

Anan College				Advanced Course of Creative Technology System Engineering				Year		2024					
Department Goals															
Course Category		Course Title	Course Code	Credit Type	Credits	Class Hours per Week								Instructor	Division in Learning
						Adv. 1st Y				Adv. 2nd Y					
						1st		2nd		1st		2nd			
						1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
General	Compulsory	English Communication	5116A01	Academic Credit	2	2								Christopher Prowant	
General	Compulsory	Engineering Ethics	5116B01	Academic Credit	2	2								Fujii Taketo	
General	Elective	Biological Science	5196B03	Academic Credit	2									Ota Naotomo	
Specialized	Compulsory	Safety and Health Engineering	5916F01	Academic Credit	2	2								Tagami Takanori	
Specialized	Compulsory	Environmental Policy	5916F02	Academic Credit	2	2								Imada Hiroyuki	
Specialized	Compulsory	Mathematical Analysis	5916F03	Academic Credit	2	2								Nishimori Yasuhiro, Kusahida Masahiro	
Specialized	Compulsory	Creative Technology System Eng. Special Research 1	5916G01	Academic Credit	6	6								Zheng Tao,Yasuno Emiko, Okamoto Hiroyuki	
Specialized	Compulsory	Practice for Creative Design Technology	5916T01	Academic Credit	2	4								Nishino Seiichi, Komatsu Minoru, Fujihara Takeshi,Fukuda Koji,Fukumiji Junji,Yoshida Susumu,Zheng Tao,Yoshimura Hiroshi,Otani Takashi,Ueda Kohei, Okamoto Hiroyuki	

Sp eci ali ze d	Co m pu lso ry	複合領域ゼミナール	5916T 02	Acade mic Credit	2	<table><tr><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td></tr></table>			2					Okam oto Hiroyu ki,Nak amura Yuichi, Nishim oto Koji,Y asuno Emiko, Zheng Tao,In oue Takafu mi	
		2													
Sp eci ali ze d	Co m pu lso ry	Information Processing Exercise	5916T 03	Acade mic Credit	1	<table><tr><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td></tr></table>			2					Tanak a Tatsuji	
		2													
Sp eci ali ze d	El ec tiv e	Theory of Linear Algebra	5996F 01	Acade mic Credit	2	<table><tr><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td></tr></table>			2					Sugino Ryuza buro	
		2													
Sp eci ali ze d	El ec tiv e	Statistical Thermodynamics	5996F 02	Acade mic Credit	2	<table><tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2							Matsu o Toshih iro	
2															
Sp eci ali ze d	El ec tiv e	Advanced Environmental Technology	5996F 04	Acade mic Credit	2	<table><tr><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td></tr></table>			2					Kage masa Shuka ,Osad a Kengo	
		2													
Sp eci ali ze d	El ec tiv e	Internship 1	5996K 01	Acade mic Credit	1	<table><tr><td>1</td><td></td><td>1</td><td></td><td></td><td></td><td></td></tr></table>	1		1					Yasun o Emiko, Zheng Tao	
1		1													
Sp eci ali ze d	El ec tiv e	Internship 2	5996K 02	Acade mic Credit	2	<table><tr><td>2</td><td></td><td>2</td><td></td><td></td><td></td><td></td></tr></table>	2		2					Yasun o Emiko, Zheng Tao	
2		2													
Sp eci ali ze d	El ec tiv e	Internship 3	5996K 03	Acade mic Credit	3	<table><tr><td>3</td><td></td><td>3</td><td></td><td></td><td></td><td></td></tr></table>	3		3					Yasun o Emiko, Zheng Tao	
3		3													
Sp eci ali ze d	El ec tiv e	Internship 4	5996K 04	Acade mic Credit	4	<table><tr><td>4</td><td></td><td>4</td><td></td><td></td><td></td><td></td></tr></table>	4		4					Yasun o Emiko, Zheng Tao	
4		4													
Ge ne ral	Co m pu lso ry	English Reading	5117A 02	Acade mic Credit	2	<table><tr><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr></table>					2			Christ opher Prowa nt	
				2											
Ge ne ral	Co m pu lso ry	Comparative Cultuology	5117B 02	Acade mic Credit	2	<table><tr><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr></table>					2			Fujii Taketo	
				2											
Ge ne ral	El ec tiv e	Language and Literature	5197A 03	Acade mic Credit	2	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td></tr></table>							2	Nishik ori Hirofu mi	
						2									
Sp eci ali ze d	Co m pu lso ry	Creative Technology System Eng. Special Research 2	5917G 01	Acade mic Credit	10	<table><tr><td></td><td></td><td></td><td></td><td>5</td><td></td><td>5</td></tr></table>					5		5	Okam oto Hiroyu ki,Nak amura Yuichi, Nishim oto Koji,Y asuno Emiko, Zheng Tao,In oue Takafu mi	
				5		5									

Sp eci ali ze d	Co m pu lso ry	Creative Technology Seminar	5917T 01	Acade mic Credit	1	2	Okam oto Hiroyu ki,Nish imoto Koji,K ozai Takan ori,Ka mano Masar u,Ota Kengo ,Naka mura Atsun obu,K ozai Takan ori,Ka dono Takum a	
Sp eci ali ze d	Co m pu lso ry	Practice for Creative Technology	5917T 02	Acade mic Credit	2	4	Naka mura Yuichi, Nishim oto Koji,O kamot o Hiroyu ki	
Sp eci ali ze d	El ec tiv e	Advanced Physics	5997F 05	Acade mic Credit	2	2	Sonod a Akihik o	
Sp eci ali ze d	El ec tiv e	Applied Analysis	5997F 06	Acade mic Credit	2	2	Sugino Ryuza buro	

Anan College		Year	2024		Course Title	English Communication
Course Information						
Course Code		5116A01		Course Category	General / Compulsory	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials		Presentations Textbook				
Instructor		Christopher Prowant				
Course Objectives						
This course focuses on Presentations and provides critical thinking opportunities which enable students to practice using an open-ended lecture format. Knowledge of English vocabulary, expressions and grammar is applied to real life situations. Composition and comprehension activities are also utilized in order to continue developing conversation fluency.						
Rubric						
		Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)		Unacceptable Level of Achievement (Fail)	
Evaluation 1		Students are able to converse smoothly with one another and the native teacher.	Students can answer a question or make a comment in a few words and speak freely in a group.		Students cannot understand the majority of exercises and activities and cannot speak easily.	
Evaluation 2		Students speak their opinions directly and utilize critical thinking skills in English.	Students can answer the majority of questions, listen attentively and write their ideas clearly.		Students remain passive, do not express themselves and cannot comprehend the lecture	
Evaluation 3		Students can take notes entirely in English and can present their ideas clearly and concisely.	Students can take notes in Japanese and grasp the main idea of the lecture but not the details.		Students can take notes in Japanese and do not understand the majority of the lecture.	
Assigned Department Objectives						
Teaching Method						
Outline		This course focuses on listening and speaking skills for giving presentations in English. Critical thinking opportunities aid students in processing new information and the application of that knowledge is related to real life situations through dialogue practice. Composition and comprehension activities are also utilized to make the most of their skills.				
Style		1. Develop listening skills and communication strategies using native English conversation. 2. Gain confidence in speaking and listening and perfect composition writing and critical reading skills. 3. Improve communication skills in order to smoothly engage in conversations with foreign people. 4. Engage in cultural awareness and open-mindedness to others using cultural comparisons.				
Notice		Students will come to class prepared. Students using a cellphone in class equals one tardiness on the first warning. Students will not sleep in the class. Students will be enthusiastic and enjoy themselves.				
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 introduction		Note-taking skills, writing key words and main ideas	
		2nd	Greetings to peers in a professional setting; politeness		Job Hunting exercise; It's + adj. + infinite; asking for repetition / clarification	
		3rd	Paced and timed dictation		Forms of present tense / review of past tenses	
		4th	Reading skills: key word recognition, main idea; etc.		Distinguishing between words with similar meanings	
		5th	Vocabulary quiz based on exercises		Vocabulary Word list review	
		6th	Cultural Identity of foreign countries		Purpose of international studies / communication	
		7th	International greetings exercise		Listening for main ideas and more nuanced details	
		8th	Mid-Term Exam			
	2nd Quarter	9th	Talking about your skills comprehension		Understanding numbers and dates; discussion question	
		10th	Metric versus Non-Metric measurements		How to convert large numbers or decimal numbers	
		11th	Hobbies and Sports		Modals, prepositions, discussion topics	
		12th	Sociology; Presentation on club activities / hobbies		Suffixes; Reduction of "be going to" into "gonna"	
		13th	Vocabulary Quiz; The Science of Sports Discussion and activity		Making notes using a word web; synonyms	
		14th	Simple present for informal narratives; Participle forms		Simple present-tense third person -s/-es; using the dictionary	
		15th	Sports in our lives Grammar activity		Relative clauses, Gerunds as subjects or objects / Infinitives	

		16th	Final Exam				
Evaluation Method and Weight (%)							
	Examination	Quiz	Assignments	Presentation	Other		Total
Subtotal	50	10	25	10	5	0	100
Basic Ability	50	10	25	10	5	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Engineering Ethics
Course Information						
Course Code	5116B01			Course Category	General / Compulsory	
Class Format	Lecture			Credits	Academic Credit: 2	
Department	Advanced Course of Creative Technology System Engineering			Student Grade	Adv. 1st	
Term	First Semester			Classes per Week	前期:2	
Textbook and/or Teaching Materials	[Textbooks] Engineering Ethics for Beginners, 4th Edition. [Reference book] Be a Proud Engineer (Nagoya University Press)					
Instructor	Fujii Taketo					
Course Objectives						
1. Cultivate a sense of ethics to contribute to society as an engineer and be aware of one's own responsibilities. 2. Able to deepen one's awareness of the problems demanded by society through case studies and discussions, and think of solutions to those problems. 3. Able to practice the basics of how to continuously learn specialized knowledge as an engineer engaged in "manufacturing" in the future.						
Rubric						
	Ideal Level		Standard Level		Minimum Level	
Achievement 1	Able to be fully aware of one's responsibilities as an engineer in society, and explain in detail about one's own sense of ethics.		Able to be aware of one's responsibilities as an engineer in society, and explain in detail about one's own sense of ethics.		Able to be aware of one's responsibilities as an engineer in society, and explain to some extent about one's own sense of ethics.	
Achievement 2	Able to come up with one's own unique solutions to problems demanded by society that are beneficial.		Able to come up with useful solutions to problems demanded by society.		Able to understand general beneficial solutions to problems demanded by society.	
Achievement 3	Able to practice different methods of continuing professional knowledge learning as a engineer.		Able to practice one method for continuing professional knowledge learning as a engineer.		Able to understand the general methods for continuing professional learning as an engineer.	
Assigned Department Objectives						
Teaching Method						
Outline	Ethics is not something that can be imposed by others, but something that one must consider for oneself in order to determine the line between right and wrong. The same is true for those of you who aspire to become engineers. In this lecture, we aim to cultivate the sense of ethics necessary to contribute to society as engineers in the future by examining ethical issues raised by specific cases.					
Style	The case study reports will be assigned to students who will be chosen in advance. In addition, a small report and discussion will be conducted for each case study. Since this course is a credit course, students will be required to write reports and impressions as pre- and post-learning activities. [Class time: 30 hours + Self-study: 60 hours]					
Notice	The order of the syllabus may change back and forth depending on the order of the case study reports. The case studies and discussions will be conducted online.					
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	Engineers and Ethics		Able to summarize one's opinion on the outline of ethics necessary as an engineer in society.	
		2nd	Engineers and Ethics		Able to summarize one's opinion on the outline of ethics necessary as an engineer in society.	
		3rd	Engineers and Ethics		Able to summarize one's opinion on the outline of ethics necessary as an engineer in society.	
		4th	Engineers and Code of Ethics		Able to discuss the outline of a code of ethics regarding engineers, through case studies.	
		5th	Engineers and Code of Ethics		Able to discuss the outline of a code of ethics regarding engineers, through case studies.	
		6th	Engineers and Safety		Able to explain safety considerations for engineers, through case studies.	
		7th	Engineers and Safety		Able to explain safety considerations for engineers, through case studies.	
		8th	Engineers and the Environment		Able to consider the environmental considerations that engineers should take into account, through case studies on environmental pollution accidents.	
	2nd Quarter	9th	Engineers and the Environment		Able to consider the environmental considerations that engineers should take into account, through case studies on environmental pollution accidents.	
		10th	Engineers and Consumers		Able to consider engineer's responsibility to consumers, through case studies.	
		11th	Engineers and Consumers		Able to consider engineer's responsibility to consumers, through case studies.	

		12th	Engineers and Society	Able to consider the relationship between engineers and whole society, through case studies of sexual harassment, bribery, and the others.
		13th	Engineers and Society	Able to consider the relationship between engineers and whole society, through case studies of sexual harassment, bribery, and the others.
		14th	Engineers as workers in an organization	Able to consider the morals that engineers working in organizations should observe, conflicts between organizations and individuals, whistle-blowing issues, etc., through case studies.
		15th	Engineers as workers in an organization	Able to consider the morals that engineers working in organizations should observe, conflicts between organizations and individuals, whistle-blowing issues, etc., through case studies.
		16th	[Time for returning answers]	

Evaluation Method and Weight (%)

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

Anan College		Year	2024		Course Title	Biological Science	
Course Information							
Course Code		5196B03		Course Category		General / Elective	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 1st	
Term		Second Semester		Classes per Week		後期:2	
Textbook and/or Teaching Materials		Familiar Biology, Shigehiro Yoshimura, Yodosha					
Instructor		Ota Naotomo					
Course Objectives							
1. To be able to explain cells and genes and their expression, transduction, and interaction with the environment. 2. To be able to explain the mechanisms of growth and homeostasis of organisms, including cell differentiation, signal transduction, cell cycle, metabolism, immunity, and senescence.							
Rubric							
		Ideal Level		Standard Level		Minimum Level	
Achievement 1		To be able to explain cells and genes and their expression, transduction, and interaction with the environment in detail.		To be able to explain cells and genes and their expression, transduction, and interaction with the environment.		To be able to understand cells and genes and their expression, transduction, and interaction with the environment.	
Achievement 2		2. To be able to explain in detail the mechanisms of growth and homeostasis of organisms, including cell differentiation, signal transduction, cell cycle, metabolism, immunity, and senescence.		2. To be able to explain the mechanisms of growth and homeostasis of organisms, including cell differentiation, signal transduction, cell cycle, metabolism, immunity, and senescence.		2. To be able to understand the mechanisms of growth and homeostasis of organisms, including cell differentiation, signal transduction, cell cycle, metabolism, immunity, and senescence.	
Assigned Department Objectives							
Teaching Method							
Outline		Biological sciences have become a part of "scientific literacy," and knowledge and information about them have become necessary for social life, and are becoming common knowledge, especially recently after the first pandemic in several hundred years. In addition, the topics of life science, which are advancing day and night, are sometimes making people think about the existence of human beings and sometimes confronting them as bioethical issues. In this lecture, students will acquire the knowledge and judgment to know "what human beings are" and to deal with the fundamental question of "how we should respond to the development of life science".					
Style		A quiz will be given on the content of the preliminary study. The class will proceed with a PowerPoint presentation by students. Students will submit reports on their assignments. 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		
2nd Semester r	3rd Quarter	1st	What it means to be alive Information and structures that make up living organisms		Explain the relationship between the human body and energy Explain the structure and function of cells		
		2nd	Types and Properties of Sugars		To be able to explain types and properties of sugar		
		3rd	Mechanism of obtaining energy from sugar		To be able to explain how sugar is converted into energy		
		4th	Structure and properties of lipids		To be able to explain the structure and properties of lipids		
		5th	Transport and metabolism of lipids		Be able to explain the transport and metabolism of lipids		
		6th	Vitamins and minerals		To be able to explain the functions of vitamins and minerals		
		7th	Structure and function of DNA		Can explain the structure and function of DNA		
		8th	From DNA to protein		To be able to explain how DNA is expressed		
	4th Quarter	9th	How proteins work		To be able to explain how proteins work		
		10th	Intracellular and extracellular signal transduction		To be able to explain the intracellular and extracellular signal transduction		
		11th	Mechanism and regulation of cell division		To be able to explain cell division		
		12th	Development and differentiation Cellular stress response mechanisms		To be able to explain development and differentiation and cellular stress response		
		13th	Mechanisms of the immune system		To be able to explain the mechanism of the immune system		
		14th	ES cells and iPS cells		To be able to explain initialization of cells		
		15th	Regenerative medicine and aging		Be able to explain regenerative medicine, apoptosis and aging		
		16th					

Evaluation Method and Weight (%)							
	quiz	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	50	30	0	0	20	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	50	30	0	0	20	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Safety and Health Engineering
Course Information						
Course Code		5916F01		Course Category	Specialized / Compulsory	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials		"Class 1, Class 2 Health Supervisor Textbook" by Haruhisa Wago (Takahashi Shoten)				
Instructor		Tagami Takanori				
Course Objectives						
1. Able to understand and explain basic issues related to labor physiology. 2. Able to understand and explain basic issues related to labor health. 3. Able to understand and explain the regulations on prevention of specific chemical substances, oxygen deficiency syndrome, and organic solvent poisoning.						
Rubric						
		Ideal Level		Standard Level		Minimum Level
Achievement 1		Able to understand the basic issues related to labor physiology and be able to explain specific cases.		Able to understand and explain basic issues related to labor physiology.		Able to understand the basic issues related to labor physiology.
Achievement 2		Able to understand the basic issues related to labor health and be able to explain specific cases.		Able to understand and explain basic issues related to labor health.		Able to understand the basic issues related to labor health.
Achievement 3		Able to understand the regulations on prevention of specific chemical substances, oxygen deficiency syndrome, and organic solvent poisoning, and be able to explain specific cases.		Able to understand and explain the regulations on prevention of specific chemical substances, oxygen deficiency syndrome, and organic solvent poisoning.		Able to understand the prevention regulations regarding specific chemical substance hazards, oxygen deficiency diseases, and organic solvent poisoning.
Assigned Department Objectives						
Teaching Method						
Outline		In this lecture, students will learn about potential hazards in the work environment and how to deal with them, as well as how to create a comfortable work environment.				
Style		Basic knowledge of sanitary engineering, environmental engineering, etc. is required and should be studied in advance.				
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	1. Labor Physiology (1) Blood and circulatory system		Able to understand and explain the components of blood, structure of the heart, pulmonary circulation, and body circulation.	
		2nd	(2) Respirator, digester system		Able to understand and explain the respiratory system, respiratory center, digestive system, and absorption of nutrients.	
		3rd	(3) Urinary and sensory system		Able to understand and explain the role of the urinary organs, diseases, and the structure of sensory organs such as the eyes and ears.	
		4th	(4) Nervous system		Able to understand and explain the composition of the nervous system, the relationship between the brain and nerves, and the structure of neurons.	
		5th	(5) Muscle, stress and fatigue		Able to understand and explain muscle structure, the meaning of stress, fatigue and its prevention.	
		6th	2. Labor Health (hazardous work) (1) Airborne toxic substances		Able to understand and explain the classification of hazardous substances, their characteristics, and routes of entry into the body.	
		7th	(2) Poisoning by organic solvents		Able to understand and explain the classification of organic solvents, their characteristics, and symptoms of poisoning by gases.	
		8th	1st Semester Midterm Examination			
	2nd Quarter	9th	(3) Working environment such as heat, high pressure, etc.		Able to understand and explain the symptoms of heat stroke and how to deal with them, as well as the thermal and high-pressure work environment.	
		10th	(4) Work management and protective equipment		Able to understand and explain the need for work management and the types and importance of labor health protective equipment.	
		11th	3. Labor Health (non-hazardous work) First Aid		Able to understand and explain how to deal with fractures, bleeding, and primary life-saving procedures.	

		12th	4. Related Laws and Regulations (Hazardous Work) (1) Safety and health management system	Understand and explain the purpose of the labor health and safety law and the role of the health supervisor.
		13th	(2) Regulations on Prevention of Hazards due to Specified Chemical Substances	Able to understand and explain the definition and classification of specific chemical substances and types of treatment equipment.
		14th	(3) Regulations for Prevention of Oxygen Deficiency Disorders, etc.	Able to understand and explain the classification of oxygen depletion hazardous areas and the definition of oxygen depletion.
		15th	(4) Regulations on Prevention of Organic Solvent Poisoning	Able to understand and explain the definition and classification of organic solvents and countermeasures against emission sources of organic solvents.
		16th	1st Semester Final Examination	

Evaluation Method and Weight (%)

	midterm/final exam	quiz	portfolio	presentation/attitude	other	Total
Subtotal	70	0	30	0	0	100
Basic Proficiency	40	0	20	0	0	60
Specialized Proficiency	20	0	10	0	0	30
Cross Area Proficiency	10	0	0	0	0	10

Anan College		Year	2024		Course Title	Environmental Policy	
Course Information							
Course Code		5916F02		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 1st	
Term		First Semester		Classes per Week		前期:2	
Textbook and/or Teaching Materials		Environmental law [2nd edition] (Yuhikaku)					
Instructor		Imada Hiroyuki					
Course Objectives							
1. Be able to explain trends in pollution and environmental litigation. 2. Be able to explain the basic environmental law system. 3. Be able to explain various methods of environmental policy.							
Rubric							
		Ideal Level		Standard Level		Minimum Level	
Achievement 1		Able to explain the issues of pollution and environmental litigation.		Able to provide an overview of the basic trends in pollution and environmental litigation.		Able to explain the main points of trends in pollution and environmental litigation.	
Achievement 2		Able to explain the relationship between environmental ethics, the environmental rights theory of the Constitution, and the Basic Environmental Law.		Able to provide an overview of the legal system based on the Basic Environmental Law.		Able to explain the main points of the legal system based on the Basic Environmental Law.	
Achievement 3		Able to explain the significance and issues of various environmental policy methods.		Able to provide an overview of various environmental policy methods.		Able to explain the basic points of various environmental policy methods.	
Assigned Department Objectives							
Teaching Method							
Outline		The goal of this course is to comprehensively learn about policy responses to environmental issues, and to be able to understand and explain the overall picture.					
Style		In the class, we will first provide an overview of the characteristics of environmental policy and learn about the philosophy of environmental policy from the perspective of environmental ethics.Next, understand the trends in environmental courts.Based on this, students will examine various methods of environmental policy based on the Basic Environmental Law in order and acquire the ability to explain them holistically.					
Notice		Please be interested in various environmental issues from a broad perspective. Take this course while thinking about environmental conservation and creation in relation to the entire social system. Reference book : Fundamentals of local government environmental administration (Yuhikaku)					
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. Characteristics of environmental policy		Able to explain the basic characteristics of environmental law and environmental policy.		
		2nd	2. environmental ethics		Able to explain the philosophy of environmental policy. Able to explain various theories of environmental ethics.		
		3rd	3. environmental litigation		Able to explain the Minamata disease problem from legislative, administrative, judicial, and political perspectives.		
		4th	environmental civil litigation1-1		Able to explain the Minamata disease problem from legislative, administrative, judicial, and political perspectives.		
		5th	environmental civil litigation1-2		Able to explain the Minamata disease problem from legislative, administrative, judicial, and political perspectives.		
		6th	environmental civil litigation2		Able to explain trends in environmental civil litigation and environmental administrative litigation.		
		7th	environmental civil litigation3		Able to explain trends in environmental civil litigation and environmental administrative litigation.		
		8th	4. environmental policy basic law		Able to explain the structure of the Basic Environmental Law.		
	2nd Quarter	regulation1			Able to explain command and supervision methods.		
		regulation2			Able to explain command and supervision methods.		
		Circulation1			Able to explain the circulation method.		
		Circulation2			Able to explain the circulation method.		
		Impact assessment1			Able to explain impact assessment methods.		
		Impact assessment2			Able to explain impact assessment methods.		

		14th	environment and economy	Able to explain economic methods, environmental ISO, etc.		
		15th	environment and international relations	Able to explain environmental treaties.		
		16th	Final exam return			
Evaluation Method and Weight (%)						
	midterm/final exam	quiz	portfolio	presentation/attitude	other	Total
Subtotal	60	0	40	0	0	100
Basic Proficiency	50	0	30	0	0	80
Specialized Proficiency	10	0	10	0	0	20
Cross Area Proficiency	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Mathematical Analysis
Course Information						
Course Code		5916F03		Course Category	Specialized / Compulsory	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials		Applied Mathematics Revised edition(Dainippon tosho), Applied Mathematics Mondaishu Revised edition(Dainippon tosho),				
Instructor		Nishimori Yasuhito,Kushida Masahiro				
Course Objectives						
1. Able to perform four arithmetic operations on complex numbers. 2. Able to differentiate complex functions. 3. Able to compute complex integrals along curves. 4. Able to compute complex integrals using Cauchy's integral theorem. 5. Able to compute complex integrals using the residue theorem.						
Rubric						
		Ideal Level	Standard Level		Unacceptable Level	
Achievement 1		Able to perform complicated four arithmetic operations on complex numbers.	Able to perform basic four arithmetic operations on complex numbers.		Able to perform simple four arithmetic operations on complex numbers.	
Achievement 2		Able to differentiate complicated complex functions.	Able to differentiate basic complex functions.		Able to differentiate simple complex functions.	
Achievement 3		Able to compute complex integrals along complicated curves of complicated complex functions.	Able to compute complex integrals along simple curves of basic complex functions.		Able to compute complex integrals along simple curves of simple complex functions.	
Achievement 4		Able to use Cauchy's integral theorem to compute basic complicated integrals.	Able to use Cauchy's integral theorem to compute basic complex integrals.		Able to use Cauchy's integral theorem to compute simple complex integrals.	
Achievement 5		Students can use the residue theorem to compute complicated complex integrals.	Students can use the residue theorem to compute basic complex integrals.		Students can use the residue theorem to compute simple complex integrals.	
Assigned Department Objectives						
Teaching Method						
Outline		In the field of science and technology, complex function theory is a very powerful tool that is often used to elucidate phenomena. In this lecture, after learning the basic operations of complex functions (four arithmetic operations, differentiation, and integration), students learn how to compute complex integrals using Cauchy's integral theorem and residue theorem.				
Style		Classes will be conducted in the form of lectures and exercises. Assignments will be given to confirm the content.				
Notice		1. Try to review previously learned mathematics (differential and integral calculus, linear algebra, and applied mathematics) 2. Students are expected to prepare for basic problems in the textbook and attend lectures with a positive attitude. 3. Students are expected to strictly observe the deadline for submission of assignments, etc.				
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	Complex numbers and polar forms		Understand basic terms related to complex numbers. To be able to calculate sums and differences of complex numbers. Convert to polar form.	
		2nd	Absolute Values and Declination		Able to calculate the product and quotient of complex numbers. Able to find absolute value and arguments of complex numbers.	
		3rd	Complex functions		Understand exponential and trigonometric functions.	
		4th	Holomorphic function		Able to differentiate basic functions.	
		5th	Cauchy-Riemann equation		Able to use the Cauchy-Riemann relation to determine whether a complex function is holomorphic.	
		6th	Inverse functions		Understand logarithmic functions as inverse functions of exponential functions.	
		7th	Complex integral I		Able to calculate complex integrals along simple curves.	
		8th	Mid-term exam			
	2nd Quarter	9th	Complex Integral II		Able to compute complex integrals using the basic properties of complex integrals.	
		10th	Cauchy's integral theorem		Able to calculate complex integrals along simple closed curves using Cauchy's integral theorem.	

		11th	Cauchy's integral formula	Able to calculate complex integrals along simple closed curves using Cauchy's integral formula.
		12th	Expansion of Functions I	Able to calculate Taylor expansion.
		13th	Expansion of Functions II	Able to calculate Laurent expansion.
		14th	Residue	Able to calculate compute residues at isolated singularities of functions.
		15th	Residue theorem	Able to compute complex integrals along simple closed curves using the residue theorem.
		16th	Return of final exam	

Evaluation Method and Weight (%)

	Regular examination	Quiz	Portfolio	Presentation/Behavior	Other	Total
Subtotal	70	0	30	0	0	100
Basic Proficiency	40	0	20	0	0	60
Specialized Proficiency	20	0	10	0	0	30
Cross Area Proficiency	10	0	0	0	0	10

Anan College		Year	2024		Course Title	Creative Technology System Eng. Special Research 1
Course Information						
Course Code		5916G01		Course Category	Specialized / Compulsory	
Class Format				Credits	Academic Credit: 6	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		Year-round		Classes per Week	前期:6 後期:6	
Textbook and/or Teaching Materials		Supervisors introduce you as necessary.				
Instructor		Zheng Tao,Yasuno Emiko,Okamoto Hiroyuki				
Course Objectives						
1. Able to research and use literature, learn experimental and theoretical research methods, and consider things from multiple perspectives. 2. Able to independently conduct research on a topic. 3. Able to communicate appropriately with supervisors and co-researchers and play one's role as a member of a team. 4. Able to be summarized as scientific and technical papers about the results obtained by research.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Achievement 1		Become familiar with literature research and experimental/theoretical research methods, and be able to appropriately consider results from multiple perspectives.		Able to study literature and learn experimental and theoretical research methods, and consider results from multiple perspectives.		Have acquired the basics of literature research and experimental/theoretical research methods. Able to consider the result from multiple angles.
Achievement 2		Able to research on their own what is needed to solve problems and discuss it with their supervisors.		Able to carry out their research by considering their own opinions while discussing with their supervisors and others.		Able to carry out research under instructions from supervisor.
Achievement 3		Able to understand their role in the team and actively communicate with their supervisor and other staff.		Able to communicate with supervisors and others and play the necessary role as a member of a team.		Able to have basic communication with your supervisor and play the minimum role as a member of a team.
Achievement 4		Able to summarize research content logically and summarize research in English by oneself.		Able to logically summarize your research content by referring to your supervisor's instructions. Able to summarize your research summary in English by referring to the instructions.		Able to logically summarize research content according to the instructions of the supervisor. Able to create a research outline and English text according to the instructions of the supervisor.
Assigned Department Objectives						
Teaching Method						
Outline		To dedicate research in their respective fields under the guidance of their respective supervisors, acquire basic attitudes and methodologies for research, and learn the importance of having a multifaceted perspective in research and development. In addition, while considering "manufacturing", students will develop the design ability to realize technical concepts and creative thinking. Furthermore, the research background, objectives, methods, obtained results and considerations, and future prospects will be summarized in the form of a special research report.				
Style						
Notice		Communicate thoroughly with your supervisors when setting your research theme based on the courses you have learned in your regular and advanced course and the courses. To solve problems, be sure to include your own thoughts and arguments and carry out research activities independently.				
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	Carrying out special research1 Preparation of special research report		Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).	
		2nd	Carrying out special research1 Preparation of special research report		Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).	

[illegible]

[illegible]

		11th	Carrying out special research1 Preparation of special research report	Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).
		12th	Carrying out special research1 Preparation of special research report	Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).
		13th	Carrying out special research1 Preparation of special research report	Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).
		14th	Carrying out special research1 Preparation of special research report	Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).
		15th	Carrying out special research1 Preparation of special research report	Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).
		16th	Carrying out special research1 Preparation of special research report	Conduct research activities such as surveys, seminars, experiments, and calculations under the supervision of special research supervisors. Summarize the research background, objectives, methods, obtained results and considerations, and future prospects in the form of a special research report (approximately 10 A4 pages).

Evaluation Method and Weight (%)

	Examination	Quiz	Portfolio	Behavior	Others	Total
Subtotal	0	0	0	0	100	100
Basic Proficiency	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	70	70
Cross Area Proficiency	0	0	0	0	30	30

Anan College		Year	2024		Course Title	Practice for Creative Design Technology
Course Information						
Course Code	5916T01			Course Category	Specialized / Compulsory	
Class Format				Credits	Academic Credit: 2	
Department	Advanced Course of Creative Technology System Engineering			Student Grade	Adv. 1st	
Term	First Semester			Classes per Week	前期:4	
Textbook and/or Teaching Materials	各担当教員より紹介					
Instructor	Nishino Seiichi,Komatsu Minoru,Fujihara Takeshi,Fukuda Koji,Fukumi Junji,Yoshida Susumu,Zheng Tao,Yoshimura Hiroshi,Otani Takashi,Ueda Kohei,Okamoto Hiroyuki					
Course Objectives						
1. 実習内容の要素技術を説明できる。 2. 実習結果について技術的考察ができる。 3. 実習内容および実習結果考察をレポートにまとめることができる。 4. 自分の専攻コースのときは他コースの学生の演習を補助できる。						
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	実習内容の要素技術の原理, 基本法則を理解し説明, 活用ができる。		実習内容の要素技術の原理, 基本法則を理解し, 自分の言葉で説明できる。		実習内容の要素技術に関して一定の説明ができる。	
到達目標2	実習結果についてまとめ, 自分で調査して得た資料などを基に技術的考察ができる。		実習結果について自分なりにまとめ, 与えられた資料を基に技術的考察ができる。		実習結果について技術的考察ができる。	
到達目標3	実習内容および実習結果の考察を自分で調査して得た資料など関連させてレポートにまとめることができる。		実習内容および実習結果考察を与えられた資料を参照し, 自分の言葉でレポートにまとめることができる。		実習内容および実習結果考察をレポートにまとめることができる。	
到達目標4	自分の専攻コースのときは他コースの学生の演習を主体的に行い創意工夫して補助できる。		自分の専攻コースのときは他コースの学生の演習を主体的に補助できる。		自分の専攻コースのときは他コースの学生の演習を教員の指示のもと補助できる。	
Assigned Department Objectives						
Teaching Method						
Outline	工学技術の基礎となる各コースの工学演習を行い、各コースの実習を通して基本的な知識・技術を習得することで、幅広い知識と技術を持つ実践的技術者としての能力を養う。 【オムニバス方式, 複数教員担当方式】 ※実務との関係: この科目は企業で機械、電気電子、情報、建設に関わる研究・開発を担当していた教員がその経験を活かし、それぞれの専門分野における基本的な技術や知識について授業を行う。					
Style	それぞれの演習項目を担当する教員が、授業計画に記された順に実施していく。 【授業時間 6 0 時間 + 自学自習時間 3 0 時間】					
Notice	電気・制御システム工学専攻および構造設計工学専攻合同で行う。授業項目に関する基礎知識を十分に復習し、これらの基礎知識が実際のものづくりにどのように結びつくかを体得すること。 評価方法および割合は各コース担当演習によって異なる。各回冒頭で確認すること。					
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	機械システムコース演習: 品質工学演習 (機能性評価)	品質工学における機能性評価の概要を説明できる。		
		2nd	機械システムコース演習: 品質工学演習 (パラメータ設計)	品質工学 (パラメータ設計) の概要を説明できる。コマ実験キットでパラメータ設計による最適設計ができる。		
		3rd	機械システムコース演習: 品質工学演習 (パラメータ設計)	品質工学 (パラメータ設計) の概要を説明できる。シミュレータを使った最適設計ができる。		
		4th	電気電子情報コース演習: オペアンプ演習	オペアンプを用いた増幅回路を構築できる。		
		5th	電気電子情報コース演習: オペアンプ演習	オペアンプを用いた増幅回路を構築できる。		
		6th	電気電子情報コース演習: オペアンプ演習	オペアンプを用いた増幅回路を構築できる。		
		7th	電気電子情報コース演習: 情報処理演習	Arduinoマイコンを用いて電圧を計測するプログラムを理解できる。		
		8th	電気電子情報コース演習: 情報処理演習	Arduinoマイコンを用いて電圧を計測するプログラムを理解できる。		
	2nd Quarter	9th	電気電子情報コース演習: 情報処理演習	Arduinoマイコンを用いて電圧を計測するプログラムを理解できる。		
		10th	建設システムコース演習: 擁壁の設計土圧演習	擁壁に作用する土圧について理解できる。		
		11th	建設システムコース演習: 擁壁の設計土圧演習	ある条件下での擁壁に作用する設計土圧を算出できる。		
		12th	建設システムコース演習: 擁壁の設計土圧演習	擁壁に作用する設計土圧について説明できる。		
		13th	応用化学コース演習: 物理化学実験	表面張力に関する測定および計算ができる。		
		14th	応用化学コース演習: 有機化学実験	再結晶による精製ができる。		
		15th	応用化学コース演習: 有機化学実験	カップリング反応が説明できる。		

		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	0	0	100	0	0	100
基礎的能力	0	0	20	0	0	20
専門的能力	0	0	60	0	0	60
分野横断的能力	0	0	20	0	0	20

Anan College		Year	2024		Course Title	複合領域ゼミナール	
Course Information							
Course Code		5916T02		Course Category		Specialized / Compulsory	
Class Format		30		Credits		Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 1st	
Term		Second Semester		Classes per Week		後期:2	
Textbook and/or Teaching Materials		Timely distribution of materials					
Instructor		Okamoto Hiroyuki,Nakamura Yuichi,Nishimoto Koji,Yasuno Emiko,Zheng Tao,Inoue Takafumi					
Course Objectives							
1. Able to understand the typical areas of each field 2. Understand research trends in each field 3. Able to understand advanced technologies and advanced initiatives in each field							
Rubric							
		Ideal Level		Standard Level		Minimum achievement level	
Achievement 1		Able to fully understand representative areas of each field		Able to understand the typical areas of each field		Able to partially understand representative areas of each field	
Achievement 2		Able to fully understand research trends in each field		Able to understand research trends in each field		Able to partially understand research trends in each field	
Achievement 3		Able to fully understand cutting-edge technologies and advanced initiatives in each field		Able to understand cutting-edge technology and advanced initiatives in each field		Able to partially understand cutting-edge technologies and advanced initiatives in each field	
Assigned Department Objectives							
Teaching Method							
Outline		First, we will introduce the contents of typical areas in each field. Next, each student will present the content of their special research and there will be a question and answer session. In addition, the instructors in charge of each course will make presentations on their research efforts, and a question-and-answer session will be held. By listening to research content in a wide range of fields, having discussions, and writing reports, students acquire cutting-edge knowledge in each field and grasp techniques and ways of thinking. In the second half, corporate engineers related to each course will be invited to give lectures including explanations of the industry, introduction of advanced technologies, and examples of advanced initiatives. By learning knowledge, techniques, ways of thinking, and specific examples of initiatives in many fields, we aim to develop future engineers who can see things in a complex manner and create new ideas. In this course, instructors who were in charge of research and development related to machinery, electrical and electronics, information, and chemistry at companies make use of their experience and teach about cutting-edge research in their respective specialized fields. We will invite related corporate engineers to give classes on the industry's cutting-edge technologies and examples of cutting-edge initiatives.					
Style		The session will basically consist of a presentation and a question and answer session. Create a report on each content to deepen your understanding. The course content is the same as described in the outline.					
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	Guidance Introduction to each field		Able to understand the typical areas of each field		
		2nd	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		
		3rd	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		
		4th	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		
		5th	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		
		6th	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		
		7th	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		
		8th	Presentation of research content by students		Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields		

	4th Quarter	9th	Research introductions by instructors of each course	Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		10th	Research introductions by instructors of each course	Able to understand research trends in each field Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		11th	Introducing examples of industry, advanced technology, and advanced initiatives by companies	Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		12th	Introducing examples of industry, advanced technology, and advanced initiatives by companies	Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		13th	Introducing examples of industry, advanced technology, and advanced initiatives by companies	Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		14th	Introducing examples of industry, advanced technology, and advanced initiatives by companies	Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		15th	Introducing examples of industry, advanced technology, and advanced initiatives by companies	Able to understand technologies and ways of thinking in other fields Able to understand cutting-edge technology and advanced initiatives in each field
		16th		

Evaluation Method and Weight (%)

	Examination	Portfolio	Presentation / Approach attitude	Total
Subtotal	0	80	20	100
Basic Proficiency	0	20	10	30
Specialized Proficiency	0	60	10	70
Cross Area Proficiency	0	0	0	0

Anan College		Year	2024		Course Title	Theory of Linear Algebra
Course Information						
Course Code	5996F01			Course Category	Specialized / Elective	
Class Format	Lecture			Credits	Academic Credit: 2	
Department	Advanced Course of Creative Technology System Engineering			Student Grade	Adv. 1st	
Term	Second Semester			Classes per Week	後期:2	
Textbook and/or Teaching Materials	Enshu to Ouyo Senkei Daisu, Saiensu Sha					
Instructor	Sugino Ryuzaburo					
Course Objectives						
1. We can understand the concepts of generalized linear space, and compute of its linear computation. 2. We can understand the concepts of generalized linear equation, and compute of its solution sets. 3. We can understand the concept of N-dimensional simultaneous equation, and compute of its problems.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
Achievement 1	We can understand the concepts of generalized linear space, and compute of its linear computation, apply these for the various problems.		We can understand the concepts of generalized linear space, and compute of its linear computation.		We can understand the concepts of generalized linear space, and compute of its elementary problems.	
Achievement 2	We can understand the concepts of generalized linear equation, and compute of its solution sets, and apply these for the various problems.		We can understand the concepts of generalized linear equation, and compute of its solution sets.		We can understand the concepts of generalized linear equation, and compute of its solution sets, and compute of its elementary problems.	
Achievement 3	We can understand the concept of N-dimensional simultaneous equation, and compute of its problems, apply these for the various problems.		We can understand the concept of N-dimensional simultaneous equation, and compute of its problems.		We can understand the concept of N-dimensional simultaneous equation, and compute of its elementary problems.	
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 generalized linear space and simultaneous equations.					
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 r	3rd Quarter	1st	linear space	We can understand N-dimensional Euclidean space and compute its fundamental problems.		
		2nd	linear space	We can understand the generalized inner product and compute its fundamental problems.		
		3rd	linear space	We can understand the solution set of linear equation and compute its fundamental problems.		
		4th	linear space	We can understand the solution set of linear equation and compute its fundamental problems.		
		5th	matrix operation	We can understand the generalized matrix and compute its fundamental problems.		
		6th	matrix operation	We can understand the generalized matrix and compute its fundamental problems.		
		7th	matrix operation	We can understand the determinant of generalized matrix and compute its fundamental problems.		
		8th	Mid-term examination			
	4th Quarter	9th	simultaneous equation and the rank of matrix	We can understand the solution set of generalized simultaneous equation and compute its fundamental problems.		
		10th	basis and dimension of linear space	We can understand the linear combination and the linear expression set of vectors and compute its fundamental problems.		
		11th	subspace and basis	We can understand the basis and dimension of subspace and compute its fundamental problems.		
		12th	linear mapping and linear space	We can understand the linear mapping of vector space and compute its fundamental problems.		

		13th	linear mapping and linear space	We can understand the change of basis and representation matrix and compute its fundamental problems.
		14th	eigen values and its application	We can understand the generalized eigen polynomial and the eigen space and compute its fundamental problems.
		15th	eigen values and its application	We can understand the generalized eigen values and the diagonalization and compute its fundamental problems.
		16th	Final examination	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	0	0	0	40	0	100
Basic Proficiency	30	0	0	0	20	0	50
Specialized Proficiency	20	0	0	0	15	0	35
Cross Area Proficiency	10	0	0	0	5	0	15

Anan College		Year	2024		Course Title	Statistical Thermodynamics	
Course Information							
Course Code	5996F02		Course Category		Specialized / Elective		
Class Format	Lecture		Credits		Academic Credit: 2		
Department	Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 1st		
Term	First Semester		Classes per Week		前期:2		
Textbook and/or Teaching Materials							
Instructor	Matsuo Toshihiro						
Course Objectives							
Rubric							
	Ideal Level		Standard Level		Unacceptable Level		
Achievement 1							
Achievement 2							
Achievement 3							
Assigned Department Objectives							
Teaching Method							
Outline							
Style							
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					
		2nd					
		3rd					
		4th					
		5th					
		6th					
		7th					
		8th					
	2nd 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	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	Advanced Environmental Technology
Course Information						
Course Code		5996F04		Course Category	Specialized / Elective	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		Second Semester		Classes per Week	後期:2	
Textbook and/or Teaching Materials		Distribute documents as appropriate.				
Instructor		Kagemasa Shuka,Osada Kengo				
Course Objectives						
1. Understand the finiteness of the earth and environmental problems. Explain the measures against environmental problems. 2. Understand the actions needed to build a sustainable society.						
Rubric						
		Ideal Level	Standard Level		Minimum Level	
Achievement 1		Understand the finiteness of the earth and the relationship between humans and environmental problems, and explain the factors and measures of environmental problems.	Explain the factors and measures of environmental problems.		Understand an overview of global environmental problems.	
Achievement 2		Understand the way of thinking to build a sustainable society, and explain the measures in society. In addition, explain the skills required of an engineer.	Understand the way of thinking to build a sustainable society, and explain the measures in society.		Understand the way of thinking to build a sustainable society.	
Assigned Department Objectives						
Teaching Method						
Outline		We make use of finite resources to develop and use technology, while these activities are factors that cause environmental problems on a global and regional scale. Through this lecture, students will acquire a correct ethical view and knowledge of global environmental issues, and understand the way of thinking necessary to build a sustainable society as engineers.				
Style		The first half of the lecture is given in a lecture style. The second half of the lecture is a summary of a report on the role of own research in the construction of a sustainable society and the share through a presentation.				
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 r	3rd Quarter	1st	Guidance Building a sustainable society		Understand the ethical values needed to build a sustainable society.	
		2nd	Global warming (1)		Explain the mechanism of global warming.	
		3rd	Global warming (2)		Understand the relationship between global warming and human activities.	
		4th	Energy problems		Understanding the energy trilemma.	
		5th	Industrial waste treatment (1)		Understand the industrial waste problem in the present situation and explain the appropriate treatment methods.	
		6th	Industrial waste treatment (2)		Understand the industrial waste problem in the present situation and explain the appropriate treatment methods.	
		7th	Wastewater Treatment		Understand the industrial waste problem in the present situation and explain the appropriate treatment methods.	
		8th	Midterm examination			
	4th Quarter	9th	Explanation of report assignment Summarize in a report the role that own research plays in building a sustainable society (1)		The role of own research plays in building a sustainable society is considered and summarized in a report.	
		10th	Summarize in a report the role that own research plays in building a sustainable society (2)		The role of own research plays in building a sustainable society is considered and summarized in a report.	
		11th	Summarize in a report the role that own research plays in building a sustainable society (3)		The role of own research plays in building a sustainable society is considered and summarized in a report.	
		12th	Summarize in a report the role that own research plays in building a sustainable society (4)		The role of own research plays in building a sustainable society is considered and summarized in a report.	
		13th	Presentation (1)		Understand the role of engineers in building a sustainable society.	
		14th	Presentation (2)		Understand the role of engineers in building a sustainable society.	

		15th	Presentation (3)		Understand the role of engineers in building a sustainable society.	
		16th				
Evaluation Method and Weight (%)						
	Midterm/Final exam	Quiz	Portfolio	Presentation/Attitude	Other	Total
Subtotal	30	0	40	30	0	100
Basic Proficiency	20	0	20	0	0	40
Specialized Proficiency	10	0	20	20	0	50
Cross Area Proficiency	0	0	0	10	0	10

Anan College		Year	2024		Course Title	Internship 1
Course Information						
Course Code		5996K01		Course Category	Specialized / Elective	
Class Format				Credits	Academic Credit: 1	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		Year-round		Classes per Week	前期:1 後期:1	
Textbook and/or Teaching Materials		At the direction of the dispatch training supervisor / At the direction of the dispatch training supervisor				
Instructor		Yasuno Emiko,Zheng Tao				
Course Objectives						
1. Students can understand the situation of the training organization (company, research institute, university, etc.) and solve the given tasks. 2. Students can develop a practical and technical sense through practical training experiences and clarify their research objectives in the major.						
Rubric						
		Ideal Level		Standard Level		Minimum Level
Objective 1		Able to find and work on related issues after solving a given problem.		Able to respond appropriately to and resolve given issues.		Able to respond to and resolve given issues at a minimum.
Objective 2		Able to develop a practical and technical sense and apply it to research activities in the major.		Able to develop a practical and technical sense of the subject and explain its relationship to research activities in the major.		Able to develop a minimum of practical and technical sense and explain the relationship to research activities in the major.
Assigned Department Objectives						
Teaching Method						
Outline		Undertake specialized practical training at domestic and overseas companies, research institutes, universities, etc., to develop an understanding of practical problems and issues and the ability to respond appropriately.				
Style		45 hours of class time				
Notice		(1) Students must select one of the Internships 1 through 4, depending on the total duration of the internship. (2) Students must follow the instructions of their special research supervisor and the internship site supervisor, as the internship will be conducted at a company, research institute, etc. In principle, this internship is undertaken during the summer vacation period (internship period) of the first year of the major. (3) If practical training is conducted at multiple locations, a presentation and report must be prepared for each internship site. (4) Any extra time outside of the internship period must be devoted to special research.				
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				
		2nd				
		3rd				
		4th				
		5th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		6th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		7th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		8th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
	2nd Quarter	9th	Guidance and preliminary meeting		(1) Understand the purpose of the training in advance through guidance and pre-conference meetings, and be prepared to learn social rules, etc. (2) Understand the outline of the destination country and the content of the practical training.	
		10th	Practical training at the host institution		Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.	
		11th	Practical training at the host institution		Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.	

		12th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		13th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		14th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		15th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		16th		
2nd Semester	3rd Quarter	1st	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		2nd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		3rd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		4th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		5th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		6th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		7th	Internship debriefing	Internship debriefing presentations will provide an overview of the issues, solutions to those issues, and a summary of the internship.
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Quiz	Portfolio	Presentation and Attitude	Other	Total
Subtotal	0	0	80	20	0	100
Basic Proficiency	0	0	20	10	0	30
Specialized Proficiency	0	0	60	10	0	70
Cross Area Proficiency	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Internship 2
Course Information						
Course Code		5996K02		Course Category	Specialized / Elective	
Class Format				Credits	Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		Year-round		Classes per Week	前期:2 後期:2	
Textbook and/or Teaching Materials		At the direction of the dispatch training supervisor / At the direction of the dispatch training supervisor				
Instructor		Yasuno Emiko,Zheng Tao				
Course Objectives						
1. Students can understand the situation of the training organization (company, research institute, university, etc.) and solve the given tasks. 2. Students can develop a practical and technical sense through practical training experiences and clarify their research objectives in the major.						
Rubric						
		Ideal Level		Standard Level		Minimum Level
Objective 1		Able to find and work on related issues after solving a given problem.		Able to respond appropriately to and resolve given issues.		Able to respond to and resolve given issues at a minimum.
Objective 2		Able to develop a practical and technical sense and apply it to research activities in the major.		Able to develop a practical and technical sense of the subject and explain its relationship to research activities in the major.		Able to develop a minimum of practical and technical sense and explain the relationship to research activities in the major.
Assigned Department Objectives						
Teaching Method						
Outline		Undertake specialized practical training at domestic and overseas companies, research institutes, universities, etc., to develop an understanding of practical problems and issues and the ability to respond appropriately.				
Style		90 hours of class time				
Notice		(1) Students must select one of the Internships 1 through 4, depending on the total duration of the internship. (2) Students must follow the instructions of their special research supervisor and the internship site supervisor, as the internship will be conducted at a company, research institute, etc. In principle, this internship is undertaken during the summer vacation period (internship period) of the first year of the major. (3) If practical training is conducted at multiple locations, a presentation and report must be prepared for each internship site. (4) Any extra time outside of the internship period must be devoted to special research.				
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				
		2nd				
		3rd				
		4th				
		5th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		6th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		7th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		8th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
	2nd Quarter	9th	Guidance and preliminary meeting	(1) Understand the purpose of the training in advance through guidance and pre-conference meetings, and be prepared to learn social rules, etc. (2) Understand the outline of the destination country and the content of the practical training.		
		10th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.		
		11th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.		

		12th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		13th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		14th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		15th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		16th		
2nd Semester	3rd Quarter	1st	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		2nd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		3rd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		4th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		5th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		6th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		7th	Internship debriefing	Internship debriefing presentations will provide an overview of the issues, solutions to those issues, and a summary of the internship.
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Quiz	Portfolio	Presentation and Attitude	Other	Total
Subtotal	0	0	80	20	0	100
Basic Proficiency	0	0	20	10	0	30
Specialized Proficiency	0	0	60	10	0	70
Cross Area Proficiency	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Internship 3	
Course Information							
Course Code		5996K03		Course Category		Specialized / Elective	
Class Format				Credits		Academic Credit: 3	
Department		Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 1st	
Term		Year-round		Classes per Week		前期:3 後期:3	
Textbook and/or Teaching Materials		At the direction of the dispatch training supervisor / At the direction of the dispatch training supervisor					
Instructor		Yasuno Emiko,Zheng Tao					
Course Objectives							
1. Students can understand the situation of the training organization (company, research institute, university, etc.) and solve the given tasks. 2. Students can develop a practical and technical sense through practical training experiences and clarify their research objectives in the major.							
Rubric							
		Ideal Level		Standard Level		Minimum Level	
Objective 1		Able to find and work on related issues after solving a given problem.		Able to respond appropriately to and resolve given issues.		Able to respond to and resolve given issues at a minimum.	
Objective 2		Able to develop a practical and technical sense and apply it to research activities in the major.		Able to develop a practical and technical sense of the subject and explain its relationship to research activities in the major.		Able to develop a minimum of practical and technical sense and explain the relationship to research activities in the major.	
Assigned Department Objectives							
Teaching Method							
Outline		Undertake specialized practical training at domestic and overseas companies, research institutes, universities, etc., to develop an understanding of practical problems and issues and the ability to respond appropriately.					
Style		135 hours of class time					
Notice		(1) Students must select one of the Internships 1 through 4, depending on the total duration of the internship. (2) Students must follow the instructions of their special research supervisor and the internship site supervisor, as the internship will be conducted at a company, research institute, etc. In principle, this internship is undertaken during the summer vacation period (internship period) of the first year of the major. (3) If practical training is conducted at multiple locations, a presentation and report must be prepared for each internship site. (4) Any extra time outside of the internship period must be devoted to special research.					
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					
		2nd					
		3rd					
		4th					
		5th	Coordination of the recipient		Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		6th	Coordination of the recipient		Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		7th	Coordination of the recipient		Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		8th	Coordination of the recipient		Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
	2nd Quarter	9th	Guidance and preliminary meeting		(1) Understand the purpose of the training in advance through guidance and pre-conference meetings, and be prepared to learn social rules, etc. (2) Understand the outline of the destination country and the content of the practical training.		
		10th	Practical training at the host institution		Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.		
		11th	Practical training at the host institution		Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.		

		12th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		13th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		14th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		15th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		16th		
2nd Semester	3rd Quarter	1st	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		2nd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		3rd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		4th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		5th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		6th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		7th	Internship debriefing	Internship debriefing presentations will provide an overview of the issues, solutions to those issues, and a summary of the internship.
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Quiz	Portfolio	Presentation and Attitude	Other	Total
Subtotal	0	0	80	20	0	100
Basic Proficiency	0	0	20	10	0	30
Specialized Proficiency	0	0	60	10	0	70
Cross Area Proficiency	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Internship 4
Course Information						
Course Code		5996K04		Course Category	Specialized / Elective	
Class Format				Credits	Academic Credit: 4	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 1st	
Term		Year-round		Classes per Week	前期:4 後期:4	
Textbook and/or Teaching Materials		At the direction of the dispatch training supervisor / At the direction of the dispatch training supervisor				
Instructor		Yasuno Emiko,Zheng Tao				
Course Objectives						
1. Students can understand the situation of the training organization (company, research institute, university, etc.) and solve the given tasks. 2. Students can develop a practical and technical sense through practical training experiences and clarify their research objectives in the major.						
Rubric						
		Ideal Level		Standard Level		Minimum Level
Objective 1		Able to find and work on related issues after solving a given problem.		Able to respond appropriately to and resolve given issues.		Able to respond to and resolve given issues at a minimum.
Objective 2		Able to develop a practical and technical sense and apply it to research activities in the major.		Able to develop a practical and technical sense of the subject and explain its relationship to research activities in the major.		Able to develop a minimum of practical and technical sense and explain the relationship to research activities in the major.
Assigned Department Objectives						
Teaching Method						
Outline		Undertake specialized practical training at domestic and overseas companies, research institutes, universities, etc., to develop an understanding of practical problems and issues and the ability to respond appropriately.				
Style		180 hours of class time				
Notice		(1) Students must select one of the Internships 1 through 4, depending on the total duration of the internship. (2) Students must follow the instructions of their special research supervisor and the internship site supervisor, as the internship will be conducted at a company, research institute, etc. In principle, this internship is undertaken during the summer vacation period (internship period) of the first year of the major. (3) If practical training is conducted at multiple locations, a presentation and report must be prepared for each internship site. (4) Any extra time outside of the internship period must be devoted to special research.				
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				
		2nd				
		3rd				
		4th				
		5th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		6th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		7th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
		8th	Coordination of the recipient	Coordinating host families and preparing resumes and other documents to be submitted to the internship sites.		
	2nd Quarter	9th	Guidance and preliminary meeting	(1) Understand the purpose of the training in advance through guidance and pre-conference meetings, and be prepared to learn social rules, etc. (2) Understand the outline of the destination country and the content of the practical training.		
		10th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.		
		11th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.		

		12th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		13th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		14th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		15th	Practical training at the host institution	Through practical training at domestic and overseas companies, research institutes, universities, etc., be able to respond appropriately to issues under the supervision of the training supervisor at the destination country.
		16th		
2nd Semester	3rd Quarter	1st	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		2nd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		3rd	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		4th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		5th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		6th	Preparation of internship report, preparation for presentation	To be able to summarize the results of the internship in the form of a written report and oral presentation.
		7th	Internship debriefing	Internship debriefing presentations will provide an overview of the issues, solutions to those issues, and a summary of the internship.
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Quiz	Portfolio	Presentation and Attitude	Other	Total
Subtotal	0	0	80	20	0	100
Basic Proficiency	0	0	20	10	0	30
Specialized Proficiency	0	0	60	10	0	70
Cross Area Proficiency	0	0	0	0	0	0

Anan College		Year	2024		Course Title	Comparative Cultuology
Course Information						
Course Code		5117B02		Course Category	General / Compulsory	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 2nd	
Term		First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials		[Textbooks] None used. Printed materials distributed as needed. [Reference book] The Chrysanthemum and the Sword (Koudansha), Engineering Ethics Cross-cultural understanding for success in a global society (Jikkyou shuppan)				
Instructor		Fujii Taketo				
Course Objectives						
1. Able to deepen understanding of surrounding cultures through study of the history of international society (especially modern and contemporary) with a focus on East Asia. 2. Able to increase awareness as a Japanese, and explain the similarities and differences between the two cultures, through comparison of Japanese and Chinese cultures. 3. Able to deepen one’s own interest in different cultures from a linguistic perspective by practicing Chinese conversation.						
Rubric						
		Ideal Level		Standard Level		Minimum Level
Achievement 1		Able to give a detailed account of the history of the international community, including the East Asian region, especially in modern and contemporary periods.		Able to give an overview of the history of the international community, including the East Asian region, especially in the modern and contemporary periods.		Able to explain the main points of the history of international society, including the East Asian region, especially in modern and contemporary periods.
Achievement 2		Able to explain in detail the similarities and differences between Japanese culture and Chinese culture.		Able to give an overview of the similarities and differences between Japanese culture and Chinese culture.		Able to explain the main points of similarities and differences between Japanese culture and Chinese culture.
Achievement 3		Able to fully practice the basics of general Chinese conversation (speaking and listening).		Able to practice at least the basics of general Chinese conversation (speaking and listening).		Able to practice at least the basics of general Chinese conversation (speaking and listening).
Assigned Department Objectives						
Teaching Method						
Outline		Through comparison with other cultures, students will increase their awareness of their own underlying Japanese culture. In this lecture, we will focus on several issues related to the similarities and differences between Japanese culture and the cultures of East Asian countries other than Japan (China, Korea etc.). In particular, current events will be discussed as much as possible to raise students' awareness as engineers living in an international society.				
Style		Generally a lecture format, but we would like to set themes for discussion at each hour. Since this course is an Academic credit course, students will be required to write reports and impressions as pre- and post-learning activities. [Class time: 30 hours + Self-study: 60 hours]				
Notice		Students are expected to prepare for and review each lesson thoroughly. Chinese conversation practice will be interspersed throughout the lecture time as needed.				
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	The significance of comparing different cultures		Able to explain the necessity and points to keep in mind for cultural comparisons.	
		2nd	The significance of comparing different cultures		Able to explain the necessity and points to keep in mind for cultural comparisons.	
		3rd	The significance of comparing different cultures		Able to explain the differences between Japanese culture and Chinese culture with specific examples.	
		4th	China and Taiwan		Able to give an overview of the flow of modern and contemporary East Asian history with a focus on the People's Republic of China.	
		5th	China and Taiwan		Able to give an overview of the flow of modern and contemporary East Asian history, with a focus on Taiwan.	
		6th	Japanese and Chinese		Able to explain similarities and differences between Japanese and Chinese, mainly with regard to Chinese characters.	
		7th	Japanese and Chinese		Able to explain similarities and differences between Japanese and Chinese, mainly with regard to Chinese characters.	
		8th	China, Korea and Confucian Culture		Able to explain the traditional Confucian cultural influences, using China and Korea as examples.	
	2nd Quarter	9th	Japanese Culture and Chinese Culture		Able to give an overview of the influence of Chinese culture on Japanese culture, using specific examples.	

		10th	Japanese Culture and Chinese Culture	Able to give an overview of the influence of Chinese culture on Japanese culture, using specific examples.
		11th	Japanese Culture and Chinese Culture	Able to carry out elementary conversation through basic practice of Chinese conversation.
		12th	Japanese Culture and Chinese Culture	Able to carry out elementary conversation through basic practice of Chinese conversation.
		13th	Japanese Culture and Chinese Culture	Able to carry out elementary conversation through basic practice of Chinese conversation.
		14th	Japanese Culture and Chinese Culture	Able to carry out elementary conversation through basic practice of Chinese conversation.
		15th	Japanese Culture and Chinese Culture	Able to carry out elementary conversation through basic practice of Chinese conversation.
		16th	[Time for returning answers]	

Evaluation Method and Weight (%)

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

Anan College		Year	2024		Course Title	Language and Literature	
Course Information							
Course Code		5197A03		Course Category		General / Elective	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 2nd	
Term		Second Semester		Classes per Week		後期:2	
Textbook and/or Teaching Materials		KOSEN Japanese Ability Ⅱ (ANAN KOSEN)					
Instructor		Nishikori Hirofumi					
Course Objectives							
1. Able to express opinions on social themes by clearly demonstrating evidence. 2. Understand the historical background of representative waka literature and be able to explain the characteristics of its expression and cultural value.							
Rubric							
		Ideal Level		Standard Level		Minimum Level	
Achievement 1		Express opinions with appealing power by clearly demonstrating highly reliable evidence on social themes.		State opinions on social themes by clearly demonstrating reliable evidence.		State opinions on social themes by clearly showing evidence.	
Achievement 2		Understand the historical background of representative waka literature, and be able to appropriately explain the characteristics of its expression and cultural value, adding your own ideas.		Understand the historical background of representative waka literature and be able to appropriately explain the characteristics of its expression and cultural value.		Understand the historical background of representative waka literature and be able to explain the characteristics of its expression and cultural value.	
Assigned Department Objectives							
Teaching Method							
Outline		Cultivate the ability to make an appropriate plan and conduct research on social themes, present evidence with consideration for reliability, and express opinions with appealing power such as presentation skills. The course focuses on works and expressions in Japanese literature, cultivating the ability to understand the subject matter from the perspective of the author, the historical background in which the work was written, the expression and structure of the work, and the effects of expression. Through the experience of communicating these understandings to each other, students will deepen their logical understanding and ability to communicate, express themselves independently, and build consensus.					
Style		A report is required as pre- and post-learning. 30 hours of class time + 60 hours of self-study					
Notice		It is desirable to have taken Japanese Comprehensive and Japanese Expression.					
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	Selection of social themes		Select social themes using the brainstorming method and the KJ method (team).		
		2nd	Research on social themes		Able to use the Web, etc., to collect data with consideration of reliability and summarize opinions in a PPT.		
		3rd	Research on social themes		Able to use the Web, etc., to collect data with consideration of reliability and summarize opinions in a PPT.		
		4th	Sharing opinions on social themes		Share opinions based on the PPT presentation and mutually advise each other on research methods, evidence, and appeal.		
		5th	Sharing opinions on social themes		Share opinions based on the PPT presentation and mutually advise each other on research methods, evidence, and appeal.		
		6th	Expressing Opinions with Clear Evidence		Be able to document what you have captured through your study.		
		7th	Expressing Opinions with Clear Evidence		Be able to document what you have captured through your study.		
		8th	midterm examination		Study Summary		
	4th Quarter	9th	Manyoshu (Zouka)		Understand the characteristics of Zouka in Manyoshu, and be able to write actual works based on this understanding.		
		10th	Manyoshu (Soumon)		Understand the characteristics of Soumon in Manyoshu, and be able to write actual works based on this understanding.		
		11th	Manyoshu (Banka)		Understand the characteristics of Banka in Manyoshu, and be able to write actual works based on this understanding.		

		12th	Manyoshu (Azumauta, Sakimorinouta)	Understand the characteristics of Azumauta and Sakimorinouta in Manyoshu, and be able to write actual works based on this understanding.
		13th	Kokinshu and Shin-Kokinshu	Understand the characteristics of Tanka in Kokinshu and Shin-Kokinshu, and be able to write actual works based on this understanding.
		14th	Modern and Contemporary Tanka	Understand the characteristics of Modern and Contemporary Tanka, and be able to write actual works based on this understanding.
		15th	Modern and Contemporary Haiku	Understand the characteristics of Modern and Contemporary Haiku, and be able to write actual works based on this understanding.
		16th	Return of exam paper	Check your learning achievements.

Evaluation Method and Weight (%)

	midterm/final exam	quiz	portfolio	presentation/attitude	other	Total
Subtotal	80	0	20	0	0	100
Basic Proficiency	80	0	10	0	0	90
Specialized Proficiency	0	0	0	0	0	0
Cross Area Proficiency	0	0	10	0	0	10

Anan College		Year	2024		Course Title	Creative Technology System Eng. Special Research 2
Course Information						
Course Code	5917G01			Course Category	Specialized / Compulsory	
Class Format				Credits	Academic Credit: 10	
Department	Advanced Course of Creative Technology System Engineering			Student Grade	Adv. 2nd	
Term	Year-round			Classes per Week	5	
Textbook and/or Teaching Materials	Supervisors will make introductions as necessary.					
Instructor	Okamoto Hiroyuki,Nakamura Yuichi,Nishimoto Koji,Yasuno Emiko,Zheng Tao,Inoue Takafumi					
Course Objectives						
1. Able to reflect on the four years of study and exploration related to specialized subjects in the core major field. 2. Able to conduct literature reviews and learn experimental and theoretical research methods, and consider results from multiple perspectives. 3. Able to formulate a plan to solve a problem and execute it on their own. 4. Able to communicate research progress, results, and own considerations to others, and be able to fulfill one's role as a member of a team. 5. Able to to logically summarize the research content in a paper and summarize the research summary in English.						
Rubric						
		Ideal Level	Standard Level		Minimum achievement level	
Achievement 1		Able to fully reflect on their four years of study and exploration of specialized subjects in their core field of study.	Able to fully reflect on their four years of study and exploration of specialized subjects in their core field of study.		Able to reflect on their four years of study and exploration of specialized subjects in their core field of study.	
Achievement 2		Become familiar with literature research and experimental/theoretical research methods, and be able to appropriately consider results from multiple perspectives.	Able to study literature and learn experimental and theoretical research methods, and consider results from multiple perspectives.		Have acquired the basics of literature research and experimental/theoretical research methods. Able to consider the result from multiple angles.	
Achievement 3		Able to research on their own what is needed to solve problems and discuss it with their supervisors.	Able to carry out their research by considering their own opinions while discussing with their supervisors and others.		Able to carry out research under instructions from supervisor.	
Achievement 4		Able to understand their role in the team and actively communicate with their supervisor and other staff.	Able to communicate with supervisors and others and play the necessary role as a member of a team.		Able to have basic communication with your supervisor and play the minimum role as a member of a team.	
Achievement 5		Able to summarize research content logically and summarize research in English by oneself.	Able to logically summarize your research content by referring to your supervisor's instructions. Able to summarize your research summary in English by referring to the instructions.		Able to logically summarize research content according to the instructions of the supervisor. Able to create a research outline and English text according to the instructions of the supervisor.	
Assigned Department Objectives						
Teaching Method						
Outline	This course consists of a comprehensive exercise and special research. In the summary exercise, students reflect on the content of their major field that they have studied in their fourth and fifth years of regular study and in their first and second years of major study, as well as deepen their study of specialized subjects and related subjects that form the basis of special research. In addition, students will learn how to conduct literature research, prepare English summaries, and write reports, and acquire basic research techniques. In special research, students work on individual research topics under the supervision of their respective supervisors. Through this process, students will deepen their learning content regarding research and develop design abilities for problem discovery and problem solving. The results will be presented at special research conferences, etc. to develop presentation skills, and will be compiled into a special research paper to develop ethical thinking skills.					
Style	How to proceed will be explained in the first week based on the general table and individual table of the ``Implementation Plan for Lessons in Summary Subjects" and this syllabus. Evaluation will be performed by combining the evaluation of the summary exercise and special research. Special research will be evaluated based on special research papers, interim presentations, final presentations, the status of research efforts, etc. In the summary exercise, evaluation will be based on literature research, study reflection report, etc. The viewpoints and criteria for evaluation will be in accordance with the "Perspectives and standards for evaluating grades for learning/inquiry and their results (papers) in the 'Study Summary Subjects'" which will be distributed in the first week. [450 hours of class time]					
Notice	The summary exercise will be held for one period (90 minutes) every week, so please be sure to attend. In addition, please communicate thoroughly with your academic advisor to determine your research topic so that it is based on the courses you have learned in your regular course or the courses you will take in your major. When solving problems, be sure to include your own ideas and arguments and carry out research activities independently.					
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	Summary exercise	Literature survey related to the special research topic and summarize the research status in Japan and abroad.
		2nd	Summary exercise	Literature survey related to the special research topic and summarize the research status in Japan and abroad.
		3rd	Summary exercise	Literature survey related to the special research topic and summarize the research status in Japan and abroad.
		4th	Summary exercise	Literature survey related to the special research topic and summarize the research status in Japan and abroad.
		5th	Summary exercise	Literature survey related to the special research topic and summarize the research status in Japan and abroad.
		6th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
		7th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
		8th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
	2nd Quarter	9th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
		10th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
		11th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
		12th	Summary exercise	Reflect on their learning of specialized mechanical engineering subjects, specialized subjects that form the basis of special research, and related subjects that have been studied in the regular and major courses.
		13th	Summary exercise	Create a study summary course plan.
		14th	Summary exercise	Create a study summary course plan.
		15th	Summary exercise	Create a study summary course plan.
		16th		
2nd Semester	3rd Quarter	1st	Summary exercise	A study summary course study plan presentation will be held.
		2nd	Summary exercise	Exercises will be provided on how to write academic papers and how to make presentations.
		3rd	Summary exercise	Exercises will be provided on how to write academic papers and how to make presentations.
		4th	Summary exercise	Exercises will be provided on how to write academic papers and how to make presentations.
		5th	Summary exercise	Exercises will be provided on how to write academic papers and how to make presentations.
		6th	Summary exercise	Create an English summary for the special research interim presentation and receive correction guidance from your supervisor and English instructor.
		7th	Summary exercise	Create an English summary for the special research interim presentation and receive correction guidance from your supervisor and English instructor.
		8th	Summary exercise	Create an English summary for the special research interim presentation and receive correction guidance from your supervisor and English instructor.
	4th Quarter	9th	Summary exercise	Create an English summary for the special research interim presentation and receive correction guidance from your supervisor and English instructor.
		10th	Summary exercise	Create a summary of the summary subject results and a special research paper.

		11th	Summary exercise	Create a summary of the summary subject results and a special research paper.
		12th	Summary exercise	Create a summary of the summary subject results and a special research paper.
		13th	Summary exercise	Create a summary of the summary subject results and a special research paper.
		14th	Summary exercise	Create a summary of the summary subject results and a special research paper.
		15th	Summary exercise	Create a summary of the summary subject results and a special research paper.
		16th		

Evaluation Method and Weight (%)

	Examination	Portfolio	Presentation / Approach attitude	Others	Total
Subtotal	0	15	15	70	100
Basic Proficiency	0	0	0	0	0
Specialized Proficiency	0	10	10	45	65
Cross Area Proficiency	0	5	5	25	35

Anan College		Year	2024		Course Title	Creative Technology Seminar
Course Information						
Course Code		5917T01		Course Category	Specialized / Compulsory	
Class Format				Credits	Academic Credit: 1	
Department		Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 2nd	
Term		First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials		Textbook and/or Teaching materials introduced by each instructor				
Instructor		Okamoto Hiroyuki,Nishimoto Koji,Kozai Takanori,Kamano Masaru,Ota Kengo,Nakamura Atsunobu,Kozai Takanori,Kadono Takuma				
Course Objectives						
1. Able to understand scientific and technical literature in various fields, and explain its contents. 2. Able to understand social demands and issues in each field, and explain their contents.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Achievement 1		Able to understand the content of scientific and technical literature in each field and able to summarize it in a report, including one's own considerations.		Able to understand the content of scientific and technical literature in each field and able to summarize the content in a report.		Able to understand the basic matters of scientific and technical literature in each field and able to summarize the matters in a report.
Achievement 2		Able to understand social demands and issues in each field and able to propose solutions.		Able to understand and explain social demands and issues in each field.		Able to explain basic matters regarding social demands and issues in each field.
Assigned Department Objectives						
Teaching Method						
Outline		The aim of the course is to increase students' research and learning motivation and broaden their technical perspective by learning the latest technological information possessed by each instructor.				
Style		Each instructor brings a different topic and introduces the latest technological information.				
Notice		Students should not only listen to what their instructors explain, but also always keep in mind the types of problems that society requires and the engineering problems associated with the topic.				
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	Laser welding		Able to read and understand literature related to laser welding.	
		2nd	Laser welding		Able to read and understand literature related to laser welding.	
		3rd	Examples of using the latest information technology		Able to learn about examples of the use of information technology and understand the needs of society and the evolution of information technology.	
		4th	Examples of using the latest information technology		Able to learn about examples of the use of information technology and understand the needs of society and the evolution of information technology and summarize them in a report.	
		5th	LED usage examples and advanced technology		Able to learn about LED technology and explore application examples and product examples that utilize it.	
		6th	LED usage examples and advanced technology		Able to Investigate latest research on LEDs that society demands and understand its contents.	
		7th	Fundamentals and applications of deep learning ~ Focusing on ChatGPT ~		Able to understand the basic principles of deep learning, including neural networks.	
		8th	Fundamentals and applications of deep learning ~ Focusing on ChatGPT ~		Able to research literature on application examples of deep learning such as dialogue systems and summarize them in a report.	
	2nd Quarter	9th	mid term exam			
		10th	Fullerene and carbon nanotubes		Able to explain the structure and characteristics of fullerene and carbon nanotubes.	
		11th	Fullerene and carbon nanotubes		Able to research literature on application examples of carbon nanotubes and summarize them in a report.	
		12th	Fundamentals and applications of optics (femtosecond laser technology and research)		Able to learn technology related to light and lasers and able to explain its contents.	
		13th	Fundamentals and applications of optics (femtosecond laser technology and research)		Able to research literature on application examples and research related to light and lasers and summarize them in a report.	
		14th	Quality control in public works		Able to explain quality control in public works.	

		15th	Quality control in public works		Able to research literature on quality control in public works and summarize them in a report.		
		16th	Term-end exam, return marked exam papers				
Evaluation Method and Weight (%)							
	Examination		Quiz	Portfolio	Behavior	Other	Total
Subtotal	40		0	60	0	0	100
Basic Proficiency	0		0	0	0	0	0
Specialized Proficiency	40		0	60	0	0	100
Cross Area Proficiency	0		0	0	0	0	0

Anan College		Year	2024	Course Title	Practice for Creative Technology
Course Information					
Course Code	5917T02		Course Category	Specialized / Compulsory	
Class Format			Credits	Academic Credit: 2	
Department	Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 2nd	
Term	First Semester		Classes per Week	前期:4	
Textbook and/or Teaching Materials	Timely distribution of materials				
Instructor	Nakamura Yuichi,Nishimoto Koji,Okamoto Hiroyuki				
Course Objectives					
1. Able to discover, consider, and solve problems through discussion form teams with students of different courses. 2. Able to research the information needed to solve a problem by using various documents. 3. Able to analyze the information obtained and find solutions to your own challenges. 4. Able to fulfill one's role in a team and create a cohesive technical document together with everyone. 5. Able to give an easy-to-understand presentation about progress and final results.					
Rubric					
	Ideal Level		Standard Level		Minimum achievement level
Achievement 1	Able to form a team with students from different majors, demonstrate leadership, and organize discussions as a team.		Able to actively participate in discussions, and summarize the discussions as a team with students from different majors.		Able to participate in discussions, and summarize the discussions as a team with students from different majors.
Achievement 2	Able to research the information necessary to solve a problem by using various documents and using one's own initiative.		Able to research information necessary to solve problems by collaborating with others and using various documents.		Able to research the information necessary to solve a problem by using various documents and using one's own initiative.
Achievement 3	Able to compare and integrate own ideas with those of others and propose improvements.		Able to come up with solutions through discussions in a team made up of students majoring in other fields.		Able to come up with solutions in a team made up of students majoring in other fields.
Achievement 4	Able to actively create technical documents related to inventions and business proposals with leadership.		Able to proactively create technical documents related to inventions and business proposals.		Able to create technical documents related to inventions and business proposals.
Achievement 5	Able to proactively and clearly give presentations on progress status and final results with leadership.		Able to give an easy-to-understand presentation about progress and final results.		Able to give presentations about progress status and final results.
Assigned Department Objectives					
Teaching Method					
Outline	Aiming to step up from knowledge-understanding to creativity-cultivating engineers, students take the initiative and work together as team members, combining their own ideas and discussing with each other to compile technical documents. The aim is to develop comprehensive "manufacturing" skills. This subject is taught in an exercise format based on design thinking.				
Style	Teams are formed with students from different majors, and they work on everything from determining themes and plans, researching prior art, creating plans, and writing invention and business proposals. Through team activities, students also acquire leadership and membership skills. Since this subject is an academic unit subject, you will be required to submit a report as part of your pre- and post-study studies. [60 hours of class time + 30 hours of self-study time]				
Notice	Careful consideration should be given to students within the group. In addition, students should steadily carry out everything from deciding on a theme, creating technical documents, and creating patent contest application documents while referring to comments from instructors.				
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 Idea thinking (individual)	Able to understand the purpose of the lesson. Able to think and come up with ideas.	
		2nd	Idea thinking (individual) Market research (individual)	Able to think and come up with ideas. Able to search for related prior art, patents, etc.	
		3rd	Idea thinking (individual) Market research (individual)	Able to think and come up with ideas. Able to search for related prior art, patents, etc.	
		4th	Idea presentation (individual)	Able to explain ideas.	
		5th	Idea thinking (group) Market research (group)	Able to think and come up with ideas collaboratively in a group. Able to search for related prior art, patents, etc.	
		6th	Idea thinking (group) Market research (group)	Able to think and come up with ideas collaboratively in a group. Able to search for related prior art, patents, etc.	
		7th	Group presentation/discussion/information sharing	Able to explain ideas.	

		8th	Idea thinking/materialization (group) Market research (group)	Able to think and come up with ideas collaboratively in a group. Able to make ideas concrete (diagrams). Able to search for related prior art, patents, etc.
	2nd Quarter	9th	Idea thinking/materialization (group) Market research (group)	Able to think and come up with ideas collaboratively in a group. Able to make ideas concrete (diagrams). Able to search for related prior art, patents, etc.
		10th	Idea thinking/materialization (group) Market research (group)	Able to think and come up with ideas collaboratively in a group. Able to make ideas concrete (diagrams). Able to search for related prior art, patents, etc.
		11th	Presentation of concrete works and market research	Able to explain the specific content of ideas, prior art, patents, etc.
		12th	Invention/business proposal creation	Able to create invention/business proposals based on your results.
		13th	Invention/business proposal creation	Able to create invention/business proposals based on your results.
		14th	Presentation of invention/business proposal	Able to explain the proposal.
		15th	Submission of invention/business proposal	Able to complete invention/case proposals for patent contests.
		16th		

Evaluation Method and Weight (%)

	Examination	Portfolio	Presentation / Approach attitude	Total
Subtotal	0	50	50	100
Basic Proficiency	0	0	0	0
Specialized Proficiency	0	25	25	50
Cross Area Proficiency	0	25	25	50

Anan College		Year	2024		Course Title	Advanced Physics	
Course Information							
Course Code		5997F05		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Advanced Course of Creative Technology System Engineering		Student Grade		Adv. 2nd	
Term		Second Semester		Classes per Week		後期:2	
Textbook and/or Teaching Materials		10 Lectures on Quantum Mechanics (Shoho Tanimura, The University of Nagoya Press)					
Instructor		Sonoda Akihiko					
Course Objectives							
Explain the difference between micro and macro using thought experiment. Use Dirac's bra-ket formalism. Explain the Born rule. Explain Hermitian conjugate and Hermitian operators. Calculate the eigenvalues and eigenvectors with a simple example. Compute unitary transformations and matrix diagonalization. Compute the probability of a particle on a circumference or on a straight line. Explain Born's probability formula. Compute Pauli matrices. Derive the expressions of Robertson uncertainty relation and Kennard uncertainty relation. Describe the violation of the CHSH inequality. Solve time evolution equations for two-state systems. Compute the energy eigenvalues of harmonic oscillator using the generation and annihilation operators. Describe the wavefunctions of a harmonic oscillator with Hermite polynomials.							
Rubric							
		Ideal Level		Standard Level		Minimum Level	
State vectors and operators		Able to discuss the necessity of infinite dimensional Hilbert spaces and find continuous spectrum of a particle.		Able to calculate the creation and annihilation operators of harmonic oscillators, and can find the eigenfunctions and energy eigenvalues.		Able to calculate a simple example of state vectors and operators.	
Probability interpretations on quantum mechanics		Able to explain wave packet contraction and interference effects and calculate probabilities		Able to determine the probability with a simple example.		Able to explain the difference between micro and macro using thought experiment.	
Quantum effects and the problems		Able to explain entanglement and uncertainty relations and solve the applied problems.		Able to solve the standard examples of entanglement and uncertainty relationships.		Able to compute the simple examples of uncertainty relations.	
Assigned Department Objectives							
Teaching Method							
Outline		Quantum mechanics is the theory which mathematically describes the properties and laws of motion for microscopic objects such as atoms and electrons to predict phenomena in the microscopic world. Quantum mechanics is also related to engineering, and is fundamental to all fields of materials properties such as metals, semiconductors, superconductivity, quantum information, quantum computers, quantum chemistry, and so on. In this lecture, we introduce the idea of quantum mechanics and explain abstract concepts based on linear algebra, such as Hilbert space, state vectors, probability, operators representing physical quantities, matrix representations, and unitary transformations. Then, the main topics of the course are position and momentum, quantum effects of noncommutative physical quantities, composite systems and entanglement, equations of motion, and finally, harmonic oscillator as a concrete example. The course also includes a review of mathematics, if necessary.					
Style		Students are expected to speak up actively in the lectures and ask questions that they do not understand or have questions about. Also, actively discuss with your friends and seniors. The cycle of preparation→lecture→review is important so that students can quantitatively understand their level of understanding.					
Notice		It is assumed that the students understand the contents of physics and mathematics studied in the regular course and the advanced course. If necessary, the students should review them before taking 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	Fundamental concept in quantum mechanics		Explain the difference between micro and macro using thought experiment		
		2nd	State vectors		Use Dirac's bra-ket formalism		
		3rd	Born rule		Explain the Born rule		
		4th	Operators		Explain Hermitian conjugate and Hermitian operators		
		5th	Eigenvalues and Eigenvectors		Calculate the eigenvalues and eigenvectors with a simple example		
		6th	Matrix representation, unitary transformation and diagonalization		Compute unitary transformations and matrix diagonalization		
		7th	Position and momentum		Compute the probability of a particle on a circumference or on a straight line		
		8th	Midterm examination				
	4th Quarter	9th	Commutative physical quantities and joint probabilities		Explain Born's probability formula		
		10th	Quantum effects of noncommutative physical quantities		Compute Pauli matrices		
		11th	Uncertainty relation		Derive the expressions of Robertson uncertainty relation and Kennard uncertainty relation		

		12th	Composites systems and entanglement	Describe the violation of the CHSH inequality
		13th	Equation of motion	Solve time evolution equations for two-state systems
		14th	Energy eigenvalues of a harmonic oscillator	Compute the energy eigenvalues of harmonic oscillator using the generation and annihilation operators.
		15th	Wavefunctions of a harmonic oscillator	Describe the wavefunctions of a harmonic oscillator with Hermite polynomials
		16th	Return of final examination	

Evaluation Method and Weight (%)						
----------------------------------	--	--	--	--	--	--

	Midterm/final exam	Quiz	Portfolio	Presentation/attitude	Other	Total
Subtotal	50	20	30	0	0	100
Basic Proficiency	25	20	15	0	0	60
Specialized Proficiency	25	0	15	0	0	40
Cross Area Proficiency	0	0	0	0	0	0

Anan College		Year	2024	Course Title	Applied Analysis
Course Information					
Course Code	5997F06		Course Category	Specialized / Elective	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Advanced Course of Creative Technology System Engineering		Student Grade	Adv. 2nd	
Term	First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials	Enshu to Ouyou Bekutoru Kaiseki, Saiensu Sha				
Instructor	Sugino Ryuzaburo				
Course Objectives					
1. We can understand space vector and its functions, and compute of its fundamental computation. 2. We can understand space curve and its curved surface and compute of its fundamental computation. 3. We can understand scalar field and vector field and compute of its fundamental problems.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	We can understand space vector and its functions, and we compute of its fundamental computation and apply these for the various problems.		We can understand space vector and its functions, and we compute of its fundamental computation.		We can understand space vector and its functions, and we compute of its elementary computation.
Achievement 2	We can understand space curve and its surface, and we compute of its fundamental computation and apply these for the various problems.		We can understand space curve and its surface, and we compute of its fundamental computation problems.		We can understand space curve and its surface, and we compute of its elementary computation problems.
Achievement 3	We can understand scalar field and vector field, and we compute of its fundamental computation and apply these for the various problems.		We can understand scalar field and vector field, and we compute of its fundamental computation.		We can understand scalar field and vector field, and we compute of its elementary computation.
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 vector functions and its various problems made from physics.				
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	
1st Semester	1st Quarter	1st	Vector Algebra	We can understand the various vector products and compute its fundamental problems.	
		2nd	Vector function and its Calculus	We can understand the derivatives of vector and compute its fundamental problems.	
		3rd	Vector function and its Calculus	We can understand the integrals of vector and compute its fundamental problems.	
		4th	Space Curves	We can understand the representation of vector function and its curves and compute its fundamental problems.	
		5th	Space Surface	We can understand the arc length parametric representation of vector function and its curves and compute its fundamental problems.	
		6th	Mechanics and Vector Function	We can understand the relation mechanics and the functions and compute its fundamental problems.	
		7th	Space Surface	We can understand the parametric representation and its surface and compute its fundamental problems.	
		8th	Mid-term examination		
	2nd Quarter	9th	Scalar and Vector Field	We can understand the characteristic of scalar field and Hamilton operator and compute its fundamental problems.	
		10th	Scalar and Vector Field	We can understand the line integrals of scalar and vector field and compute its fundamental problems.	

		11th	Scalar and Vector Field	We can understand the area integrals of scalar and vector and compute its fundamental problems.
		12th	Integral Theorem	We can understand the integral theorems of Gauss, Green, Stokes and compute its fundamental problems.
		13th	Integral Theorem	We can understand laminar vector field and solenoidal one and compute its fundamental problems.
		14th	Orthogonal Curve coordinates	We can understand the characteristic of implicit function and compute its fundamental problems.
		15th	Orthogonal Curve coordinates	We can understand the calculus with coordinate transformation and compute its fundamental problems.
		16th	Final examination	

Evaluation Method and Weight (%)

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