	Other	Total
Subtotal	70	0	30	0	0	100
Basic Proficiency	0	0	0	0	0	0
Specialized Proficiency	70	0	30	0	0	100
Cross Area Proficiency	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Heat Transfer Engineering

Course Information

Course Code	1555101	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:4
Textbook and/or Teaching Materials	Heat Transfer Engineering ; Second Edition, Hidenori Tasaka, Morikita Publishing.		
Instructor	Kusano Koji,Nishimoto Koji		

Course Objectives

1. Understand and estimate the basics of heat conduction, heat convection, and heat radiation.
2. Design the heat transfer device.
3. Multidimensional approach to energy use.

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Understand the principles of the three basic forms of heat transfer: heat conduction, heat transfer, and heat radiation, and calculate the amount of heat transferred.	Understand and classify the principles of the three basic forms of heat transfer: heat conduction, heat transfer, and heat radiation.	Can classify the three basic forms of heat transfer. Heat conduction, heat transfer, and heat radiation.
Achievement 2	Understand and implement thermal design and numerical simulation methods for heat transfer device.	Understand and explain thermal design of heat transfer device and numerical simulation methods.	Understand the thermal design of heat transfer device and numerical simulation methods.
Achievement 3	Consider multiple aspects of how to effectively use thermal energy.	Understand the effective use of thermal energy and explain its characteristics.	Understand how to use thermal energy effectively.

Assigned Department Objectives

Teaching Method

Outline	Heat transfer phenomena can be seen from thermal phenomena in nature to heat transfer equipment for domestic and industrial use. This course focuses on various forms of heat transfer phenomena and the problems of heat transfer quantities that occur in such phenomena, and provides knowledge on the thermal design of heat transfer devices and effective methods of heat energy utilization required in the future society, such as the use of renewable heat energy and energy conservation.
Style	Heat transfer engineering is related to thermodynamics and fluid mechanics, as well as other engineering subjects, so students will develop the ability to solve applied problems of heat transfer calculation and thermal design, while learning the outline of related subjects and the principles of various heat transfer forms. In addition, students will learn how to use renewable energy sources, which is necessary for building a sustainable society in the future.[Course hours] : 30H, [self-learning] (preparation, review, report, etc.) : 60H (Two hours preparation and review are necessary to understand the lecture and earn the credit.)
Notice	Heat transfer is caused by physical phenomena. Since these physical phenomena are often expressed mathematically, it is important to understand and take notes during the lecture as much as possible. Please use the notes to review and deepen your understanding of heat transfer engineering.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Heat transfer phenomena around us and the three basic forms of heat transfer	Explain the three basic forms of heat transfer phenomena and their principles.
		2nd	Steady-state heat conduction 1	Calculate the basic equation of heat conduction, heat flow velocity and heat transfer rate.
		3rd	Steady-state heat conduction 2 and Unsteady heat conduction 1	Understand the difference between steady-state and unsteady heat conduction and calculate heat transfer quantities.
		4th	Unsteady heat conduction 2	Calculate temperatures and heat transfer quantities for unsteady heat conduction in two dimensions and complex geometries.
		5th	Overall heat transfer	Understand overall heat transfer and calculate thermal resistance.
		6th	Forced convective heat transfer	Understand the phenomenon of convective heat transfer by forced convection as seen in heat transfer devices and calculate heat transfer rates.
		7th	Natural convective heat transfer	Understand the heat transfer phenomena caused by natural convection, which is often found in natural, and calculate the amount of heat transfer.
		8th	Midterm examination	
	4th Quarter	9th	Radiative heat transfer	Explain the heat transfer phenomena by radiation.
		10th	Heat transfer with phase change and combustion and reaction phenomena	Calculate the heat transfer rate for heat transfer phenomena involving boiling and condensation, as well as combustion and chemical reactions.

		11th	Thermal design and numerical analysis	Design and numerical analysis the simple heat transfer device.
		12th	Thermal energy and resources	Understand the issues surrounding energy and explain the renewable energy.
		13th	Conventional thermal energy systems	Explain conventional thermal energy circulation and energy devices.
		14th	Future thermal energy systems	Understand the effective use of thermal energy and energy conservation in the future, consider how to deal with the situation.
		15th	Final examination	
		16th	Return of examination papers	

Evaluation Method and Weight (%)

	midterm/final exam	quiz	portfolio	presentation/attitude	Other	Total
Subtotal	70	0	30	0	0	100
Basic Proficiency	0	0	0	0	0	0
Specialized Proficiency	70	0	30	0	0	100
Cross Area Proficiency	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Instrumentaion Engineering

Course Information

Course Code	1555102	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	Schematic Well Understood Mechanical Measurement （KYORITSU SHUPPAN CO., LTD.）		
Instructor	Itami Shin		

Course Objectives

1. Able to understand and explain basic knowledge of measurement (International System of Units, measurement terminology, etc.).
2. Able to understand and explain laws and phenomena related to measurement principles.
3. Able to understand and explain the structure, measurement principle, and measurement method of typical mechanical measuring instruments.

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Able to deeply understand and explain basic knowledge of measurement (International System of Units, measurement terminology, etc.).	Able to understand and explain basic knowledge of measurement (International System of Units, measurement terminology, etc.).	Able to explain basic knowledge of measurement (International System of Units, measurement terminology, etc.) while referring to related materials.
Achievement 2	Able to deeply understand and explain laws and phenomena related to measurement principles.	Able to understand and explain laws and phenomena related to measurement principles.	Able to explain laws and phenomena related to measurement principles while referring at related materials.
Achievement 3	Able to deeply understand and explain the structure, measurement principles, and measurement methods of typical mechanical measuring instruments.	Able to understand and explain the structure, measurement principles, and measurement methods of typical mechanical measuring instruments.	Able to explain the structure, measurement principles, and measurement methods of typical mechanical measuring instruments while referring to related materials.

Assigned Department Objectives

Teaching Method

Outline	In this lecture, you will learn basic knowledge about measurement (International System of Units, measurement error, uncertainty, definitions and types of measurement, etc.), structures and principles of various mechanical measuring instruments, measurement methods and characteristics.
Style	Classes are conducted in a classroom style centered on textbooks. Have them look at actual measuring equipment (various sensors, block gauges, radiation thermometers, metal wire resistance thermometers, etc.) as necessary. As this course is academic credit course, you are required to submit report summarizing what prepared and reviewed as pre- and post-learning. 【31 class hours + 60 self-study hours】
Notice	About two reports are planned, but be sure to write in your own words. It is not acceptable to easily copy or reproduce information on the Internet or other people's reports. Reference book: INTRODUCTION MEASUREMENT ENGINEERING 3rd Edition/Revised Edition (Morikita Publishing Co., Ltd.)

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Basic overview of measurements	Able to understand and explain the definition of measurement and measurement engineering.
		2nd	Basic overview of measurements	Able to understand and explain sensors and measurement methods in measurement engineering.
		3rd	Basic overview of measurements	Able to understand and explain measurement methods and measurement terms in measurement engineering.
		4th	Basic overview of measurements	Able to understand and explain the International System of Units and measurement errors.
		5th	Handling of measurement data	Able to understand and explain significant figures and statistical processing of measured data.
		6th	Length measurement	Able to understand and explain the structure, principles, measurement methods and characteristics of various measuring instruments related to length measurement.
		7th	Length measurement	Able to understand and explain the structure, principles, measurement methods and characteristics of various measuring instruments related to length measurement.
		8th	Second semester midterm exam	

	4th Quarter	9th	Angle measurement	Able to understand and explain the structure, principle, measurement method and characteristics of various measuring instruments related to angle measurement.
		10th	Surface measurement	Able to understand and explain the structure, principle, measurement method and characteristics of various measuring instruments related to surface measurement.
		11th	Measurement by coordinates	Able to understand and explain the structure, principles, measurement methods and characteristics of 2D and 3D measuring machines.
		12th	Mass and force measurements	Able to understand and explain the structure, principles, measurement methods and characteristics of various measuring instruments related to mass and force.
		13th	Force and pressure measurements	Able to understand and explain the structure, principle, measurement method and characteristics of various measuring instruments related to force and pressure.
		14th	Density and temperature measurement	Able to understand and explain the structure, principle, measurement method and characteristics of various measuring instruments related to density and temperature.
		15th	Measurement of temperature, humidity, heat, time and vibration	Able to understand and explain the structure, principles, measurement methods and characteristics of various measuring instruments for measuring temperature, humidity, heat, time, and vibration.
		16th	Return of final exam answers for the second semester	

Evaluation Method and Weight (%)

	Midterm/Final exam	Quiz	Portfolio	Presentation/Attitude	Other	Total
Subtotal	65	0	20	15	0	100
Basic Proficiency	25	0	5	0	0	30
Specialized Proficiency	40	0	10	15	0	65
Cross Area Proficiency	0	0	5	0	0	5

Anan College	Year	2024	Course Title	Science of Material Selection

Course Information

Course Code	1555103	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	「材料学・機械系教科書シリーズ６」、コロナ社　/　参考書は授業中に指定する。		
Instructor	Okumoto Yoshihiro		

Course Objectives

１．機械材料として利用されている固体の性質を理解できる。
２．各種材料の科学的選択手法を理解できる。

Rubric

	理想的な到達レベルの目安	標準的な到達レベルの目安	最低限の到達レベルの目安(可)
到達目標1	金属材料、セラミックスおよびプラスチック の特徴と違いを理解し、各種図表を作成して説明できる。	金属材料、セラミックスおよびプラスチック の特徴と違いを理解し、口頭で説明できる。	金属材料、セラミックスおよびプラスチック の特徴と違いを理解できる。
到達目標2	強度設計しようとする部品のモデルを理解し、性能指標の式をたてて、材料選択が正しくできる。	強度設計しようとする部品のモデルを理解し、性能指標の式をたてて、材料選択の準備ができる。	強度設計しようとする部品のモデルを理解し、性能指標の式をたてられる。

Assigned Department Objectives

Teaching Method

Outline	機械技術者は種々の材料の中から最適であると思われる材料を選択しなければならない。機械設計のうちの多くを占める強度設計においても、学習する立場としてはテキストの著者により既に選択されている材料の特性をもとに計算を実行することになる。しかし、その選択の根拠はいったい何か。現代を生きる技術者にとって必須である、「無数の材料の中から科学的に材料を選択する方法」について、その基礎を伝授する。
Style	前半は各種材料についての学習になるので、広く機械材料を知るための調べ物も学習の大事な一部になる。 後半は計算が中心となり、材料力学等の力学系科目の習得を前提としている。【授業時間30時間＋自学自習時間60時間】
Notice	材料に対する知識の平準化をはかるため、前半は鉄鋼材料以外の材料についての講義を行う。また、材料特性等の暗記だけでは材料選択を科学的に行うことはできない。講義では機械構造物の強度設計に必要な知識(加工学および力学系科目で習った知識)を総整理して活用するので、たとえこれらが苦手でも(単位を落としていても)きちんと復習する態度が必要である。

Characteristics of Class / Division in Learning

☑ Active Learning	☐ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	機械材料の性質　ガイダンス	機械材料に求められる特性を理解できる。
		2nd	金属の性質１	金属の腐食と防食について理解できる。
		3rd	金属の性質２	形状記憶合金等特殊金属の特性について理解できる。
		4th	セラミックスの性質１	機械構造部品におけるセラミックスの重要性が理解できる。
		5th	セラミックスの性質２	５大エンジニアリングセラミックの特徴が理解できる。
		6th	プラスチックの性質１	５大汎用プラ・５大エンプラの特性が理解できる。
		7th	プラスチックの性質２	ポリマー・アロイの概念とゴムの特徴が理解できる。
		8th	中間試験	
	4th Quarter	9th	材料選択チャート	材料選択チャートの存在と利用価値を理解できる。
		10th	材料選択チャートの使い方１	性能指標の計算手順が理解できる。
		11th	材料選択チャートの使い方２	材料選択チャートの使い方を理解できる。
		12th	材料選択のケーススタディ１	具体的な課題に対しての材料選択のアプローチを理解できる。
		13th	材料選択のケーススタディ２	具体的な課題に対しての材料選択のアプローチを理解できる。
		14th	材料選択のケーススタディ３	具体的な課題に対しての材料選択のアプローチを理解できる。
		15th	【材料選択】のまとめ	材料選択のアプローチを実践できる。
		16th	期末試験・答案返却	

Evaluation Method and Weight (%)

	定期試験	小テスト	ポートフォリオ	発表・取り組み姿勢	その他	Total
Subtotal	60	30	10	0	0	100
基礎的能力	0	0	0	0	0	0
専門的能力	60	30	10	0	0	100
分野横断的能力	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Electronic Circuits

Course Information

Course Code	1555200	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials	Denshikairogairon (Jikkyo Suppan)		
Instructor	Fujihara Takeshi		

Course Objectives

1. Able to explain the structure and operating principle of semiconductor devices.
2. Able to draw and explain the equivalent circuit of a transistor.
3. Able to design small-signal amplifier circuit using transistors.

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Able to understand and explain the structure and operating principle of semiconductor devices.	Able to explain the structure and operating principle of semiconductor devices.	Able to explain the structure of semiconductor devices.
Achievement 2	calculate the amplification factor using the equivalent circuit of a transistor.	Able to draw equivalent circuits of transistors and explain them.	Able to draw equivalent circuits of transistors.
Achievement 3	Able to design a small-signal amplification circuit with transistors and select the required electronic devices.	Able to design small-signal amplification circuits with transistors.	explain small-signal amplification circuits with transistors.

Assigned Department Objectives

Teaching Method

Outline	The students will learn about the types, structures, and principles of operation of semiconductor devices necessary for designing electronic circuits. And, Students will also learn about amplification circuits using semiconductor devices.
Style	The course will be taught not only in a lecture format, but also through a combination of flipped lectures, exercises, and experiments as needed. This course is a credit course, so students are required to submit a report as homework. 【30 hours of class time + 60 hours of self-study】
Notice	The class will be based on the knowledge of electric circuits and electromagnetism. Please study the necessary knowledge in advance.

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Electronic Circuit Elements	Understanding Semiconductors.
		2nd	Electronic Circuit Elements	Understanding Semiconductors.
		3rd	Electronic Circuit Elements	Understand the basic operation of diodes.
		4th	Electronic Circuit Elements	Understand the basic operation of diodes.
		5th	Electronic Circuit Elements	Understand the basic operation of transistors.
		6th	Electronic Circuit Elements	Understand the basic operation of transistors.
		7th	Electronic Circuit Elements	Understand the types and characteristics of FETs and other semiconductor devices.
		8th	Electronic Circuit Elements	Understand the manufacturing methods and features of integrated circuits.
	2nd Quarter	9th	【Midterm exam】	
		10th	Fundamentals of Amplifier Circuits	Understand the principles of amplification circuits.
		11th	Fundamentals of Amplifier Circuits	Understand bias circuits for transistors.
		12th	Fundamentals of Amplifier Circuits	Understand the basic characteristics of small-signal amplification circuits.
		13th	Fundamentals of Amplifier Circuits	Understand the basic characteristics of small-signal amplification circuits with transistors.
		14th	Fundamentals of Amplifier Circuits	Understand the basic characteristics of small-signal amplification circuits with transistors.
		15th	Fundamentals of Amplifier Circuits	Understand the basic characteristics of small-signal amplification circuits with FETs.
		16th	【Final exam】	

Evaluation Method and Weight (%)

	Midterm/final exam	Quiz	Portfolio	Presentation/attitude	Other	Total
Subtotal	60	0	40	0	0	100
Basic Proficiency	10	0	10	0	0	20

Specialized Proficiency	50	0	30	0	0	80
Cross Area Proficiency	0	0	0	0	0	0

Anan College	Year	2024	Course Title	LED Technology

Course Information

Course Code	1555203	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	Handouts / None		
Instructor	Hasegawa Tatsuo		

Course Objectives

1. Able to explain the history of LED development, features and performance, market size, etc.
2. Able to calculate the energy saving effect by selecting and introducing appropriate LED lighting.
3. Able to explain the electrical and optical characteristics of LEDs.
4. Able to explain the LED current control method.
5. Able to explain the visual characteristics of the human eye, new applications for lighting, and applications for displays.
6. Able to explain the application to plant cultivation, environmental purification by photocatalyst, insect repellent / fish collection lamp, and sterilization.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Able to explain all the history, characteristics, market size, etc. of LED development.	Able to provide standard explanations on the history, characteristics, market size, etc. of LED development.	Able to give a basic explanation about the history, characteristics, market size, etc. of LED development.
Achievement 2	Able to calculate the energy saving effect by selecting and introducing appropriate LED lighting.	Able to select the appropriate LED lighting or calculate the energy saving effect by introducing it.	Able to perform basic calculations to obtain the energy saving effect by selecting and introducing appropriate LED lighting.
Achievement 3	Able to explain both the electrical and optical characteristics of LEDs.	Able to explain either the electrical or optical characteristics of LEDs.	Able to explain the basics of the electrical and optical characteristics of LEDs.
Achievement 4	Able to explain all four LED current control methods.	Able to explain two methods of controlling the four currents of LEDs.	Able to explain one of the four LED current control methods.
Achievement 5	Able to explain all the visual characteristics of the human eye, new examples of applications for lighting, and applications for displays.	Able to explain two things about the visual characteristics of the human eye, new examples of applications for lighting, and applications for displays.	Able to explain one of the visual characteristics of the human eye, new applications for lighting, and applications for displays.
Achievement 6	Able to explain all about plant cultivation, environmental purification by photocatalyst, insect repellent / fish collection lamp, and application to sterilization.	Able to explain two things about plant cultivation, environmental purification by photocatalyst, insect repellent / fish collection lamp, and application to sterilization.	Able to explain one application to plant cultivation, environmental purification by photocatalyst, insect repellent / fish collection lamp, and sterilization.

Assigned Department Objectives

Teaching Method

Outline	You will learn about light emitting diodes (LEDs), whose applications are expanding in various fields such as lighting, agriculture, environment, and medical care because of their low power consumption and long life among semiconductor devices. The purpose of this lecture is to deepen the understanding by learning about field effect transistors, various characteristics related to LEDs, current control methods, and actual application examples.
Style	Classes will be conducted in a lecture format using PowerPoint and handouts. Please submit the assignments related to the content of the lecture as they will be given each time. [Class time 30 hours + self-study time 60 hours]
Notice	As a sub-specialty course, lectures will be given so that students do not need advanced expertise in the field of electrical and electronic engineering to understand the course.

Characteristics of Class / Division in Learning

☐ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	LED overview	Able to explain the history of LED development, features and performance, market size, etc.
		2nd	Energy saving effect by LED	Able to calculate the energy saving effect when changing the lighting from the conventional light source to LED.
		3rd	LED characteristics 1	Able to explain the emission spectrum of LEDs, voltage-current characteristics and their temperature dependence.
		4th	LED characteristics 2	Able to explain LED ambient temperature-forward current characteristics, allowable forward current duty ratio dependence, luminosity temperature dependence, and luminosity forward current characteristics.

		5th	Current control method 1	Regarding the current control method by resistance, able to explain the method for calculating the resistance value and the method of obtaining the LED voltage and current from the load line.
		6th	Current control method 1	Able to explain the power resistance calculation of resistance, the influence of lead wire resistance, and the selection method of conductor and power supply to be used.
		7th	Current control method 1	Able to explain how to connect multiple LEDs (series, parallel, series-parallel).
		8th	First term midterm exam	
	4th Quarter	9th	Current control method 2	Able to explain the current control method using a current regulative diode (CRD).
		10th	Current control method 3	Able to explain the current control method using a three-terminal regulator.
		11th	Current control method 4	Able to explain the current control method using an operational amplifier.
		12th	LED application example 1	Able to explain the visual characteristics of the human eye and new applications to lighting (visible light communication, intelligent lighting, etc.)
		13th	LED application example 2	Able to explain specific application examples to displays.
		14th	LED application example 3	Able to explain specific application examples such as plant cultivation and environmental purification by photocatalyst.
		15th	LED application example 4	Able to explain specific application examples such as insect repellent / fish collection lamp and sterilization by ultraviolet LED.
		16th	Last term exam, exam return	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	20	0	0	100	200
Basic Proficiency	20	0	5	0	0	25	50
Specialized Proficiency	60	0	15	0	0	75	150
Cross Area Proficiency	0	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Electrical and Electronic Drawing

Course Information

Course Code	1555204	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	Hand out the textbooks each time.		
Instructor	Kamano Masaru		

Course Objectives

1. be able to create an entity wiring diagram from a schematic diagram. 2.
2. explain the symbols and roles of typical electrical and electronic circuit elements. 3.
3. to be able to draw a circuit diagram of a lighting circuit using LEDs. 4. to be able to draw a circuit diagram using transistors.
To be able to draw a circuit diagram using transistors. 5.
5. to convert a single-wire diagram to a double-wire diagram for electrical wiring diagrams.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Can read a description of circuit operation and create a complex circuit diagram.	Be able to read descriptions of circuit operation and create basic circuit diagrams.	Able to create entity wiring diagrams from schematics.
Achievement 2	Be able to explain the correct use of typical electrical and electronic circuit elements.	Be able to explain the symbols and roles of typical electrical and electronic circuit elements.	To be able to explain the names of typical electrical and electronic circuit elements.
Achievement 3	To be able to calculate the value of current limiting resistors for LED lighting.	To be able to draw a circuit diagram of a lighting circuit using LEDs.	To be able to explain the role and operation of LEDs.
Achievement 4	Can calculate the current amplification factor of a circuit using transistors.	To be able to draw a circuit diagram using transistors.	To be able to explain the principle and role of transistors.
Achievement 5	Can convert a single-line diagram to a double-line diagram, including three-circuit switches and pilot lamps.	To be able to convert a single-wire diagram to a double-wire diagram for electrical wiring diagrams.	To be able to explain the operation of indoor wiring circuits written in single-wire diagrams.

Assigned Department Objectives

Teaching Method

Outline	As engineers, students will learn about the means of accurately communicating their own creations to others in the form of drawings. In addition, students will learn the schematics and symbols of typical circuits studied in the electrical course, as well as the roles of simple electronic elements. Furthermore, the course aims to provide students with the basic knowledge of single-wire wiring diagrams and double-wire wiring diagrams that they will need as electrical engineers.
Style	Emphasis will be placed on preparation before class, and students will mainly answer exercises in class. Quizzes will be given to confirm the content of the preparatory work. Review and developmental assignments will be given to encourage independent study after class. Since this class is a flipped learning style, preparation before class is very important. In addition, since the class will be conducted in a group-based learning style, students are expected to be active in group activities.
Notice	The course is closely related to electrical and electronic circuit theory and uses a lot of specialized terminology. In addition, there may be overlaps with what you have learned in design drafting. During the lecture, we will try to explain as much as possible, but please be prepared to actively ask questions on the spot if there is not enough explanation.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☑ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Fundamentals of Drafting	Explain the role of drafting
		2nd	Circuit Design	Be able to draw schematics
		3rd	Lighting circuits	Can design and draft a circuit to turn on an LED
		4th	Variable voltage circuits	Can design and draft circuits for variable voltage
		5th	Capacitor Circuit	To design and draft circuits using capacitors
		6th	Transistor circuits	To design and draw switching circuits using transistors
		7th	Circuit and entity wiring diagrams	To be able to convert between circuit diagrams and entity wiring diagrams
		8th	Intermediate test	
	4th Quarter	9th	Magnetic field generator circuit	To design and draft circuits using magnetic field generation by coils
		10th	Demodulation Circuit	To be able to design and draw AM radio circuits
		11th	Motor circuits	Describe the types of motors and design and draft a drive circuit for a DC motor.
		12th	Logic circuits	To be able to design and draw digital circuits using logic gate elements.

		13th	Indoor wiring circuit	To be able to explain the method of converting a single-line diagram to a double-line diagram.
		14th	Pilot Lamp Circuit	To be able to convert a single line diagram of a pilot lamp circuit to a double line diagram.
		15th	Three-way Switch Circuit	Convert a single-line diagram of a three-way switch circuit to a double-line diagram.
		16th	End-of-term examination	

Evaluation Method and Weight (%)

	Examination	issue	Mutual Evaluations between students	Behavior	Total
Subtotal	60	40	0	0	100
Basic Proficiency	10	10	0	0	20
Specialized Proficiency	50	30	0	0	80
Cross Area Proficiency	0	0	0	0	0

Anan College	Year	2024	Course Title	Computer Programming

Course Information

Course Code	1555300	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials	Prepared prints / slides		
Instructor	Fukuda Koji		

Course Objectives

1.We can understand Java language of fundamental syntax, and make the fundamental programs.
2.We can understand Java language syntax about "method", and make the program using methods.
3.We can understand about "class" in Java language, write the fundamental declaration of class.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	We can create applications using fundamental knowledges of Java language.	We can understand about "array" and "multi-loop", and make the programs using these knowledges.	We can not understand fundamental syntax of Java language, and can not make simple programs.
Achievement 2	We can create structured applications using methods.	We can understand about "method", and make the program using method.	We can not understand about syntax of "method", and can not make simple program using method knowledges.
Achievement 3	We can create object oriented applications using class.	We can understand about "class", and make the program using class.	We can not understand about fundamental syntax of "class", and can not write the class declaration code.

Assigned Department Objectives

Teaching Method

Outline	In every courses except information course, don't learn about object-oriented programming. In this subject, we learn basic syntax and "class" of Java language. And we will understand concept of object-oriented programming through learning of "class" .
Style	1.In the first part of the class, explain the content to be learned and Java syntax. 2.Next, present some simple and basic programming tasks. Most programs can be made during class. You must submit the programs you made by uploading them. 3.Additional tasks are prepared. Some of these tasks will be homeworks.
Notice	Please submit all programming tasks. Most programming tasks are simple and can be completed in a short amount of time if you understand the target syntax.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Programming environment	We can make the environment of Java programming.
		2nd	Basic format of java program	We can make and execute the simplest java program.
		3rd	Variables	We can understand type of variable, and make the program using variables.
		4th	Operators	We can understand various operators, and make the program using operators.
		5th	If-statement (1)	We can understand syntax of "if statement", and make the program using if-statement.
		6th	If-statement (2)	We can understand some styles of if- statement, and make the program using any styles of if-statement.
		7th	Loop (while, for)	We can understand syntax of "while and for statement", and make the loop process program using these statements.
		8th	Review	We can make the program using learned knowledges.
	2nd Quarter	9th	Loop (do-while, break and continue)	We can understand "do-while" and flow control statements, and make the program using flow control statements in the loop process.
		10th	Array	We can understand concept and syntax of "array", and make the program using array.
		11th	Method (1)	We can understand concept and syntax of "method", and make the simple program using method.
		12th	Method (2)	We can understand variations of "method" definition method, and make the program using some methods own defined.

		13th	Basics of Class (1)	We can understand concept and fundamental syntax of "class", and declare class correctly.
		14th	Basics of Class (2)	We can understand the concept of object-oriented programming, and make the simple program based on object-oriented programming.
		15th	Review	We can make the program using learned knowledges.
		16th	Explanation of the examination	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	50	20	0	0	30	0	100
Basic Proficiency	40	5	0	0	20	0	65
Specialized Proficiency	10	5	0	0	10	0	25
Cross Area Proficiency	0	10	0	0	0	0	10

Anan College	Year	2024	Course Title	Numerical Computation

Course Information

Course Code	1555301	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	C to Java Demanabu Suchi Simulation Nyumon, Morikita Shuppan		
Instructor	Sugino Ryuzaburo		

Course Objectives

1. We can understand properties of the numerical errors, and compute of its basic computation.
2. We can understand the numerical methods for nonlinear equation, and create of its basic algorithms.
3. We can understand the numerical methods for linear systems, and create of its basic algorithms.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	We can understand the concepts of set and logic, and compute of its fundamental problems and apply these for the various problems.	We can understand the concepts of set and logic, and compute of its fundamental problems.	We can understand the concepts of set and logic, and compute of its elementary statistic processes.
Achievement 2	We can understand the concepts of set and mapping, and compute of its fundamental problems and Bay's estimation and apply these for the various problems.	We can understand the concepts of set and mapping, and compute of its fundamental problems.	We can understand the concepts of set and mapping, and compute of its fundamental problems.
Achievement 3	We can understand the characteristics of relation and order, and compute of its fundamental problems and apply these for the various problems.	We can understand the characteristics of relation and order, and compute of its fundamental problems.	We can understand the characteristics of relation and order, and compute of elementary probability distributions.

Assigned Department Objectives

Teaching Method

Outline	We are to make a concentration for our class and use the knowledges and techniques about basic mathematics to construction of understanding of the numerical method for the nonlinear equations and the linear systems.
Style	Our class is construction of the next three phases. 1. Review the important facts from the previous class. 2. Lecture about the new section. 3. Short exercises.
Notice	Please make a good preparation and self-review. You will build up the good style to do homework of the previous class.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	How to make an algorithm for numerical method	We can understand and explain approximate values and its errors.
		2nd	Numerical errors and representation of numbers	We can understand and explain floating point computation and its evaluation of errors.
		3rd	Method for nonlinear equations	We can understand the iterative method and explain its algorithm.
		4th	Method for nonlinear equations	We can understand the gradient method and explain its algorithm.
		5th	Method for simultaneous equations	We can understand the direct method and explain its algorithm.
		6th	Method for simultaneous equations	We can understand the iterative method and explain its algorithm.
		7th	Method for simultaneous equations	We can understand the gradient method and explain its algorithm.
		8th	Method for eigen value problems	We can understand the power method and explain its algorithm.
	4th Quarter	9th	Mid-term examination	
		10th	Approximation of the functions	We can understand the polynomial approximation and explain its computation.
		11th	Approximation of the functions	We can understand the interpolation method and explain its computation.
		12th	Numerical differentiations	We can understand the formulae for finite difference and explain its computation.
		13th	Numerical integrations	We can understand Newton Cotes method and explain its computation.

		14th	Method for differential equations	We can understand explicit and implicit solution method and explain its computation.
		15th	Final examination	
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	0	0	0
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Information Communication Network

Course Information

Course Code	1555302	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	ネットワークの基本(翔泳社),「高学年向け情報セキュリティ」教材（PPT）		
Instructor	Tanaka Tatsuji,Hirayama Motoi		

Course Objectives

1. OSI参照モデルについて説明できる。
2. TCP/IPについて説明できる。
3. IPアドレスとMACアドレスについて説明できる。
4. WANの構成と通信機器について説明できる。
5. セキュリティに関する知識である暗号化伝送方式を説明できる。

Rubric

	理想的な到達レベルの目安	標準的な到達レベルの目安	未到達レベルの目安
評価項目1	WANを通じてOSI参照モデル各層の関係を説明できる。	OSI参照モデル各層個別の働きを説明できる。	OSI参照モデルの意味が理解できない。
評価項目2	TCP/IPプロトコルの必要性・有用性を説明できる。	OSI参照モデルとTCP/IPの関係を説明できる。	TCP/IPの意味を理解できない。
評価項目3	サブネットマスクを利用したグループやホストの数を計算できる。	IPアドレスの構造、ローカルアドレス、プライベートアドレスについて説明できる。	IPアドレスとMACアドレスの違いが説明できない。
評価項目4	通信回線の性能を評価できる。	LAN,WANの通信機器を列挙できる。	WANとLANの違いが説明できない。
評価項目5	秘密保護や改ざん防止対策の例を挙げ、その説明できる。	セキュリティに関して不正行為のいくつかを説明できる。	セキュリティについてその必要性を説明できない。

Assigned Department Objectives

Teaching Method

Outline	現在、情報ネットワーク技術は社会基盤のひとつであり、そのための情報技術者の育成は必要である。本科目はコンピュータネットワークに関するOSI参照モデルとTCP/IPプロトコル、LANとWAN、インターネット、ネットワークセキュリティ等に関する知識と技術の習得に向けた内容となっている。本授業を通じて情報ネットワーク技術者としての基本的な知識・技術を身に付けることで、ICT社会で活躍し貢献できる人材の育成を目的とする。この科目は企業でコンピュータシステムのシステムインテグレーションを担当していた教員が、その経験を活かし、通信ネットワークの種類、特性、最新の業務への適応法等について講義形式で授業を行うものである。
Style	基本情報処理試験およびソフトウエア開発技術者試験を意識した講義を行います。授業はプロジェクタを使用して進行します。ノートは必ず取る習慣をつけてください。
Notice	また成績評価に授業中実施する小テストを実施しその成績結果を加味する。

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☑ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	プロトコル	OSI参照モデルについて説明できる。
		2nd	ネットワーク	IPアドレスの構造とWANやLANの概要について説明できる。
		3rd	ネットワーク・サーバ	主要なサーバの概要を説明できる。
		4th	通信の仕組みと規格	通信の仕組みと規格について説明できる。
		5th	クライアント・セキュリティ	クライアントが遭遇する代表的な脅威について説明できる。
		6th	ネットワーク・セキュリティ	ネットワークに存在する代表的な脅威について説明できる。
		7th	オンプレミスとクラウド【外部講師】	オンプレミスとクラウドの長所と短所について説明できる。
		8th	【中間試験】	
	4th Quarter	9th	サーバとスイッチ【外部講師】	ネットワークを構成するコンポーネントの基本的な設定内容について説明できる。
		10th	VPCルータ（ルータとFW）【外部講師】	基本的なルーティング技術やフィルタリング技術について説明できる。
		11th	ロードバランサ【外部講師】	ロードバランサの仕組みと役割について説明できる。
		12th	DBアプライアンス【外部講師】	主要なDBアプライアンスの特徴について説明できる。
		13th	ウェブアクセラレータ（CDN）【外部講師】	CDNの仕組みと役割について説明できる。
		14th	バックアップと監視、オートスケール【外部講師】	バックアップや監視、スケーラビリティの重要性について説明できる。
		15th	Webアプリケーション基盤開発【外部講師】	情報通信ネットワークを利用したアプリケーションの作成方法を説明できる。
		16th	【答案返却】	

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	60	0	0	0	0	40	100
基礎的能力	30	0	0	0	0	20	50
専門的能力	20	0	0	0	0	10	30
分野横断的能力	10	0	0	0	0	10	20

Anan College	Year	2024	Course Title	Information Theory

Course Information

Course Code	1555304	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	Zukai Jouhou-riron nyumon (Corona Pub., In Japanese)		
Instructor	Hirayama Motoi		

Course Objectives

1. Understand probability theory and stochastic processes, and calculate the probabilities of various cases.
2. Understand information theory and be able to compare the amount of information using entropy, mutual information, etc.
3. Able to mathematically analyze statistical data and find characteristic figures.

Rubric

	Ideal Level	Standard Level	Minimal Level
Achievement 1	Enable to calculate probabilities of various cases, and apply to problem solving.	Enable to calculate probabilities of various cases.	Enable to perform basic calculations probabilities of various cases.
Achievement 2	Enable to compare the amount of information using entropy, mutual information, etc, and apply to problem solving.	Enable to compare the amount of information using entropy, mutual information, etc.	Enable to calculate the amount of information using entropy, mutual information, etc.
Achievement 3	Enable to model communication channels, to explain coding method, and apply them to problem solving.	Enable to model communication channels, to explain coding method.	Enable to model communication channels.

Assigned Department Objectives

Teaching Method

Outline	Based on the basic knowledge of mathematics and physics and knowledge of specialized fields of information learned up to the third grade, students will learn the theory necessary for engineering problem solving in information science through exercises.
Style	Basically follow the textbook. Deepen your understanding through exercises in self-study.
Notice	

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Basics of probability theory	Enable to explain definition of probability
		2nd	Basics of probability theory	Enable to calculate basic statistics such as average, variance, etc.
		3rd	Basics of probability theory	Enable to calculate conditional probabilities and to understand Markov processes and descrive them in state diagrams.
		4th	Basics of information theory	Enable to explain amount and source of information.
		5th	Basics of information theory	Enable to calculate limit distribution of information sources.
		6th	Basics of information theory	Enable to calculate entropy of information source.
		7th	Basics of information theory	Enable to calculate mutual information.
		8th	Mid-term examination	Enable to model various communication channels.
	4th Quarter	9th	Basics of communication channel	Enable to model various communication channels.
		10th	Basics of communication channel	Enable to model various communication channels.
		11th	Basics of communication channel	Enable to explain encoding methods for various communication channels.
		12th	Communication channel encoding	Enable to explain encoding methods for various communication channels.
		13th	Communication channel encoding	Enable to explain encoding methods for various communication channels.
		14th	Communication channel encoding	Enable to explain encoding methods for various communication channels.
		15th	Communication channel encoding	Enable to explain encoding methods for various communication channels.
		16th	Final examination	

Evaluation Method and Weight (%)

	Examination	Portfolio	Total
Subtotal	70	30	100
Basic Proficiency	40	20	60

Specialized Proficiency	30	10	40
Cross Area Proficiency	0	0	0

Anan College	Year	2024	Course Title	Constructional Materials

Course Information

Course Code	1555402	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials			
Instructor	Kadono Takuma		

Course Objectives

1. Able to understand the classification, basic properties and standards of construction materials in general. And able to explain thire basic matters.
2. Able to understand the types, basic properties and characteristics of concrete. And able to explain thire basic matters.
3. Able to understand the classification, basic properties and standards of iron and steel, asphalt, polymer and timber. And able to explain thire basic matters.

Rubric

	Idea level of Attainment	Standard level of attainment	Minmum level of attainment
Attainment Target 1	Able to understand and explain the classification, standards and basic properties of construction materials with accuracy.	Able to understand and explain the classification, standards and basic properties of construction materials	Able to explain the classification, standards and basic properties of construction materials
Attainment Target 2	Able to understand and explain the types and characteristics of concrete (cement, aggregates, admixture materials, etc.) with accuracy. And able to raise issues and propose applications.	Able to understand and explain the types and characteristics of concrete (cement, aggregates, admixture materials, etc.).	Able to explain the types and characteristics of concrete (cement, aggregates, admixture materials, etc.).
Attainment Target 3	Able to understand and explain the types and characteristics of iron and steel, asphalt, polymer and timber with accuracy. And able to raise issues and propose applications.	Able to understand and explain the types and characteristics of iron and steel, asphalt, polymer and timber.	Able to explain the types and characteristics of iron and steel, asphalt, polymer and timber.

Assigned Department Objectives

Teaching Method

Outline	Engineers who design, construct and maintain structures that require the safety, serviceability and restorability need to acquire knowledge of construction materials. In the practice, it is needed to use construction materials according to the social demand, and consider the functionality and economically. This course is lecture-based classroom learning. The goal of this course is to obtain basic knowledge on main materials that is used construction projects, and enhance study habits.
Style	【Cource hours 31hours＋Final Exam＋Self-study hours 60hours】 Reports are required as pre-study and post-study, because this course is an academic credit course.
Notice	This course that is established as sub-major course of common to the department is important course of civil engineering that is obtained fundamental knowledge of construction materials. In order to learn about the wide variety of construction materials used in the infrastructure, it is important not to memorize individual items in isolation, but to relate them to the infrastructures that are around us. In addition, many of the matters are related to mechanics, electricity and chemistry, which will hopefully lead to the future.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Civil Engineering Structures and Construction Materials	Able to understand the classification and basic properties of construction materials, and their relation to the civil engineering structures. And, able to explain their basic matters.
		2nd	Civil Engineering Structures and Construction Materials	Able to understand the classification and basic properties of construction materials, and their relation to the civil engineering structures. And, able to explain their basic matters.
		3rd	Basic Properties of Concrete	Able to understand the basic properties of concrete, and able to explain their basic matters.
		4th	Mechanical Properties of Concrete and its Characteristics	Able to understand mechanical properties of concrete and their characteristics, and able to explain their basic matters.
		5th	Mechanical Properties of Concrete and its Characteristics	Able to understand mechanical properties of concrete and thier characteristics, and able to explain their basic matters.
		6th	Performance of Concrete and Mix Design	Able to understand the performance of concrete and method of mix design. And the able to explain their basic matters.
		7th	Performance of Concrete and Mix Design	Able to understand the performance of concrete and method of mix design. And able to explain their basic matters.
		8th	Midterm Exam	

	4th Quarter	9th	Review of Midterm Exam Properties of Iron and Steel, and its characteristics	Able to understand the types, the chrematistics and the standard of iron and steel. And able to explain their basic matters.
		10th	Properties of Iron and Steel, and its characteristics	Able to understand the types, the chrematistics and the standard of iron and steel. And able to explain their basic matters.
		11th	Properties of Asphalt, and its characteristics	Able to understand the types, the chrematistics and the standard of asphalt. And able to explain their basic matters.
		12th	Properties of Asphalt, and its characteristics	Able to understand the types, the chrematistics and the standard of asphalt. And able to explain their basic matters.
		13th	Properties of Porymer Materials, and its characteristics	Able to understand the types, the chrematistics and the standard of porymer materials. And able to explain their basic matters.
		14th	Properties of Porymer Materials, and its characteristics	Able to understand the types, the chrematistics and the standard of porymer materials. And able to explain their basic matters.
		15th	Properties of Timber and Stone, and its characteristics	Able to uderstand the types, the chrematistics and the standard of timber and stone. And able to explain their basic matters.
		16th	（Final Exam）Review of Final Exam	

Evaluation Method and Weight (%)

	Regular Exam	Short Test	Portfolio	Presentation and Enthusiasm	Others	Total
Subtotal	70	0	30	0	0	100
Basic competence	20	0	10	0	0	30
Profeesional competence	30	0	10	0	0	40
Cross-sectoral competence	20	0	10	0	0	30

Anan College	Year	2024	Course Title	Structural Engineering

Course Information

Course Code	1555404	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	Isohata Hiroshi : Zukai Nyumon Yokuwakaru Saishin "Hashi" no Kagaku to Gijutsu(Shuwa System)		
Instructor	Moriyama Takuro		

Course Objectives

1. Able to explain the characteristics of major bridges in Japan and overseas.
2. Able to explain the structural form of the bridges and the mechanism of each part.
3. Able to explain the design methods of bridges.
4. Able to explain the various technologies that support bridges.

Rubric

	Ideal Level	Standard Level	Minimum Level
Achievement 1	Able to explain in detail the characteristics of various bridges in Japan and abroad.	Able to explain most of the characteristics of major bridges in Japan and overseas.	Able to explain only the basics of the characteristics of major bridges in Japan and abroad.
Achievement 2	Able to explain in detail the structural form of the bridge and the mechanism of each part.	Able to explain the structural form of the bridge and the mechanism of each part.	Able to explain only the basics of the structural form of the bridge and the mechanism of each part.
Achievement 3	Able to explain the design methods of bridges in detail.	Able to explain most of the design methods of bridges in detail.	Able to explain only the basics of the design methods of bridges.
Achievement 4	Able to explain in detail the various technologies that support bridges.	Able to explain most of the various technologies that support the bridge.	Able to explain only the basics of the technology that supports the bridge.

Assigned Department Objectives

Teaching Method

Outline	Structural engineering is a discipline necessary for designing structures such as bridges and buildings using theories based on structural mechanics, and is an important concept in both civil engineering and architecture. In this lecture, we will explain the basic knowledge of bridges, which are familiar among structures, such as types of structures, design methods, and related technologies. Rather than making detailed calculations of bridge design all of a sudden, we hope that students will be interested in the structure of bridges, so the first half will mainly provide an overview of the various bridge structures with photographs, and the second half will explain the method of bridge design and the related technologies.
Style	This lecture will be based on textbooks using slides, but some contents that are not covered in textbooks will be explained. In that case, additional materials will be distributed. If necessary, special lectures and tours may be included by companies that are actually designing bridges. Since this course is a credit course, you will be given a self-study assignment each time that serves as a review of the class. [30 hours of class time + 60 hours of self-study time]
Notice	In this lecture, we will focus on basic knowledge about the structure of bridges. Self-study assignments must be submitted by the deadline using the prescribed form. As a general rule, assignments are given every time, so if you miss a class, please come to pick up the assignment form as soon as possible. In the case of special absences, the submission deadline will be extended, but if the submission is submitted late for no special reason, it will not be subject to evaluation. I hope that students will have a good understanding of the basics of structure and design methods of bridges and related technologies that they have learned in this course, and that they will further develop their application skills in the next year's lecture on Structural Engineering 2.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	1. Abstracts of bridges	Able to explain the abstracts of bridges.
		2nd	2. Types of bridges	Able to explain the types and characteristics of bridges in the prefecture.
		3rd	2. Types of bridges	Able to explain the types and characteristics of bridges in Japan.
		4th	2. Types of bridges	Able to explain the types and characteristics of bridges overseas.
		5th	3. Structural form and the mechanism of the bridges	Able to explain the structural form of the bridges and the mechanism of each part.
		6th	3. Structural form and the mechanism of the bridges	Able to explain the structural form of the bridges and the mechanism of each part.
		7th	3. Structural form and the mechanism of the bridges	Able to explain the structural form of the bridges and the mechanism of each part.
		8th	【Midterm examination】	
	4th Quarter	9th	4. Mechanics of bridges	Able to explain the theory of structural mechanics that support bridges.
		10th	5. Design of bridges	Able to explain the materials used for bridges and the loads to be considered for bridge design.

		11th	5．Design of bridges	Able to explain the design methods of bridges.
		12th	6．Technologies of bridges	Able to explain the techniques required for the construction of bridges, such as joining members.
		13th	6．Technologies of bridges	Able to explain the construction methods for constructing bridges.
		14th	6．Technologies of bridges	Able to explain the basics of earthquake resistance technologies for bridges.
		15th	6．Technologies of bridges	Able to explain the basics of deterioration and maintenance of bridges.
		16th	【Final examination】	

Evaluation Method and Weight (%)

	midterm/final exam	quiz	portfolio	presentation/attitude	other	Total
Subtotal	70	0	30	0	0	100
Basic Proficiency	35	0	15	0	0	50
Specialized Proficiency	35	0	15	0	0	50
Cross Area Proficiency	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Introduction of Architectural Planning

Course Information

Course Code	1555405	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials	The teacher distributes document, videos		
Instructor	Tada Yutaka		

Course Objectives

1. Learn how to build a disaster-resistant house
Know how to build an economically sound house
3. To be able to explain how to build a disaster-resistant house considering economic efficiency

Rubric

	Ideal Level	Standard Level	Minimum Level
Course Objective 1	Can explain at least 5 different ways of living around the world	Can explain at least 3 different ways of living around the world	Can explain at least one different way of living around the world
Course Objective 2	Can explain how to build a house with at least 5 economic considerations	Can explain how to build a house with at least 3 economic considerations	Can explain how to build a house with an economic consideration
Course Objective 3	Explain how to build a disaster-resistant house with economic considerations using at least 5 examples	Explain how to build a disaster-resistant house with economic considerations using at least 3 examples	Explain how to build a disaster-resistant house with economic considerations using at least a example

Assigned Department Objectives

Teaching Method

Outline	Students will learn how to build a disaster-resistant home that is economically sound and how to properly communicate these methods.
Style	Group work and computer-based exercises will be conducted
Notice	

Characteristics of Class / Division in Learning

☑ Active Learning	☑ Aided by ICT	☐ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation (how to generate ideas)	Learn evolutionary thinking as a way of generating ideas
		2nd	how to generate ideas	Learn evolutionary thinking as a way of generating ideas
		3rd	Characteristics of earthquake damage and countermeasures	Explain the characteristics of earthquake damage and countermeasures
		4th	Characteristics of tsunami damage and countermeasures	Explain the characteristics of tsunami damage and countermeasures
		5th	Rebuilding the lives of disaster victims	Explain the characteristics of flood damage and countermeasures
		6th	Rebuilding the Lives of Survivors	Explain the types and processes of rebuilding the lives of disaster victims
		7th	Let's find safe land.	Can create your own hazard maps using QGIS
		8th	Let's find safe land.	Can create your own hazard maps using QGIS
	2nd Quarter	9th	Let's find safe land.	Can create your own hazard maps using QGIS
		10th	Let's design a safe house!	Able to perform seismic design using wallstat
		11th	Let's design a safe house!	Able to perform seismic design using wallstat
		12th	Presentation Preparation	Prepare a presentation
		13th	Presentation Preparation	Prepare a presentation
		14th	Presentation Preparation	Prepare a presentation
		15th	Presentation	Presentations will be given on how to build a disaster-resistant home that is economically viable.
		16th		

Evaluation Method and Weight (%)

	Final Presentation	Weekly Presentation	exercises	Portfolio	Other	Total
Subtotal	0	0	75	25	0	100
Basic Proficiency	0	0	20	10	0	30
Specialized Proficiency	0	0	20	5	0	25

Cross Area Proficiency	0	0	35	10	0	45

Anan College	Year	2024	Course Title	Inorganic Materials

Course Information

Course Code	1555502	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	Second Semester	Classes per Week	後期:2
Textbook and/or Teaching Materials	Textbook : None、Reference book : 足立吟也・南努「現代無機材料科学」 化学同人、(社)日本セラミックス協会「これだけは知っておきたいファインセラミックスのすべて」日刊工業新聞社		
Instructor	Konishi Tomoya		

Course Objectives

1. To understand how to obtain materials from substances and explain the role of materials in society.
2. To explain the characteristics of various inorganic materials and the principles of their development.
3. To explain the functionality of various inorganic materials and the processing methods to realize it.
4. To discuss energy issues and explain the utilization of inorganic materials to solve them.
5. To propose the development and utilization of new materials.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Explains, with specific examples, the structure given to a material and the functionality.	Explains that materials are obtained by processing substances to give them form.	Cannot explain the difference between a substance and a material.
Achievement 2	Explains how to improve the functionality of various inorganic materials.	Explains the structure and functionality of various inorganic materials.	Cannot give specific examples of the types of inorganic materials and their functionality.
Achievement 3	Proposes how to solve social problems from the viewpoint of materials and how inorganic materials are potentially used to achieve these solutions.	Explains how to solve social problems from the viewpoint of materials and how inorganic materials are potentially used to achieve these solutions.	Cannot explain how to solve social problems from the viewpoint of materials and how to develop materials to realize them.

Assigned Department Objectives

Teaching Method

Outline	Inorganic materials, such as ceramics, have a wide variety of advantages and functionalities and are widely used in our daily lives. In this lecture, we will focus on the morphology of inorganic materials, explore the origin of such advantages and functionality, and learn about cutting-edge applications. Since the functionality of materials is closely related to the processing methods that impart form, some of the topics covered in "Materials Processing" will also be included. The goal of this course is to provide students with the basic knowledge and skills to become practical engineers, while considering how to apply their previous knowledge in examining the functionality and utilization of inorganic materials.
Style	The lecture will be given mainly using slides and writable worksheets, so there is no need to prepare notes or other materials. The lecture will be conducted by showing actual cases and concrete examples as much as possible. 【30 hrs of class time + 60 hrs of self-study】
Notice	This course is a subject corresponding to the sub-major, and students will use the basic knowledge and concepts learned in chemistry, physics, and mathematics in general education to understand the functionality of various materials and the nature of phenomena. In addition, since manaba will be used for reviewing lectures and submitting assignments, students are required to have an Internet connection via PC or mobile terminal.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Introduction to Materials Engineering	Explains the difference between a substance and a material, and the form and function of materials.
		2nd	Basics of Ceramic Materialas	Explains the characteristics of ceramic materials and fine ceramics.
		3rd	Fundamentals of Crystals and Phase Transitions	Explains types of crystals, their physical properties, and phase transitions.
		4th	Zirconia materials (I)	Explains about stabilization of zirconia and toughness of partially stabilized zirconia materials.
		5th	Zirconia materials (II)	Explains functional properties of stabilized zirconia
		6th	Processing Methods of Fine Ceramics	Explains about raw material purification process using complexes and various sintering methods.
		7th	Soft Solution Chemistry Methods	Explains how to synthesize Fine Ceramics by solution processes.
		8th	[Mid-term exam]	
	4th Quarter	9th	Dielectric materials	Explains structure and physical properties, types and applications of dielectric materials.
		10th	Fluorescent materials	Explains the fluorescent emission characteristics of rare earth ions, and the characteristics and applications of inorganic fluorescent materials

		11th	Magnetic Materials	Explains the characteristics and applications of magnetic materials.
		12th	Glass materials	Understands the characteristics of glass materials and explain processing, strengthening, and functionalization methods.
		13th	Nano Materials	Explains processing methods and functionalization of nano materials, using catalyst materials as an example.
		14th	Energy Materials (I)	Explains the structure and materials of fuel cells.
		15th	Energy Materials (II)	Explains structures and materials of dye-sensitized solar cells.
		16th	[Return of final exam]	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	0	30	100
Basic Proficiency	30	0	0	0	0	30	60
Specialized Proficiency	40	0	0	0	0	0	40
Cross Area Proficiency	0	0	0	0	0	0	0

Anan College	Year	2024	Course Title	Biochemistry

Course Information

Course Code	1555505	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	専門共通科目（本科）	Student Grade	5th
Term	First Semester	Classes per Week	前期:2
Textbook and/or Teaching Materials			
Instructor	Otani Takashi		

Course Objectives

1. Able to summarize various technical information in the field of chemistry into a report.
2. Able to summarize what you hear about business activities into a report.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Able to understand technical information, and summarize it in a report including your own considerations.	Able to understand technical information, and summarize its contents in a report.	Able to understand the basics of technical information, and summarize them in a report.
Achievement 2	Able to understand corporate activities, and summarize them in a report including your own considerations.	Able to understand corporate activities, and summarize those contents in a report.	Able to understand the basics of corporate activities, and summarize them in a report.

Assigned Department Objectives

Teaching Method

Outline	You learn about advanced knowledge in the field of chemistry and the activities of current chemical companies. Specifically, you receive lectures on specialized fields from teachers in the chemistry course, and lectures on corporate activities from lecturers who work for chemical companies. Furthermore, based on the knowledge you have acquired, you plan, implement, and report on events in cooperation with different grades.
Style	You acquire advanced knowledge in the field of chemistry and knowledge about corporate activities through lectures given by faculty members of the chemistry course and outside lecturers (industries, universities, etc.). For event planning, you are divided into groups. The teachers becomes facilitators.
Notice	The score will be reduced as you miss report deadlines by a week. If you miss a class, you must submit your report tentatively at Manaba.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☐ Instructor Professionally Experienced

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance, Lecture by a chemistry course teacher andan external lecturer, group work1	Able to understand the purpose of this lesson. Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		2nd	Lecture by a chemistry course teacher andan external lecturer, group work2	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		3rd	Lecture by a chemistry course teacher andan external lecturer, group work3	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		4th	Lecture by a chemistry course teacher andan external lecturer, group work4	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		5th	Lecture by a chemistry course teacher andan external lecturer, group work5	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		6th	Lecture by a chemistry course teacher andan external lecturer, group work6	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		7th	Lecture by a chemistry course teacher andan external lecturer, group work7	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		8th	Lecture by a chemistry course teacher andan external lecturer, group work8	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.

	2nd Quarter	9th	Lecture by a chemistry course teacher andan external lecturer, group work9	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		10th	Lecture by a chemistry course teacher andan external lecturer, group work10	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		11th	Lecture by a chemistry course teacher andan external lecturer, group work11	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		12th	Lecture by a chemistry course teacher andan external lecturer, group work12	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		13th	Lecture by a chemistry course teacher andan external lecturer, group work13	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		14th	Lecture by a chemistry course teacher andan external lecturer, group work14	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		15th	Lecture by a chemistry course teacher andan external lecturer, group work15	Able to understand the background and current problems of the lecturer's field of expertise.Able to listen to lecturer and think about your career path.
		16th		

Evaluation Method and Weight (%)

	assignment					Total
Subtotal	100	0	0	0	0	100
Basic Proficiency	30	0	0	0	0	30
Specialized Proficiency	30	0	0	0	0	30
Cross Area Proficiency	40	0	0	0	0	40