Ak	kashi College			Mechanical and Electronic System Engineering					Year	Year		2023			
De	par	tment Goals													
Cou e Cat	eg	Course Title	Cours e Code	Credit Type	Credit s	Class Adv. 1st	Hours p	per Wee	k	Adv.	2nd Y	2nd		Instru ctor	Divisio n in Learni
ory						1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		ng
Ge ne ral	Co m pu lso ry	Ethics for Engineers	5001	Acade mic Credit	2			2						ITOH Hitoshi	
Ge ne ral	Co m pu lso ry	Global Studies	5002	Acade mic Credit	2	2								ARAK AWA Hirono ri	
Ge ne ral	El ec tiv e	Geophysics	5003	Acade mic Credit	2			2						YOKO YAMA Masah iko	
Ge ne ral	El ec tiv e	Introduction to Nano Materials Design	5004	Acade mic Credit	2	2								NAKA NISHI Hirosh i	
Ge ne ral	El ec tiv e	Culture and Communication	5005	Acade mic Credit	2	2								INOUE Hideto shi	
Ge ne ral	El ec tiv e	Overseas Training	5006	School Credit	2	2		2							
Sp eci ali ze d	Co m pu Iso ry	Creative Faculty Development	5007	School Credit	2			4						NAKA NISHI Hirosh i	
alı	Co m pu	Engineering Topics for Advanced Course Students	5008	Acade mic Credit	2			2						FUJIW ARA Seiji, WATA NABE Moriyo shi,HI RAISH I Toshih iro,NA KANIS HI Hirosh i,NOM URA Hayat	
Sp eci ali ze d	Co m pu Iso ry	Engineering Presentation I	5009	School Credit	1	2								NAKAI Yuichi, ISHIM ATSU Kazuhi to	
Sp eci ali ze d	Co m pu lso ry	Industrial Materials	5010	Acade mic Credit	2	2								MORIS HITA Tomo hiro,K AJIMU RA Yoshih iro,TA KEDA Naho, HIRAI SHI Toshih iro	
Sp eci ali ze	El ec tiv e	Information Processing	5011	Acade mic Credit	2	2								INOUE Kazun ari	

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Sp eci ali ze d	El ec tiv e	Analytical Mechanics	5012	Acade mic Credit	2	2				NAKA NISHI Hirosh
Sp eci ali ze d	El ec tiv e	Inclusive Design	5013	Acade mic Credit	2	2				OTSU KA Takehi ko,AKI TA Naoshi ge,IW ATA Naoki, HIRAI Yasuy uki,OK AMUR A Hideki
Sp eci ali ze d	Co m pu lso ry	Off-Campus Practical Training	5014	School Credit	2	2	2			
Sp eci ali ze d	Co m pu lso ry	Preliminary Research Studies	5015	School Credit	4	4	4			
Sp eci ali ze d	El ec tiv e	System Control Engineering	5016	Acade mic Credit	2	2				ENOM OTO Ryuji
Sp eci ali ze d	El ec tiv e	Advanced Instrumentation Engineering	5017	Acade mic Credit	2	2				FUJIW ARA Seiji
Sp eci ali ze d	El ec tiv e	Random Signal Analysis	5018	Acade mic Credit	2		2			INOUE Kazun ari
Sp eci ali ze d	El ec tiv e	Advanced Electromagnetics	5019	Acade mic Credit	2		2			
Sp eci ali ze d	El ec tiv e	Advanced Strength of Materials	5020	Acade mic Credit	2		2			MORIS HITA Tomo hiro
Sp eci ali ze d	El ec tiv e	Production Systems	5021	Acade mic Credit	2	2				OHMO RI Shiget oshi
Sp eci ali ze d	El ec tiv e	Energy Technology I	5022	Acade mic Credit	2		2			FUJIW ARA Seiji
Sp eci ali ze d	El ec tiv e	Tribology	5023	Acade mic Credit	2		2			ABO Masay oshi
Sp eci ali ze d	El ec tiv e	Advanced Electrical Circuits	5024	Acade mic Credit	2		2			HOSO KAWA Atsuis hi
Sp eci ali ze d	El ec tiv e	Advanced Heat Transfer	5025	Acade mic Credit	2		2			KUNI MINE Kanji
Ge ne ral	El ec tiv e	Environmental Science	5026	Acade mic Credit	2			2		WATA NABE Moriyo shi,HI RAISH I Toshih iro

Sp eci ali ze d	Co m pu iso ry	Engineering Presentation II	5027	School Credit	1		KUNI MINE Kanji, HIRAI SHI Toshih iro
Sp eci ali ze d	Co m pu lso ry	Research Studies	5028	School Credit	8	8 8	
Sp eci ali ze d	El ec tiv e	Mechatro-system	5029	Acade mic Credit	2		SEKIM ORI Daisuk e
Sp eci ali ze d	El ec tiv e	Computational Mechanics	5030	Acade mic Credit	2		KUNI MINE Kanji
Sp eci ali ze d	El ec tiv e	Energy Technology II	5031	Acade mic Credit	2		TANA KA Seiichi
Sp eci ali ze d	El ec tiv e	Strength and Fracture of Materials	5032	Acade mic Credit	2		MORIS HITA Tomo hiro
Sp eci ali ze d	El ec tiv e	Optoelectronics Devices	5033	Acade mic Credit	2		SUYA MA Taikei
Sp eci ali ze d	El ec tiv e	Algorithms	5034	Acade mic Credit	2		HAMA DA Yukihir o
Sp eci ali ze d	El ec tiv e	Advanced Electronic Circuit	5035	Acade mic Credit	2		INOUE Kazun ari
Sp eci ali ze d	1	Mathematical Informatics	5036	Acade mic Credit	2		HAMA DA Yukihir o
Sp eci ali ze d	El ec tiv e	Optimization Design	5037	Acade mic Credit	2		SHI Fengh ui
Sp eci ali ze d	El ec tiv e	Micromachine	5038	Acade mic Credit	2		MATS UZUK A Naoki

Akashi College Course Information			Year	2023			ourse Title	Ethics for Engineers	
Course	Informa	tion	1	•					
Course Co		5001			Course Categor	γ	General /	Compulsory	
Class For	mat	Lecture			Credits Academic Credit: 2				
Departme	ent	Mechanic Engineeri	al and Electronic ng	System	Student Grade Adv. 1st				
Term		Second S	emester		Classes per We	ek	2		
Textbook Teaching		齊藤・坂↑	下編:「はじめての	工学倫理」、昭和堂	and Printed ma	terials			
Instructor	r	ITOH Hito	oshi						
Course	Objectiv	es							
(2) Under (3) Have (4) Devel understar	rstand wha sufficient l op the abi nding and	it ethical iss knowledge o ity to devise knowledge o	ues engineers m of the important : e effective solution of (1) to (3).	ay face in their da social svstems rela	y-to-day work. Ited to engineers Cal issues that er	s when nginee	dealing wrs will enc	gineers have in response to them. With the above-mentioned issues. Ounter, based on the	
Rubric				, ,					
			Ideal Level		Standard Level			Unacceptable Level	
Achievem	ent 1		Fully understa characteristics job and their e responsibilities	of an engineer's ethical	Understand the of an engineer's ethical responsi	s job a	nd their	Do not fully understand the characteristics of an engineer's job and their ethical responsibilities.	
Achievem	ent 2		Fully understa	nd what ethical ers may face.	Understand wh engineers may		cal issues	Do not understand what ethical issues engineers may face.	
Achievement 3			Have sufficient the important related to engi	knowledge of social systems neers.	Have knowledg important socia to engineers.	e of th	ems relate	Do not have knowledge of the important social systems related to engineers.	
			Fully have the effective soluti issues that engencounter.	ability to devise ons for ethical gineers will	Have the ability to devise effective solutions for ethical issues that engineers will encounter.			Do not have the ability to devise effective solutions for ethical issues that engineers will encounter.	
Assigne	d Depar	tment Ob	jectives						
Teachin	g Metho	d							
Outline		technolog their experience	gy is used by hig ertise. This respo	hly trained engined onsibility is now be pecific details of th	ers who have a r coming more im	respon portar	sibility to s nt, and so	echnology. This science and society to use it properly based on cial interest is growing, too. This lear, what problems may arise in	
Style		Classes w	vill be held in a le	ecture style. At the opinions, etc. and				uld write and submit a summary I report.	
Notice		guarante assignme accidents the class.	se's content will amount to 90 hours of study in total. These hours include the learning time sed in classes and the standard self-study time required for pre-study / review, and completing ent reports. The class will use videos, newspaper articles. etc., and take many examples from reces and corporate morals. Reference materials and other materials are introduced as appropriate du. Therefore, we would like students to show interest in areas other than their specialty field. who miss 1/3 or more of classes will not be eligible for a passing grade.						
Charact	eristics		Division in Le				<u> </u>		
	Learning	,	☐ Aided by IC	_	☑ Applicable to	o Remo	ote Class	☐ Instructor Professionally Experienced	
Course	Plan								
204130		-	 Γheme			Goals			
1		1st k	Why engineering Why is it necessa engineers to lear between enginee social background the engineerir	ethics? nry for those who a n ethics? Clarify th rs and ethics throud, the codes of eth ng academic societ n their significance	ne links ugh today's lics established lies, etc., and	Under ethics		links between engineers and today's social background and the	
2nd	3rd	2nd t	Deal with the spa the most famous	e Challenger accide ace shuttle Challen case in engineerir ions made by the o organization.	ger accident, ng ethics, and		decisions	characteristics and relationships made by the engineers and	
Semeste	Quarter	3rd F	Following the pre Challenger accide Tesponsibilities er	e Challenger disast evious class, use thent as a guide and ngineers have for management func	ne case of the consider what making	requir		responsibilities and abilities neers for organization risk	
	_	4th	The Tokaimura Ju Jse the JCO critic consider the sign that have suppor ndustry, the cha	CO criticality accident as a cality accident as a ificance of improve ted the Japanese Illenges facing ther engage with them	an example to ement activities manufacturing m, and how		stand the vement ac	significance and challenges of tivities.	

The Tokamura JCO critically accident 2 critically accident 2 critically accident to discuss group thinking, and how technicians should deal with it to ensure safety and quality. Whiteblowing 1 Whiteblowing 2 Whiteblowing 2 Whiteblowing 2 Whiteblowing 2 Whiteblowing 2 Whiteblowing 3 Whiteblowing 4 Whiteblowin											
Whistleblowing 1			5th		Following the previous criticality accident to d which collective organi how technicians should	class, use the JCO liscuss group thinking, izations are prope to, and	the a	abilities needed to o			
Following the previous class, deal with witstletbowing. An increasing numbers of such as part of their efforts to enhance their compliance systems. Examine this trend's significance in the relationship between organizations and individuals. Product Liability Act. Review the fact that the relationship between organizations and individuals. Product Liability Act. Review the fact stabilish it as a manufacturing belief. Intellectual properties. Confirm the significance of the product Liability Act and become able to use it as a manufacturing belief. Intellectual properties. Confirm the significance of the patent, copyright. Confirm the significance of the patent, copyright. Confirm the significance of the patent, copyright. Confirm the significance of the patent accompany information technology development, etc. The Bhopal disaster 1 10th 1story—as an example to discuss the further in history—as an example to discuss the dead with overseas industrial activities as globalization progresses. The Bhopal disaster 2 Based on the previous class, example the fact because the further in this or the previous class and significance of failure studies and topics such as Heinrich's law in the fact because the fact because the further in the fact because the f			6th		Whistleblowing 1 Discuss the purpose of whistleblower protectic current laws, and the	on system, ćriticisms of the relationship between this	e Acqu prote	uire knowledge of t ection system, and	he whistleblower understand its issues.		
Review the details of the Product Liability Act—which is said to be the most relevant law for engineers—and discuss that it is mynotrant for pelifer Intellectual properties Confirm the significance of the patent, copyright, and other systems for technology development, and examine the issues, etc., facing them that accompany information technology development, and examine the issues, etc., facing them that accompany information technology development, and examine the issues, etc., facing them that accompany information technology development, the through the state of the product liability and understand their significance in the through disaster 1 the through the state of the product liability and understand their significance in the through the state of the product liability and understand their significance in the second of the product liability and understand their significance in manufacturing. Acquire knowledge of intellectual property rights and understand their significance in manufacturing. Acquire knowledge of the issues faced in overseas industrial activities and expression described in history—as an example to discuss the further increasing problems associated with overseas industrial activities as globalization progresses. The Bropangial fills revolving door accident 1 Introduces the activities of the Door Project, which took place after the revolving door accident, and discuss the ideas and significance of failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies and topics such as Heinrich's law in failure studies			7th		Following the previous whistleblowing. An inc companies have estab part of their efforts to systems. Examine this relationship between of	reasing number of lished help desks, etc. as enhance their compliance trend's significance in the	ensu				
Subtotal			8th		Review the details of t Act—which is said to be engineers—and discus engineers to establish	e the most relevant law fo s that it is important for	" Liabi	ility Act and becom	edge of the Product e able to use it as a		
10th			9th		Confirm the significant and other systems for and examine the issue accompany informatio	technology development, es, etc., facing them that	and	understand their si			
Based on the previous class, examine the fact that there is a need for engineers to take into account that technology development is deeply related to the interaction between social conditions, culture, history, and thoughts, etc., that surround it. The Roppongi Hills revolving door accident 1 Introduces the activities of the Door Project, which took place after the revolving door accident of failure studies and topics such as Heinrich's law in risk management. The Roppongi Hills revolving door accident of failure studies and topics such as Heinrich's law in risk management. The Roppongi Hills revolving door accident of failure studies and topics such as Heinrich's law in risk management. The Roppongi Hills revolving door accident of failure studies and topics such as Heinrich's law in risk management. The Roppongi Hills revolving door accident of failure studies and topics such as Heinrich's law in risk management. The Roppongi Hills revolving door accident of failure studies and topics such as Heinrich's law in risk management. The Roppongi Hills revolving door accident of failure studies and topics such as the previous class, discuss how engineers also have their own culture as engineers also have their own culture as engineers and that it is important to pass down knowledge to overcome the problems that result from this. Universal design Universal design and the systems necessary for achieving it.			10th		Use the agricultural ch Bhopal, India—the big history—as an exampl increasing problems as	gest industrial accident in e to discuss the further ssociated with overseas	Acqı				
Ath Quarter			11th		Based on the previous that there is a need fo account that technolog related to the interacti social conditions, cultured	r engineers to take into gy development is deeply on between	learr	n effective methods			
Based on the previous class, discus how engineers also have their own culture as engineers, and that it is important to pass down knowledge to overcome the problems that result from this. Universal design		4th Quarter	er 12th		Introduces the activities which took place after accident, and discuss the failure studies and top	es of the Door Project, the revolving door the ideas and significance o	of Hein	Acquire knowledge of failure studies and Heinrich's law.			
14th Confirm that there is a political aspect to new technology development that gives birth to new power struggles and discrimination, whereas universal design is an attempt to democratize it. The scope of engineering ethics New technology developments by engineers have had a variety of impacts in sectors such as information society and medical care. Consider the sort of relation that engineers should have to ethics in these other areas. 16th No final exam Short Reports & Presentation Short Reports & Presentation Total			13th		Based on the previous engineers also have th engineers, and that it knowledge to overcom	class, discus how heir own culture as is important to pass down	tech	technology effectively, it is necessary to properly understand and communicate technology ideas. Understand the concept of universal design and			
New technology developments by engineers have had a variety of impacts in sectors such as information society and medical care. Consider the sort of relation that engineers should have to ethics in these other areas. 16th No final exam			14th		Confirm that there is a technology developme power struggles and d	ent that gives birth to new iscrimination, whereas					
Evaluation Method and Weight (%) Final Report Subtotal Basic Proficiency Specialized Proficiency O Final Report Short Reports & Presentation Reports & Presentation Total Total 100 100 100 100 0 0 0			15th		The scope of engineering ethics New technology developments by engineers have had a variety of impacts in sectors such as information society and medical care. Consider the sort of relation that engineers should			and modern society and what their place in it			
Final Report Short Reports & Presentation Subtotal Basic Proficiency Final Report Short Reports & Presentation Fresearcher 100 100 100 5pecialized Proficiency 0 0 0 0			16th		No final exam						
Final Report Reports & Presentation researcher Total Subtotal 60 30 10 100 Basic Proficiency 60 30 10 100 Specialized Proficiency 0 0 0	Evaluati	on Meth	od ar	nd V	Veight (%)						
Subtotal 60 30 10 100 Basic Proficiency 60 30 10 100 Specialized Proficiency 0 0 0				Fina	l Report				Total		
Specialized Proficiency 0 0 0						•		- - :	100		
	,					30			100		
Cross Area Proficiency 0 0 0	-1								1		
	Cross Area Proficiency					0	0		[0		

Akashi Coll	ege	Year	2023	Course Title			Global Studies
Course Information	on	1	1		1 11610		
Course Code	5002			Course Categor	y Ger	neral /	Compulsory
Class Format	Lecture			Credits	Aca	demic	Credit: 2
Department	Mechanical Engineering	l and Electronic g	System	Student Grade	Adv	. 1st	
Term	First Seme	ster		Classes per Wee	ek 2		
Textbook and/or Teaching Materials	Hideki Tarı	umoto, Underst	anding Internatior	nal Sociology, 2n	d ed.		
Instructor	ARAKAWA	Hironori					
Course Objectives	S						
(1) Possess internatio (2) Understand the cu (3) Understand and c (4) Understand and e (5) Understand the fu (6) Be able to delve d fieldwork, and prepar (7) Be able to engage	urrent interronsider the explain the cundamentals leeply into is expressed in the cundamentals.	national situation future of the 2 concepts of race s of cross-borde ssues of interes ions and papers	n that is in flux. 1st century and the and nation. r societies. t through the stuces based on the res	e new internatio	·		arry out research, including
Rubric							
		Excellent		Good			Insufficient
Achievement 1		Possess the int qualities of a g		Almost have the qualities of a glo			Inability to possess the international qualities of a global engineer.
Achievement 2		Understand the international si flux.	e current tuation that is in	Understand the international sit a state of flux.		t is in	Inability to understand the current international situation that is in flux.
Achievement 3		Understand an 21st century a the new intern	d consider the nd the future of ational society.	Able to consider what is required to understand and consider the 21st century and the future of the new international society.			Cannot understand and reflect on the 21st century and the future of the new international society.
Achievement 4		Understand an concepts of eth nation.	d fully explain the nnicity and	Almost understathe concepts of nation.	and and ex ethnicity a	kplain and	Cannot understand and explain the concepts of ethnicity and nation.
Achievement 5		Understand the transnational s	e fundamentals of ocieties.	Almost understa fundamentals o societies.		onal	Cannot understand the fundamentals of transnational societies.
Achievement 6		international re to delve deeply interest, condu including fieldy presentations a	ct research,	Almost can carry out research, including fieldwork, and can write a presentation and a thesis based on the results of the research.			Cannot carry out research, including fieldwork, and prepare a presentation or thesis based on the results of that research.
Achievement 7			uss various global	Almost can disc	uss and de	ebate	Cannot discuss global issues.
Assigned Departr	nent Obie	ectives		10			
Teaching Method							
Outline	the basic of internation to acquire	oncepts of social society and in the knowledge	al science and inte ndependently rese	rnational sociolo earch, present, a ecessary for engi	gy, studen nd discuss neers and	the to resea	society, and after understanding I select a topic related to opic. The objective is for students rchers, and to actively cultivate pproach society.
Style	issues that theme base conduct re- the results their own r	arise from time ed on the textb search, includin of their researc	e to time. After the ook or reference b g fieldwork and su ch and ultimately w l as their interpret	, e lecture on inter book in which he, urveys (even onli write a thesis. In	rnational solutions of the second sec	ocial is ereste sible. S ntatio	presentations on various global ssues, each student will choose a d, delve deeply into it, and Students are required to present n, students will be evaluated on discourse, so preparation for
Notice	guaranteed presentation social condupresenter in they ask in textbook for Lectures w	d in class, prepar on and the assig litions. Students or required to pu or response to the or each present will be given in E	aration, and revieugned paper. "Globa are expected to a repare a resume for	y, and the standa al Studies" is a d approach class w or his/her topic, a nerefore, please i articipation is ess lese as appropria	ard self-stuiscipline the vith a daily and the aube sure to sential.	udy tir iat is c intere idienc read t	ich is the sum of the study time me required to prepare the constantly changing according to est in current affairs. Each e will be graded on the questions the relevant sections of the
Characteristics of	Class / D	<u>Division</u> in Le	arning				
☑ Active Learning	,	☑ Aided by IC		☑ Applicable to	Remote C	Class	☐ Instructor Professionally Experienced
Course Plan	1			1			
	Th	neme			Goals		

differences between the ces, which are usually ational community.
ernational sustainable the role of Japan in the
nechanisms of international tional economy, which are dustry.
nship between the state ommunity, and be able to nding in their own
situation of immigration in
nd be able to formulate the pros and cons of
blems occurring in various ugee issues, and be able to p between the state and
ance of knowing what each in the international sing it in writing.
issues in East Asia, which to Japan.
st Asia and Oceania in have many academic
tical role of Okinawa, a ns. Understand geopolitical ountries, including Bhutan.
has been actively involved heast Asia and South Asia, or this.
mination of poverty is one es in the SDGs, and think nt can do as an industrialist
localism, and globalization, specific corporate movements.
rt Oui - It - at - iiro - It

		14th	The 21st Century Society (2) The course will ex contemporary inte understanding of	amine issues of te	errorism in	Able to understa terrorism and the what measures of terrorism.		international on. Understand ing to deter such		
		15th	The 21st Century Society (iii) The reality of enviwill be learned fro environmentally a relationship betweenvironmental issinternationally will	ronmentally cons m the current situ dvanced countries sen industrial peo	cious behavior uation in s, and the ole and the	Understand the various discourses on global studies that have been presented. To be able to have an opinion on how to deal with international issues as an industrialist.				
		16th	Final Examination			A final exam and	a final report w	ill be required.		
Evaluation	on Me	ethod and \	Neight (%)							
		Assignments Exams	& Presentation	Peer Evaluation	Attitude (attendance and questions asked in class)	Portfolio	Other/Quiz	Total		
Subtotal		50	20	0	20	0	10	100		
Basic Skills	ills 25 1		10	0	20	0	0	55		
Specialized Skills	lized 15 0 0 0				0	0	10	25		
Cross Field Skills					0	0	0	20		

А	kashi Co	ollege	Ye	ar	2023			Course Title	Geophysics			
Course	Informa	tion										
Course Co	ode	5003				Course Catego	ry	General ,	/ Elective			
Class Forr	mat	Lecture				Credits		Academi	c Credit: 2			
Departme	ent	Engineeri		tronic	System	Student Grade		Adv. 1st				
Term		Second S	emester			Classes per We	eek	2				
Textbook Teaching	Matérials	Printed m										
Instructor			MA Masahik	.0								
seismic w observation (2) Learn described (3) Under topograph volcanic e	(1) Learn about the observation techniques and results characteristics for the physical properties related to the solid Earth (gravity, seismic waves, geomagnetism, thermal flow, etc.) and understand their meaning. Also understand the basic principles of observation equipment. (2) Learn about how the Earth's internal structure, surface phenomena, and history have been interpreted using the observations described in (1). By doing this, comprehensively understand the solid Earth system. (3) Understand the concept of plate tectonics and the relationship between them and the movement of the Earth's layers and copography. By doing so, learn the basic knowledge for considering the global environment and disasters such as earthquakes and volcanic eruptions. (t is necessary to self-study the basic theorems of mechanics and electro-magnetism in order to achieve these goals.											
Rubric												
			Ideal Lev	el		Standard Level			Unacceptable Level			
Achievem	ent 1		physical	sm for proper	nd the estimating the ties of objects vation results.	Understand the estimating the properties of observation res	physio biects	cal	Do not understand the mechanism for estimating the physical properties of objects from the observation results.			
Achievem	ent 2		obsérvati	ion evi unders	nd what kinds of idence the standing of the ted on.	Understand whobservation evmodern unders Earth is estima	idence standii	e the ng of the	Do not understand what kinds of observation evidence the modern understanding of the Earth is estimated on.			
Achievem	ent 3		phenome earthqua	ena sue kes ar s throu	nd volcanic Igh the concept	such as earthquakes and volcanic eruptions through the concept of plate tectonics			Do not understand natural phenomena such as earthquakes and volcanic eruptions through the concept called plate tectonics.			
Assigne	d Depart	tment Ob	jectives									
Teachin	g Metho	d										
Outline		currently quantities of the ma physical of equipment	understood s such as g aterials that quantity. It nt. It will be	d. Since ravity to make will al	te the purpose of and heat, the ma be up the Earth, an so explain the law ht by a faculty me	geophysics is to in purpose of th d explain the ba vs of physics and ember who is in	captu is cou isic pro d basio vestiga	ire the Ear rse is to ur operties ar c structure	rth (mainly the solid Earth) are th quantitatively using physical nderstand the physical properties nd observation techniques of each s used in the observation nagnetic properties of deep-sea			
Style		Classes a	ent obtained in core drilling at Acádemia Sinica in Taiwan. s are held in a lecture style. aison for this course is Takeuchi.									
Notice		guarante assignme	ed in classe ent reports.	es and The c	amount to 90 hou the standard self ourse plan may c more of classes v	-study time requestions	uired f are se	for pre-stue erial, not st	include the learning time dy / review, and completing andalone.			
Charact	eristics o	of Class /	Division	in Le	arning							
□ Active	Learning		□ Aided	by IC	Т	☑ Applicable t	o Rem	note Class	☐ Instructor Professionally Experienced			
_												
Course	Plan 	T					l <u>a</u> .					
			Theme	ا مر	/ The start		Goals	5				
		1st [1	Earth (1) Explain, as overview.	guidar perce	/ The shape and s nce, the course po eption of the Earth nes.	olicy and	of "ge devel	eophysics"	role played by the academic field and the role that physics ays in understanding the Earth's re.			
		2nd	Explain the shapes for t	definit the Ea	ze of the Earth (2) tions of the currer rth (Earth ellipsoi the basics of pos	ntly recognized d and geoid),		erstand the netry.	basics of positioning using			
	3rd Quarter	3rd	Earth's mas	s and	rity means, by sho density obtained neaning of gravity	by using it.	struc		v to estimate the Earth's internal the laws and observed values of s on it.			
		4th	isostasy Explain the with gravity movement	. Also	pt of isostasy and introduce examp d by it.	its relationship les of crustal			concept of isostasy and the fine Earth's gravity that is related			
		5th	Seismic wa Explain the The method Structures u	nature s for s	e of seismic wave surveying undergr hem.	s, and explain ound	and h		characteristics of seismic waves mate earthquake information			

Second Part Continental drift (
The Introduce the subterranean structure of the Earth's surface layer, which has been estimated mainly using seismic wave analysis.			Otti	Introduce the larger structure of the interior, which has been estimated	e Éarth's	survey and the m	ethod for estimating the Earth's		
Sth			7th	Introduce the subterranean structui Earth's surface layer, which has bee	ré of the en estimated	survey and the m	nethod for estimating the shallow		
Sexplain the magnetic distribution on the Earth's surface and how geomagnetism was created. Furthermore, explain magnetic anomalies. Rock magnetism and paleomagnetism Rock magnetism for rocks becoming magnetized and introduce the magnetism shifts from the past that have been investigated using it. 10th			8th	Earth heat Explain what is the source of heat in Earth, and show the calorimetric dis	nside the	the state of the E estimated from the	arth's interior that can be		
Ath Quarter Continental drift theory by Wegner. Also explain the continental position's restoration by paleomagnetism that have been investigated using it.			9th	Explain the magnetic distribution or surface and how geomagnetism wa	auses of geomagnetism by /hat does magnetism mean?"				
Introduce the classic continental drift theory by Wegener. Also explain the continental position's restoration by paleomagnetism that has triggered a revival of continental drift theory. Ith Quarter 12th Quarter 12th Quarter 12th Quarter 15th Quarter 15th Quarter 15th Quarter 16th Quarter 16th Quarter 16th Quarter 17th Quarter			10th	Explain the mechanism for rocks be magnetized and introduce the magi from the past that have been invesi	coming netism shifts				
Ath Quarter 12th Explain seafloor's topography and underground structure and the relationship between magnetic anomaly distribution in the ocean and the theory of seafloor spreading. 13th Explain the concept and movement of plates and the shape their boundaries as the basis for plate tectonics. 1 13th Explain the concept and movement of plates and the shape their boundaries as the basis for plate tectonics. 14th Plate tectonics (2) 14th Understand the original meaning of the concept called plate tectonics and its difference from continental drift theory. Understand how natural phenomena such as earthquakes, volcanic activity, orogeny, etc.) Plate tectonics (3) Introduce the properties of hotspots, and explain the difference between relative and absolute plate motions. Furthermore, explain the driving force of plate motions. Furthermore, explain the driving force of plate motions. 16th Final exam Evaluation Method and Weight (%) Exercise Examination Total Subtotal 30 70 100 Specialized Proficiency 0 0 0 Comparison of the entire Earth 100 Comparison of the entire Earth			11th	Introduce the classic continental dri Wegener. Also explain the continen restoration by paleomagnetism that	tal position's	"continental drift how to estimate t	rift theory," its interpretations, and te the continental drift using current		
Explain the concept and movement of plates and the shape their boundaries as the basis for plate tectonics. Plate tectonics (2) Use plate tectonics to explain the movement of the Earth's layers (earthquakes, volcanic activity, orogeny, etc.) Plate tectonics (3) Introduce the properties of hotspots, and explain the difference between relative and absolute plate motions. Furthermore, explain the driving force of plate motions. Evaluation Method and Weight (%) Exercise Examination Total			12th	Explain seafloor's topography and u structure and the relationship betwo anomaly distribution in the ocean a	een magnetic	Understand the h geomagnetic reco	ypothesis that associates ords with continental drift.		
14th Use plate tectonics to explain the movement of the Earth's layers (earthquakes, volcanic activity, orogeny, etc.) 15th 15t			13th	Explain the concept and movement the shape their boundaries as the b		called plate tectonics and its difference from			
15th Introduce the properties of hotspots, and explain the difference between relative and absolute plate motions. Furthermore, explain the driving force of plate motions. 16th Final exam			14th	Use plate tectonićs to explain the m the Earth's layers (earthquakes, vol		earthquakes and volcanic activities can be			
Evaluation Method and Weight (%) Exercise Examination Total Subtotal 30 70 100 Basic Proficiency 30 70 100 Specialized Proficiency 0 0 0			15th	Introduce the properties of hotspots the difference between relative and motions. Furthermore, explain the o	absolute plate	Understand how plate motions work within the mechanism of the entire Earth.			
Exercise Examination Total Subtotal 30 70 100 Basic Proficiency 30 70 100 Specialized Proficiency 0 0 0			16th	Final exam					
Exercise Examination Total Subtotal 30 70 100 Basic Proficiency 30 70 100 Specialized Proficiency 0 0 0	Evaluati	on Meth	od and V	Veight (%)					
Subtotal 30 70 100 Basic Proficiency 30 70 100 Specialized Proficiency 0 0 0				1 2	Examination		Total		
Specialized Proficiency 0 0 0	Subtotal				70		100		
	Basic Prof	iciency					100		
Cross Area Proficiency 0 0 0	Specialize	d Proficier	псу	0	0		0		
	Cross Are	a Proficier	су	0	0		0		

А	kashi Co	ollege	Year	2023				Introduction to Nano Materials Design		
Course	Informa	tion								
Course Co	ode	5004			Course Categor	ry	General /	Elective		
Class Forr	mat	Lecture			Credits		Academic Credit: 2			
Departme	ent	Mechanic Engineeri	al and Electronic	: System	Student Grade	Adv. 1st				
Term		First Sem			Classes per We	ek	2			
Textbook		Handouts	•				1			
Teaching Instructor			HI Hiroshi							
Instructor	Objectiv		III HIIOSIII							
Objectives Evaluation nanomate Evaluation ideas to o	s are to: n 1: Under erials design n 2: Deepe	rstand the va in through the one's und aly through o	he lectures. lerstanding of quexercises and a	uantum mechanics presentation.	and develop pre	esenta	tion skills i	applying the laws to n expressing one's opinions and es in one's major field. (D, E, H)		
Rubric										
			Ideal Level of	Achievement	Standard Level	of Ach	nievement	Unacceptable Level of Achievement)		
Evaluation 1				learly understands he nanomaterials ds.	The student de material proper the quantum m	rties co	ome from	The student did not describe that material properties come from the quantum mechanics and did not explain the nanomaterials design methods.		
Evaluation	า 2		and explains h	learly understands now to utilize the hanic algebra.	The student ut quantum mech	tilizes t ianics a	the algebra.	The student did not utilize the quantum mechanics algebra.		
Evaluation	า 3		The student a nanomaterials developing he	design for	The student proposes the application of the nanomaterials design in her/his field.			The student did not propose the application of the nanomaterials design in her/his field.		
Assigne	d Depar	tment Ob	jectives							
	g Metho									
Outline Style		and techr nanomate motions of quantum students materials	nologies. An objectial design. Firstof nuclei and elemechanics clariare going to lea, which will be rend necessary su	ective of this course t, students are goi ctrons that make u fies the compositio rn the state-of-the equired in various biects will be illusti	e is to develop and to learn the open and character and character art nanomatericengineering field through the	a scient outline econd, istics (als des ds in th	tific way of of quantual the studer physical properties of the future.	rt the present and future science f thinking by learning m mechanics, which explains the nts are going to learn how roperties) of materials. Lastly, the d to design highly-functional llowed by practice lectures. and to explain her/his		
Notice		In this co	to other students easy to understand. burse, the learning time guaranteed in the class and the total of the standard self-study time y for the preparation / review are 90 hours of study content. who miss 1/5 or more of classes will not be eligible for evaluation.							
<u> </u>		Students	who miss 1/5 o	r more of classes v	vill not be eligibl	e for e	valuation.			
Charact	eristics (or Class /	Division in Le	earning	Ι			Trestantes Professionally		
☑ Active	Learning		☐ Aided by I	СТ	☑ Applicable to a positive to a positiv	o Rem	ote Class	☐ Instructor Professionally Experienced		
Course	Plan									
		1	Гһете			Goals				
		1st c	Learn the outlir differences betw	um Mechanics (First ne of quantum mech een quantum mech panics by comparing	chanics and nanics and	The st quant	tudent exp um mecha	lains the differences between nics and Newtonian mechanics		
		2nd L	Outline of Quant Learn the metho nechanically.	um Mechanics (Sec od of expressing mo	cond Half) otions quantum	The st	tudent exp le motion	lains the description of the n quantum mechanics.		
1st		3rd A	Algebra)	ım Mechanics 1 (Op Ilgebra, which is ne nechanics		The st	tudent har intum med	dles the basic algebra necessary chanics.		
	1st Quarter	4th	Equation) Schrodinger wav	nm Mechanics 2 (Some equation is the behaviors). Learn Schröder	asic equation			plains the relation between wave cle motion.		
		5th	Relations I: Coor	im Mechanics 3 (Cordinates and Mome utation relation bel momentum.	ntum)			erates the commutator brackets nd momentum.		
		6th	Relations II: Ang	ım Mechanics 4 (Co gular Momentum) utation relation reg um.				erates the commutator brackets nd momentum.		

		7th	Basics of Quantum Operators) Learn about Herm	`	ermitian	The student expl calculates the tir of physical quan	ne evolution o	nitian, and f expectation value		
		8th	Basics of Quantum Potential) Learn the quantur square-well poten	n Mechanics 6 (So		The student deri particle bound by	ves the guant	um states of a Il potential.		
		9th	Basics of Quantum Scattering Problem Learn about scatte the tunnel effects.	n and Tunnel Effe ering problems a	ect)	The student deri through the squ	erives the transmission probability quare-well potential energy barrier.			
		10th	Basics of Quantun Oscillators) Learn about the q oscillators.	`		The student derives the quantum states of Harmonic Oscillator.				
		11th	Basics of Quantum Heat) Learn about Einste	`	attice Specific	The student deri solid.	derives the heat capacity of Einstein			
		12th	Electron Configura Learn about the q bounded by the Co	uantum states of	an electron	The student explains the quantum states of an electron in an atom.				
	2nd Quarter	13th	Quantum Statistic	lectron Configuration of Atom 2 (Spin and quantum Statistics) earn about the existence of spin, the outline of the quantum statistics, and the periodic laws of lements.			lains the electi	ron configuration in		
		14th	Cohesion Mechani Bond, Covalent Bo Learn the cohesion materials.	and Metallic F	Bond)	The student explosed and metallication the cohes materials.	ic bonds)	•		
		1501	Density Functiona Material Design Learn the density principle calculatio functional theory, using the first-prir	functional theory on based on the c	, the first lensity als design	The student expl methods.	e student explains the nanomaterials design thods.			
		16th	Term-end examin	ation						
Evaluatio	n Meth	nod and V	Veight (%)	T	T		1			
	Ex	amination	Practice & Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total		
Subtotal	80		20	0	0	0	0	100		
Basic Ability	/ 20	<u> </u>	5	0	0	0	0	25		
Technical Ability	50	l	5	0	0	0	0	55		
Interdisciplinar y Ability 10			10	0	0	0	0	20		

А	kashi Co	llege	Year	2023				Culture and Communication		
Course :	Informat	ion				•	•			
Course Co	ode	5005			Course Categor	y G	eneral /	Elective		
Class Forr	mat	Lecture			Credits	A	cademic	Credit: 2		
Departme	ent	Mechanic Engineeri	al and Electroniong	System	Student Grade	A	dv. 1st			
Term		First Sem	ester		Classes per We	ek 2				
Instructor	-	INOUE H	detoshi							
Course	Objectiv	es								
(2) Impro	ve one's a	bility to folk	ow English proni	unciation and rhyth	ım.					
Rubric			1					1		
			Ideal Level		Standard Level			Unacceptable Level		
Achievem	ent 1		of different cu		Deepened unde different culture	es.		Did not deepen understanding of different cultures.		
Achievem	2) Improve one's ability to follo Become proficient with TO ubric Chievement 1 Chievement 2 Chievement 3 SSIGNED DEPARTMENT OF COMMUNIC COMMUNICATION COMMUNIC COMMUNIC COMMUNICATION COMMUNIC COMMUNIC COMMUNIC COMMUNIC COMMUNICATION COMMUN		Fully gained E pronunciation	and rhythm.	Gained English and rhythm.	•		Did not gain English pronunciation or rhythm.		
Achievem	partment Mechan Engineer Mechan Mechan Engineer Mechan Mechan Engineer Mechan Mechan Mechan Engineer Mechan M		Fully became proficient with TOEIC format questions. Became proficient with format questions.				TOEIC	Did not become proficient with TOEIC format questions.		
Assigne	d Depart	ment Ob	jectives							
Teachin	g Metho	d								
Outline		thoughts communi skills by u	Learning a language is more than just learning words. It also includes cultural learning aspects, such as t thoughts and values of the people who speak it. Therefore, these exercises will cover language, culture, a communication. Taking the UK and business English as an example, the goal is to improve students' English by understanding the differences and commonalities with Japan. The level of English to be used in t exercise is somewhat easy, so it is not intended as an advanced course.							
skills by understanding the differences and commonalities with Japan. The level of English to be used exercise is somewhat easy, so it is not intended as an advanced course. In order to achieve the goals, students will need to self-study as follows: - Look up important words in advance and understand them in English Review the model dialogs learned in the class and practice using the accompanying CD until able to a companying CD until able to a com							npanying CD until able to recite it.			
Notice		- Ensure - Reasses presentat	adequate prepa sments will not ions without rea	ration time for assi	gnments. Idents are late of Ince due to suspe	r absent ension, e	from th	e class and unable to work or give		
Charact	eristics o				viii riot be engibit	e for a pe	<u> </u>	rude.		
		or Glass _f	☐ Aided by ICT ☐ Applicable to			o Remote	e Class	☐ Instructor Professionally Experienced		
			Ехрепенсей							
Course	Plan									
	-	٦	Theme			Goals				
		1st	First semester cl Explain an overv	ass guidance iew of the first sen d evaluation metho	nester classes,					
		2nd L	Check In and Wo	ork Out ading comprehensi the counter		Understand conversations at the counter.				
		3rd L	What Will the Wo Listening and rea weather Chapter 2: Cloth	ading comprehensi	on about the	Understa	and the	weather.		
		4th	A London withou Listening and rea London buses Chapter 3: Groce	ading comprehensi	on about	Understa	and Lon	don buses.		
1st Semeste r		5th L	Back to the Futu Listening and rea ailways Chapter 4: Cook	ading comprehensi	on about	Understa	and railv	ways.		
		6th	Shop-'n'-Chat Listening and rea Shopping Chapter 5: Eatin	ading comprehensi g out	on about	Understand shopping.				
			irst semester o			Review t	the topic	cs covered in the first semester.		
			Midterm exam							
	<u>2</u> nd	9th	concept of post of	ading comprehensi	on about the	Understa	and the	concept of post offices.		
	Quarter	10th L	Off the Beaten P	ath ading about tourisr	n	Understa	and tour	rism.		

		11th	Dining Out Diversity Listening and reading culture Chapter 8: The Weath	comprehension about food	Understand food culture	2.	
		12th	Afternoon Tea Listening and reading Chapter 9: At a Movie	about afternoon tea Theater	Understand afternoon t	ea.	
		13th	The Beatles Are Forev Reading about the Be Chapter 10: Sports		Understand the Beatles		
		14th	Football: Sport or Bus Reading about footbal Chapter 11: Traffic an		Understand football.		
		15th	Second semester over	rall review	Review the topics cover semester.	red in the second	
		16th	Final exam				
Evaluation	on Meth	od and	l Weight (%)				
		E	xamination	Short Tests	Other	Total	
Subtotal		8	0	20	0	100	
Basic Profic	ficiency 80		0	20	0	100	
Specialized	lized Proficiency 0		0	0	0		
Cross Area	Proficien	cy 0		0	0	0	

А	kashi Co	ollege	Year	2023		Course Title	Overseas Training		
Course	Informa	tion							
Course Co	ode	5006			Course Category	General ,	/ Elective		
Class For	mat	Practical to	raining		Credits	School C	redit: 2		
Departme	ent	Mechanica Engineerin	ll and Electronic	System	Student Grade	Adv. 1st			
Term		Year-roun	· · · · · · · · · · · · · · · · · · ·		Classes per Wee	k 2			
Textbook	and/or Materials	none							
Instructor									
Course	Objectiv	es							
(2) To ac	hieve a br	educational e pad perspecti sing English.	experience thro ve by joining ac	ugh active particip ctivities in differen	ation in overseas t cultural environr	training. ments.			
Rubric									
			Ideal Level Standard		Standard Level		Unacceptable Level		
Achievement 1			To enhance the experience threfore participation in training.	ough active	To enhance the experience throuparticipation in calculation in calculations.	ugh active	Did not enhance the educational experience through active participation in overseas training.		
Achievem	nent 2			road perspective vities in different nments	To achieve a bro by joining activit cultural environr	ies in different	Did not achieve a broad perspective by joining activities in different cultural environments		
Achievem	nent 3		Communicate	using English	Communicate u	sing English	Can not communicate using English		
Assiane	d Denar	tment Obj	ectives		1		12.19.00.		
	ig Metho								
Outline		global pers period. Th to 90 hour training de	spective and im e number of tra s or more, inclus estinations), pos	prove their comm hining days shall bouding overseas tra st-event report me	unication skills. The ten days or more ining, prior guidante eting, and report	he training per re. This course nce (manner e s to handle the	speriences overseas to think with a lod is during the summer holiday requires self-study time equivalent ducation, a preliminary survey of a related organizations. Advanced d fulfill this course requirement.		
Style		Man des			anaia advisas v Asti	valv angena vi	th local people during the training		
Notice		period, col clothes an	mmunicate with d language.	n them, keep an at	ttitude suitable fo	r trainees, bein	g careful with manners such as		
Charact	eristics	of Class / [Division in Le	arning	1				
☑ Active	Learning		☑ Aided by IC	T	☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced		
	DI.								
Course	Plan					>1-			
			heme			Goals Explanation of t	ho course advice about etiquette		
		1st G	uidance		ā	Explanation of the course, advice about etiquette at the training safety.			
		2nd Pr	ractice		I t	ndividual techr raining destina	nical experience at overseas tions.		
	4 -4	3rd id	lem			dem			
	1st Quarter	4th id	em		j	dem			
		5th id	em		je	dem			
		6th id	em		į.	dem			
1st		7th id	em		į.	dem			
Semeste		8th N	o mid term exa	ms					
		9th id	em		i	dem			
		10th id	em		į.	dem			
			em			dem			
	2nd		em			dem			
	Quarter		em			dem			
			em			dem			
			em		i	dem			
			o End Term Exa	11115		dom			
			em			dem dem			
			em			<u>aem</u> dem			
2nd Semeste	3rd		em em			dem			
r	Quarter		em			dem			
			em			dem			
		_/tn id	em		i	idem			

		8th	No mid term exar	ns						
		9th	idem			idem				
		10th	idem			idem	idem			
		11th	idem			idem				
	4th	12th	idem			idem				
	Quarte	er 13th	idem			idem				
		14th	idem			idem				
		15th	idem			idem				
		16th	No End Term Exa	ms						
Evaluati	ion Me	ethod and \	Weight (%)							
		Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total		
Subtotal		0	0	0	0	0	0	0		
Basic Proficienc			0	0 0		0	0	0		
Specialize Proficienc	Specialized 0 Proficiency		0	0	0	0	0	0		
Cross Are Proficienc	Cross Area 0		0	0	0	0	0	0		

A	Akashi C	ollege	Year	2023		Course Title	Creative Fact	ulty	
Course	Informa	ition		1		1 TICC	Development	-	
Course C		5007			Course Categor	y Specia	alized / Compulsory		
Class For		Experime	ent		Credits		l Credit: 2		
Departme	ent	Mechanic Engineer	cal and Electronic	System	Student Grade	Adv. 1	.st		
Term			Semester		Classes per We	ek 4			
Textbook									
Instructo	<u>Materials</u> r	ΝΔΚΔΝΙ	SHI Hiroshi						
	Objectiv		5111 1111 03111						
(1) Can s	et goals a	nd plan wor		•	• •	•	k progress and worl		
(2) Can a	pply expe	rtise and pro	esent problem so cation skills and t	lution plan. eamwork through	cooperation and	d work distrib	ution in group work	<u>.</u>	
Rubric								-	
			Ideal Level		Standard Level		Unacceptable	Level	
Achievem	nent 1		Can set goals a group basis, voluntarily, an progress and veffectively.	and plan work on perform work d report on work work results	Can set goals a a group basis, I voluntarily, and progress and w	perform work I report on wo	lon a group ba	als and plan work sis, perform work d report on work work results.	
Achievem	nent 2		Can apply experience practicable properties.	ertise and present oblem solution	Can applyexper a problem solut	tise and pres tion plan.	ent Cannot apply I present a prob	knowledge and blem solution plan.	
Achievem	nent 3		Can effectively distribute work demonstrate c skills and team group work.	k, and ommunication	Can cooperate, and demonstra communication teamwork thro	te skills and	work, and den communication		
Assigne	ed Depar	tment Ob	jectives						
Teachir	ng Metho	od							
Outline		work, an of working handling assignme	d will foster their ng on a task, they devices, and inve ents.	ability to solve programmer ability to solve programmer ability developments ability a	oblems in engine op the relevant kance, etc. to fos	eering design knowledge thr ter creativity	nd administrative ro in a practical mann ough assembling e through engineerin	er. In the process quipment, g design	
Style		and exer from diff explanat groups v	cises for assignm erent Advanced (ions on basic kno	ents under the fac Courses and work wledge, etc. are g	culty in charge. Son the assignme iven. Students w	Students will 1 ent. After the vill conduct all	udy and conduct cre form groups of arou asssignment theme of the Plan-Do-See ed verbally in the d	and 4 members is presented and e activities in	
Notice		guarante	eed in classes and ent reports. Stude	amount to 90 hou I the standard self- ents will be divided more of classes w	-study time requ d into groups du	iired for pre-s ring guidance	urs include the learn tudy / review, and on.	ning time completing	
Charact	teristics	of Class /	Division in Le	arning					
☑ Active	Learning		☑ Aided by IC	T .	☑ Applicable to	o Remote Cla	Instructor Experienced	Professionally	
Course	Plan								
COUI SC	i idii		Theme			Goals			
		1st	Class guidance, t Receive class gui schedule, activity	eam division, and dance and check t conditions, and e into teams and do	he overall valuation		he course aims and	assignment	
		2nd		solution plans for the colution plans for the column and according to the column and a		contribute to	ntarily in group act the team by demo on skills and teamw	nstrating	
			Same as week 2			Same as wee			
2nd Semeste r	3rd Quarter	4th	problem solution give an oral prese plan.	and presentations: plans for the assigentation of an imp	nment and lementation		o others how effect ne proposed solution		
-			Can reconsider in make a better im results of the pla	n groups the activit iplementation plan nning discussion.	ry plans and based on the	Same as wee	ek 2		
		H	Same as week 5			Same as wee			
			Same as week 5			Same as wee			
			Same as week 5			Same as week 2			
	4th		Same as week 5				Same as week 2		
	Quarter		Same as week 5			Same as wee			
		11th	same as week 5	ame as week 5			Same as week 2		

	12th	S	ame as week 5			Same as week 2				
	13th	S	Same as week 5			Same as week 2				
	14th	S	ame as week 5			Same as week 2	Same as week 2			
	15th	ln	roblem solution	ion: Present the plan and give an ne outcome of im	oral	Can explain to others how reasonable the implemented solution plan was and the outcome of implementing it.				
	16th	N	lo final exam							
Evaluation	Method a	nd We	eight (%)							
	Examina	tion	Presentation	Report	Behavior	Portfolio	Other	Total		
Subtotal	0		40	50	10	0	0	100		
Basic Proficiency	0		5	5	10	0	0	20		
Specialized Proficiency			0	0	0	30				
Cross Area Proficiency	0		25	25	0	0	0	50		

Д	kashi Co	llege		Year	2023			ourse Title	Engineering Topics for Advanced Course Students
Course	Informa	tion							
Course Co	ode	5008				Course Catego	ry	Specialize	ed / Compulsory
Class For	mat	Lecture				Credits		Academi	c Credit: 2
Departme	ent	Mechanic Engineer		and Electronic	System	Student Grade		Adv. 1st	
Term		Second S	Sem	ester		Classes per We	eek	2	
	Matérials								
Instructo		_	RA S	Seiji,WATANAB	E Moriyoshi,HIRA	ISHI Toshihiro,I	NAKAN	ISHI Hiros	shi,NOMURA Hayato
(1) Und (2) Lea	rn about th	e latest tec ne latest iss	sues	in areas differ	ent from one's ov	wn area of speci	ialty.		the status of their efforts. in each area of specialty.
Rubric								•	
			Ic	deal Level		Standard Level			Unacceptable Level
Achievem	Achievement 1		te or so	Inderstand the echnological is wn area of spe olutions and th fforts.	sues in one's	Understand the technological is own area of sp solutions and t efforts.	ssues in	n one's , their	Do not understand the latest technological issues in one's own area of expertise, their
Achievem	chievement 2				e latest issues in from one's own y.	Learn about th areas different area of specialt	from c		Do not learn about the latest issues in areas different from one's own area of specialty.
Achievem	nent 3		al re fr	earn and unde bout technologesearch that a riendly in each pecialty.	gies and [·] re co-existence	Learn and undo about technolo research that a friendly in each specialty.	gies ar are co-	nd [.] existence	Do not learn and understand topics about technologies and research that are co-existence friendly in each area of specialty.
Assigne	d Depar	ment Ob	jec	tives					
Teachin	g Metho	d							
Outline		expertise inside an Nakanish Fujiwara Nomura: Watanab Hiraishi:	e wil nd ou ni: G : Me : Ele be: U	Il give knowled ut of this cours Guidance and in echanical syste ectronic and inf Jrban systems Idina system (lge of the trends in the control of	in technological ver various topi ea (three classes) s (three classes) learning about v	develo cs and es)) various	pment in take place	y members from different areas of an interdisciplinary manner both e in a relay form: nent and research processes, s beyond their respective technical
Style		Fujiwara Nomura Watanab Hiraishi	will will be w will t	week-period, Nakanishi will teach the guidance in week 1 in a lecture-style format. will teach classes from weeks 2 to 4 in a lecture-style format. vill teach classes from weeks 5 to 7 in a lecture-style format. will teach classes from weeks 8 to 10 in a lecture-style format. Weeks 11 to 13 in a lecture-style format.				•	
Notice		guarante assignme explained	eed i ent r d in	in classes and reports. Althoι a way that is ε	the standard self-	-study time requestions requestions requestions requesting sections and the sections is sections and the sections is sections.	uired fo side of should	or pre-students' be able to	include the learning time dy / review, and completing own specialties, they will be properly learn them.
Charact	eristics o	of Class /	Diν	vision in Lea	arning	T			
☑ Active	Learning			Aided by IC	Т	☑ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced
Course	Dlan								
Course	<u>Piaii</u>		Thou	mo			Coalc		
	1		Expl Adva met impo know	rse aims (Nak lain the purpos anced Course thods and othe ortance of acti wledge throug	anishi) se of Engineering Students. Inform r details. Explain vely learning a w h self-experience ology topics, etc.	the evaluation the ide range of		stand an o	overview of this class and create a n.
2nd Semeste r	3rd Quarter	2nd	Prob ever hous will	olems related t rywhere in eng sing and electi	blems in Engineer to thermal fluid ar gineering, such as ronic equipment. sic laws of such t ra)	re faced s cooling of This lecture	and h		the basic laws of heat conduction er, and be able to perform basic cions.
		3rd	Whe of a and	en performing thermal probl simplify the a	Problem Analysis a hand-calculatio em, it is necessar ctual thermal pro or practical therm (Fujiwara)	y to model blem. Modelina	odel Can model each element and perform		

		4th r	Challenges in Anal Fo perform analys nand-calculation length transfer coeff equired. We will use the constructing such puidelines for mor Fujiwara)	is of thermal pro evel, thermophys ficients, and othe understand the p a database and c	blems at the sical properties, er values are rocess of discuss	Can discuss the databased physicoefficients.	procedures for cal properties a	obtaining non- and heat transfer		
		5th L	Automation 1 (Noi Learn about the cousing existing case	oncept of work au	utomation,	Can explain events that can be automated.				
		6th L	Automation 2 (Noi earn about platfo automation.	mura) orms used for pro	grammatic	Can explain a pla automation.	atform used for	programmatic		
		7th L	Automation 3 (Non Learn how to clarificated ask, consider the through progran	fy the procedure form of the outp	to automate a ut, and realize	Can explain proc tasks in research through program	n activities and	omating repetitive daily routines		
		8th [Development and	Environment(Wa	atanabe)	on the environm	Can explain the impact of development activities on the environment, and the disaster prevention function of the nature.			
	9th				Environmental loa assessment metho		ental impact	Can explain indic assessment(LCA assessment met human activities), and environr hods related to	mental impact the impact of
	11	10th E	Environmental Ris	k and Ethics(Wat	anabe)	Can explain the three environmental ethics of natural subsistence, inter-generational ethics, an resource finiteness, as well as the trilemma of environmental risks and environmental problems				
		1	11th c	Assistance for devareas (Hiraishi) Give an introduction Countries and disa Divided so far, ar Divided so far, ar Divided so far, ar	on on assistance ester areas that had consider the wo be applied to loca	for developing ave been vay in which	Can recognize the	ne importance o	of local	
		12th		Appropriate technosive an introduction echnology, example eveloping countrinessures in Japar echnology should	ology (Hiraishi) on on the need for ples of its applica ies and those in e	tion in environmental	Can explain the technology and o	definition of ap give examples (propriate of it.	
4t Qu	th uarter	13th (E	Recycling and ben Hiraishi) Explain how to tre such as fallen leav and human waste, ecycling-based so	eat biological orga ves, weeds, wood , and how the sy:	anic materials ls, food waste, stem for a	Can explain examples of material recycling in a recycling-based society.				
	14th	14th i	nterdisciplinary and as a summary of the latest ange of the latest ncluding shipbuild communicating, particles on boat aritime Sciences (AJJINMARU.	this course, learn t science and tech ling, navigating, ort and city planr ard the Graduate	about a wide nnology, ning, through School of	Can organize and explain the knowledge gained through the on-board exercise.				
		15th c	nterdisciplinary and a summary of the latest ange of the latest ncluding shipbuild communicating, pan exercise on boardaritime Sciences (AIJINMARU. The combined with we	this course, learn t science and tech ling, navigating, ort and city planr ard the Graduate Kobe University! will be an intens	about a wide nnology, ning, through School of s training ship,	Can organize and through the on-b		nowledge gained		
			No final exam							
Evaluation	n Meth	od and W	'eight (%)	Mutual						
	Report		Presentation	Evaluations between students	Behavior	Portfolio	Other	Total		
Subtotal	90		0	0	10	0	0	100		
					1.0	0	10	1		
Basic Proficiency	20		0	0	10	U	0	30		
	20 30		0	0	0	0	0	30		

А	kashi Co	llege	Year	2023		Co	ourse E Title	Engineering Presentation I	
Course	Informat	tion							
Course Co		5009			Course Catego		•	d / Compulsory	
Class Forr	mat	Seminar	and Floaturesi	- Custom	Credits		School Cre	edit: 1	
Departme	ent	Engineer	cal and Electroni ing	System	Student Grade	,	Adv. 1st		
Term		First Sen	nester		Classes per We	eek 2	2		
Textbook Teaching		A separa	te handout will b	e provided.					
Instructor		NAKAI Y	uichi,ISHIMATSU	J Kazuhito					
Course	Objectiv	es							
discuss th (2) Can se discuss th (3) Under Theme 2	em orally. et a theme em orally. stand engi and preser	on one's on ineering ethetations of i	wn in Theme 1, nics through resets results.	prepare materials	(e.g., summary codes, etc. of th	and slid	les) for the	resentation, and present and e presentation, and present and ademic societies covered in	
Rubric									
			Ideal Level		Standard Level			Unacceptable Level	
Achievem	ent 1		theme, prepa summary and		Can set a prob theme, prepare summary and s presentations, discuss them o	e materi slides) fo and pre	als (e.g., or the	Cannot set a problem for the given theme, prepare materials (e.g., summary and slides) for the presentations, and present and discuss them orally.	
Achievem	ent 2		prepare mate summary and	slides) for the and present and orally in a	Can set a them materials (e.g. slides) for the present and dis orally.	, summa presenta	ary and ation, and	Cannot set a theme, prepare materials (e.g., summary and slides) for the presentation, and present and discuss them orally.	
Achievem	ent 3		Fully understate explain engine through researcodes, etc. of academic socion presentations	eering ethics rch of the ethics the professional eties and	Understand en through resear codes, etc. of t academic socie presentations of	ch of the the profecties and	e ethics essional	Do not understand engineering ethics through research of the ethics codes, etc. of the professional academic societies and presentations of its results.	
Achievem	ent 4		Understand a	nd can practice e of role sharing	Understand the role sharing the work.			Do not understand the importance of role sharing through team work.	
Assigne	d Depart	ment Ob	jectives						
Teachin	g Metho								
Outline		graphical matters. viewpoin their imp importan	I presentations, Students will be ts of (1) subject ressions and cri ice of sharing ro	oral presentations, given a variety of clarity, (2) conten iques to raise the	etc. in order to assignments, are tarity, (3) appeared by preparing by preparing	enhance nd asked beal, etc stent. Fu	e students I to evalua . In addition	as written presentations, s'ability to express technical ate each other based on the on, the teaching staff will offer e, students will understand the s through team work. (See class	
Style		After Nal	kai and Ishimats	u have given their	lectures on the	ental topic	s, etc., students will give matsu together.		
Notice		This cour guarante assignme prepared students	rse's content will led in classes and lent reports. Emp by themselves presentations.	amount to 90 hou d the standard self hasis will be on pro	rs of study in to -study time requesenting and dis ned time. Studer	otal. The uired for scussing nts are e	se hours i pre-study the summ expected t	nclude the learning time y / review, and completing nary and slides students have to be able to evaluate other	
Charact	eristics o	of Class /	Division in Le	earning	T				
☑ Active	Learning		☐ Aided by I	СТ	☑ Applicable t	o Remot	te Class	☐ Instructor Professionally Experienced	
Course	Plan								
Jourse	. 1011	-	Theme			Goals			
		1st	How to write a r Explain how to v presentation. Le written report ba	eport (Part 1: Ishir write a report as a v arn how to express ased on specific sar g a 1- or 2-page re	written s sentences in a nples. Set a		tand the b	pasics of writing a report.	
1st Semeste r	1st Quarter	2nd	Exchange and co	eport (Part 2: Ishir orrect reports writt ange opinions eithe group.	itten on the given Understand th			pasic writing of a report in	
		3rd	There are severa mind when crea	es (Part 1: Nakai) al important points ting materials for p ed here with exam	resentations.	Unders	tand the k	key points for creating materials.	

						·			
		4th	Presentation rules There are several i mind when giving They are explained	mportant points presentations in	public. [·]	Understand the opresentations.	o's and don'ts w	hen giving	
		5th	Theme 1 (Free cho slides (Nakai and I Prepare a report w and prepare a 10-r	shimatsu) ith an individuall	y set theme	Can create a repo and prepare a 10			
		6th	Theme 1 presental Ishimatsu) Each individual will about Theme 2 foll with everyone.	give a 10-minut	e presentation	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with everyone.	
		7th	Theme 1 presental Ishimatsu) Same as above	tion (Part 2: Nak	ai and	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with everyone.	
		8th	Theme 1 presental Ishimatsu) Same as above	tion (Part 3: Nak	ai and	Give a 10-minute presentation about Theme 1 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.			
		9th	Theme 1 presental Ishimatsu) Same as above	tion (Part 4: Nak	ai and	Also, evaluate each other's presentations. Give a 10-minute presentation about Theme 1 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.			
		10th	Theme 1 presental Ishimatsu) Same as above	tion (Part 5: Nak	ai and	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with everyone.	
	2nd	11th	Presentation rules Practice the key po with actual exampl	oints of public pre	su) esentations	Learn the key points for public presentations.			
		1201	Theme 2 (Code of slides (Part 1: Nak In teams of two to ethics of respective societies. Prepare to 10-minute present	ai and Ishimatsu four, research the professional act to compile report) ne code of ademic	In teams of two tethics of the prof they belong to.	to four, can resea essional academi	arch the code of c societies that	
	Quarter	13th	Theme 2 (Code of slides (Part 2: Nak Same as above	ethics): Preparin ai and Ishimatsu	g reports and)	Working together in teams, can prepare a 10- minute presentation on and summarize in a report the ethics of the respective professional academic societies that they belong to.			
		14th	Theme 2 presentation (Palshimatsu) In teams, give a 10-minu Theme 1 and have a 10-reveryone.		on (Part 1: Nakai and -minute presentation about a 10-minute discussion with		In teams, give a 10-minute presentation about Theme 2 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.		
		15th	Theme 2 presental Ishimatsu) Same as above	tion (Part 2: Nak	ai and	In teams, give a 10-minute presentation about Theme 2 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.			
		16th	No final exam						
Evaluatio	n Met	hod and V	Veight (%)	<u></u>					
	Resume		Presentation&D iscussion	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	
Subtotal	3	0	60	10	0	0	0	100	
Basic Proficiency	ency 0		0	0	0	0	0	0	
Specialized Proficiency		0	60	10	0	0	0	100	
Cross Area Proficiency			0	0	0	0	0	0	

А	.kashi Co	llege		Year	2023		Course Title	Industrial Materials
Course :	Informa	tion			1			
Course Co	ode	5010				Course Category	/ Speciali	zed / Compulsory
Class Forr	mat	Lecture				Credits	Acaden	nic Credit: 2
Departme	ent	Mechanie Engineer		nd Electronic	System	Student Grade	Adv. 1s	t
Term		First Ser		er		Classes per Wee	ek 2	
Textbook Teaching		A separa	ate ha	andout will b	e provided.			
Instructor		MORISH	ITA 1	Fomohiro,KA	JIMURA Yoshihiro,	TAKEDA Naho,H]	RAISHI Toshi	hiro
	Objectiv							
on some k (2) Becon control of (3) Under individuall (4) Under	kinds of ar ne able to concrete s stand the ly studying stand the	isotropic m think about structures. factors to c and expla physical qu	nateri t tech (taug consid ining iantit	ials. (taught nnological inr ght by Taked der when ma materials of	by Morishita). novation through t a). king environment i interest to each o o magnetism along	he fusion of diffe ally friendly choic ther. (taught by	rent fields for es for materia Hiraishi).	xplain the engineering application the construction, maintenance, and ils, and deepen understanding by tand and explain the properties of
Rubric								
				eal Level		Standard Level		Unacceptable Level
Achievem	ent 1		an ex		e cause of naterials and s engineering	Understand the anisotropy in mathematical exelastic moduli.	aterials and	Do not understand he cause of anisotropy in materials.
Achievem	ent 2		be co	etween their	e relationship own specialty and leering, and make	Can explain the between their or concrete engine	wn specialtv a	Cannot explain the relationship between their own specialty and concrete engineering.
Achievem	ent 3		lm.	aking enviroi	CA analysis for nmentally friendly ustrial materials.	Understand the consider for mal environmentally for industrial ma	king friendly choic	bo not understand the need to make environmentally friendly choices for industrial materials.
Achievem	ent 4		qu m an th	nd understan e properties		Understand the quantities relate magnetism, alor and understand the properties o magnetic mater	id to ng with units, and can expla f various	Do not understand the physical quantities related to magnetism, along with units, and do not understand and cannot explain the properties of various magnetic materials.
Assigne	d Depar	tment Ob	oject	ives				
Teachin	g Metho	d						
Outline		composi of concre for envir explainir by Hirais applicati	te. (8 ete (a onme ng ma shi.) (on ca	3 hours, taug a typical mat ental issues. aterials' envii (4) Understa ases. (8 hour	Int by Morishita.) erial for urban cor (6 hours, taught t ronmental impact nd the characteris s, taught by Kajim	(2) Explain the mastruction), maint by Takeda.) (3) Departion of the properticatics and properticatics.)	nechanical procenance and content of the content of	ggregate and particle dispersed perties and reinforcement methods ontrol techniques, and consideration tanding by individually studying and idustrial materials. (8 hours, taught nagnetic materials and explain their
Style		Weeks 1 learn ea Weeks 5 methods Weeks 8 environn related t disadvar Weeks 1 and beco	4 (N ch ot i-7 (T is, ma is-11 (menta io the ntage 2-15 ome a ate ap	Morishita): Gi her on some 'akeda): Stu intenance ar (Hiraishi): Af al impact acc eir graduate s, and enviro (Kajimura): able to unde	engineering applidents will learn ab do control techniqueter explaining choi ording to a Life Cystudy's special resonmental impact. Students will lear rstand and explainses.	effects of micros cations of anisotr out the mechanic les, and consider ces of industrial in rale Assessment (earch and use Po in the physical qual the properties of	scopic properticopic materials call properties ation for enviruaterials and LCA), student werPoint to properties relate f various mag	of concrete, reinforcement onmental issues. the difference in their is will select one industrial material resent its advantages, d to magnetism along with units, netic materials. Students will also
Notice		guarante assignm	eed ir ent r	n classes and eports.	amount to 90 hou I the standard self more of classes v	-study time requi	red for pre-st	rs include the learning time udy / review, and completing
Charact	eristics o	of Class /	Div	ision in Le	arning			
☑ Active	Learning		Z	Aided by IC	T.	☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced
						•		· · · · · · · · · · · · · · · · · · ·
Course	Plan							
1st	1st	1st	(Mor Lear	ss-strain rela ishita)	tion and elastic me elastic moduli for a	oduli	Goals Can explain sc their moduli.	me types of elastic anisotropy and
Semeste r	Quarter	2nd	(Mor Lear	ishita) n about the r	polycrystalline agg relationship on the rystal and aggrega	elastic moduli	grains with tex	at the metals are an aggregate of cture, and their macroscopic moduli by the orientation distribution

			5					<u> </u>	
		3rd	Particle dispersed about the relations particles and comp	ship on elastic mo posite.	oduli between	Can explain the erelated by shape, of particles.			
		4th	Anisotropy of vario (Morishita) Give a presentatio application in an a	n on an example	of engineering	Can explain the ekinds of anisotrop		cation on some	
		5th	Introduction to con Learn about concr construction), its of mechanical proper	ete (a typical ma constituent mater		Can explain conc mechanical prope		materials and	
		6th	Durability, mainter for concrete struct Learn how to reinf how to deal with o durability.	ures (Takeda) force concrete str	uctures, and	Can explain the r techniques for co			
		7th	Innovation in the c Learn about environments in the	onmental issues a	and new ´	Can explain how problems and ner construction field	w technologies ir		
		8th Materials and environmental impact (Hiraishi) Learn about the results of analyzing various industrial materials' environmental impact using an LCA (Life Cycle Assessment) method.				Can analyze the difference between various industrial materials by means of an LCA (Life Cycle Assessment).			
		9th	Study a material's Give a presentatio industrial material	n on the characte	shi) eristics of an	Can explain the a disadvantages of special research.			
	10th 11th 12th	materials.					Can explain the applications, advantages, and disadvantages of an industrial material related to		
		11th	Study a material's Give a presentatio industrial material	n on the characte	shi) eristics of an	Can explain the a disadvantages of special research.			
		12th	An outline of mag Outline the develo materials and thei about specific case fields today.	pment history of r characteristics.	magnetic Also learn	Outline the devel materials and the explain the specif many fields today	ir characteristics ic cases that are	. Can also	
I I	2nd Quarter		Physical properties (Kajimura) Learn about the baphysical properties learned in the field use and application respective areas of understanding of t	asics of magnetis of magnetic ma d of electricity, et n cases of interes f specialty and de	m and the terials as c. Investigate st in the	Learn about the basics of magnetism and the physical properties of magnetic materials as learned in the field of electricity, etc. Can investigate use and application cases of interest in the respective areas of specialty and deepen understanding of their principles. Can explain the principles and application examples of magnetic sensors that use magnetic materials, and explain intelligent materials and intelligent magnetic materials.			
		1401	Principles and app sensors that use n Introduce principle magnetic sensors and also introduce intelligent magnet	nagnetic material es and applicatior that use magneti i intelligent mater	s (Kajimura) n examples of c materials,				
		1 E+h	Applications exam Compile into a rep investigation into a area of specialty.	ort the results of	an ` í	Can compile into a report and explain the results of an investigation into magnetic materials in one's own area of specialty.			
		16th	Final exam						
Evaluation	on Met	hod and V	Veight (%)						
	Examination		Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	
Subtotal	10	00	0	0	0	0	0	100	
Basic Proficiency	sic oficiency 50		0	0	0	0	0	50	
Specialized Proficiency	^d / 50)	0	0	0	0	0	50	
Cross Area Proficiency	a 0		0	0	0	0	0	0	

į.	Akashi Co	ollege	Year	2023		Cour Titl		Information Processing
Course	Informa	tion	·					
Course Co	ode	5011			Course Catego	ry Spe	ecialize	d / Elective
Class For	mat	Lecture			Credits	Aca	ademic	Credit: 2
Departme	ent	Mechanio Engineer	cal and Electronic ing	c System	Student Grade	Ad	v. 1st	
Term		First Sen			Classes per We	ek 2		
Textbook								
Teaching Instructor	Materials	INOUE K	azupari					
	Objectiv		azunan					
(1) Have (2) Under tools (D).	knowledge rstand the	e of the vari characteris		s that a computer I ats, and can conve rs in a way that is e			ropriat ts and	e choices (H). process them using appropriate
Rubric								
			Ideal Level		Standard Level			Unacceptable Level
Achievem	nent 1		Fully understated formats that cand their man protection.	computers handle,	Understand the that computers their managem protection.	s handle, a		Do not understand the data formats that computers handle, and their management and protection.
Achievem	nent 2		Fully understa prepare techn documentatio presentation r various techni	ical n and naterials, and	Understand ho technical docur presentation my various technical	mentation a laterials, al	and	Do not understand how to prepare technical documentation and presentation materials, and various techniques.
Achievem	nent 3		Fully understa calculations ar using Excel ar	nd processing	Understand sta calculations an using Excel and	d processir	ng	Do not understand statistical calculations and processing using Excel or ipyson.
Assigne	ed Depar	tment Ob	jectives					
Teachin	ng Metho	d						
Outline		create the includes various a	e materials used papers, posters, applications, the	d in various types o and presentations	f presenting is a . From the data s to learn advar	ın importaı handled b	nt task v comp	pecialty. Improving the ability to for conveying technology. This outers to material creation using application technology and
Style		will be ta From we Office an	lught in a lecture ek 3 to week 15 d statistical calci	e-style format.	ng technical doc	umentation	n and p	and protection in weeks 1 and 2 resentation materials using MS
Office a exercis This co			ioriiats.		sing using Exce	i and ipyso	II, WIII	be taught in lecture-style and
Notice		This cour guarante assignmentake the	rse's content will ed in classes and ent reports. Sinc course.	l amount to 90 hou d the standard self- e there is no prerec	rs of study in to study time requ quisite knowledo	tal. These uired for pr ge required	hours e-stud	include the learning time y / review, and completing ents from all departments can
	teristics (This cour guarante assignmentake the Students	rse's content will ted in classes and ent reports. Sinc course. who miss 1/3 o	l amount to 90 hou d the standard self e there is no prered r more of classes v	rs of study in to study time requ quisite knowledo	tal. These uired for pr ge required	hours e-stud	include the learning time y / review, and completing
	teristics (Learning	This cour guarante assignmentake the Students	rse's content will ed in classes and ent reports. Sinc course.	l amount to 90 hou d the standard self- e there is no prered r more of classes v earning	rs of study in to study time requ quisite knowledo	tal. These uired for pr ge required e for evalu	hours e-stud l, stude ation.	include the learning time y / review, and completing
Charact Active	e Learning	This cour guarante assignmentake the Students	rse's content will sed in classes and ent reports. Sinc course. who miss 1/3 o Division in Le	l amount to 90 hou d the standard self- e there is no prered r more of classes v earning	rs of study in to -study time requ quisite knowledo vill not be eligibl	tal. These uired for pr ge required e for evalu	hours e-stud l, stude ation.	include the learning time y / review, and completing ents from all departments can
Charact ☐ Active	e Learning	This cour guarante assignme take the Students	rse's content will led in classes and ent reports. Since course. who miss 1/3 o Division in Le	l amount to 90 hou d the standard self- e there is no prered r more of classes v earning	rs of study in to -study time requ quisite knowledo vill not be eligibl	tal. These uired for pr ge required e for evalu o Remote	hours e-stud l, stude ation.	include the learning time y / review, and completing ents from all departments can
Charact ☐ Active	e Learning	This cour guarante assignme take the Students	rse's content will led in classes and ent reports. Since course. who miss 1/3 o Division in Le Aided by Id Theme	l amount to 90 hou d the standard self- e there is no prerec or more of classes v earning	rs of study in to-study time requestions of study time requestions. The study in th	tal. These uired for pr ge required e for evalu o Remote	hours re-stud l, stude ation.	Include the learning time by / review, and completing ents from all departments can Instructor Professionally Experienced
Charact	e Learning	This cour guarante assignme take the Students of Class /	rse's content will sed in classes and ent reports. Since course. who miss 1/3 or Division in Letter Aided by Idea. Theme Explain the data and their character.	l amount to 90 hou d the standard self- e there is no prerec r more of classes v earning CT formats that comp teristics.	rs of study in to- study time requipite knowleds vill not be eligible Applicable to	tal. These uired for pr ge required e for evalu o Remote Goals Understar handle an	hours re-stud l, stude ation. Class	Include the learning time y / review, and completing ents from all departments can Instructor Professionally Experienced data formats that computers characteristics.
Charact	e Learning	This cour guarante assignme take the Students of Class /	rse's content will sed in classes and the course. who miss 1/3 or Division in Letter Aided by Italian the data and their character selection in the complex of complex plain the internetworks of complex and their character selection.	l amount to 90 houd the standard selfet there is no prereder more of classes we carning CT formats that computeristics. That is the computer of the compute	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle ge, and	tal. These uired for prige required e for evalured o Remote o Goals Understar handle an Understar networks	hours e-stud for the formula t	Include the learning time y / review, and completing ents from all departments can Instructor Professionally Experienced data formats that computers characteristics. nternal structure, storage, and puters.
Charact Active	e Learning	This cour guarante assignme take the Students of Class /	rse's content will sed in classes and ent reports. Since course. Division in Le Aided by Id Theme Explain the data and their character character company in the company	formats that compteristics. In amount to 90 hound the standard selfer there is no prerector more of classes we carning CT formats that compteristics. In all structure, storal puters. In appears, sections, parts found in documents.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle age, and earagraphs, ent creation.	tal. These pired for proge required to Remote	hours re-stud, stude ation. Class Independent the indicate of community stude in the indicate of community students, fonting the indicate of community students.	Include the learning time y / review, and completing ents from all departments can Instructor Professionally Experienced data formats that computers characteristics. Internal structure, storage, and puters. Instructor Professionally Experienced
Charact Active	Plan lst	This cour guarante assignme take the Students of Class /	Theme Explain the data and their character pasts of comments and the comments and the comments and their character pasts of comments and indents and	formats that compteristics. In an appears, sections, parts found in documents with a compteristics. In appears, sections, parts found in documents with a compteristic sections.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle ge, and earagraphs, ent creation. e for pictures	tal. These pired for proge required to Remote	hours re-stud, stude ation. Class Ind the result of common style	Include the learning time by / review, and completing ents from all departments can learning time sents from all departments can learning
Charact Active Course	Plan	This courguaranter assignments take the Students of Class /	Theme Explain the data and their character services of comments of the comment	formats that compteristics. In an apputers, sections, parts found in docume k and paste metafilicross-reference.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle ge, and paragraphs, ent creation. e for pictures entation using	tal. These pired for proge required to Remote	hours re-stud, stude ation. Class Ind the result of common style	Include the learning time by / review, and completing ents from all departments can learning time sents from all departments can learning the learning time. Instructor Professionally Experienced learning that computers characteristics. Internal structure, storage, and puters. In the learning time in the link and paste metafile for learning technical documentation using learning time.
Charact Active Course	Plan lst	This coul guarante assignmentake the Students of Class /	rse's content will red in classes and ent reports. Since course. who miss 1/3 or Division in Letter and their character and their character and their character and their sylain styles, classes and indentification. Explain paste lin and tables, and or Create and submething and submething and course and co	formats that compteristics. In and paste metafilicross-reference. In the compteristics of the compteristics. In a paste metafilicross-reference. In a documentation using create different diagrams.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle ge, and paragraphs, ent creation. e for pictures entation using	tal. These ired for prige required to revalue of Remote	hours e-stud, stude ation. Class Ind the of the of common style	Include the learning time by / review, and completing ents from all departments can learning time sents from all departments can learning
Charact Active	Plan lst	This coul guarante assignmentake the Students of Class /	Theme Explain the data and their charace Explain the internetworks of comments of comments and indentification. Explain styles, characteristics, and indentification. Explain paste linuand tables, and of comments of comments of comments.	formats that compteristics. In and paste metafilicross-reference. In the compteristics of the compteristics. In a paste metafilicross-reference. In a documentation using create different diagrams.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle ge, and paragraphs, ent creation. e for pictures entation using ng PowerPoint. egrams, avback.	tal. These ired for prige required to provide the for evaluation of the following of the following t	hours e-stud, stude ation. Class Ind the of common style of	Include the learning time y / review, and completing ents from all departments can Instructor Professionally Experienced data formats that computers characteristics. nternal structure, storage, and puters. s, chapters, sections, s, and indents found in document e link and paste metafile for es, and cross-reference. hit technical documentation using documentation using PowerPoint to create different diagrams,
Charact Active Course	Plan lst	This coul guarante assignmentake the Students of Class /	Theme Explain the data and their character texports of comments of	formats that compteristics. In and paste metafil cross-reference. In the chinical documentation using create different diasides / masters. In a documentation using create different diasides / masters. In a documentation using create different diasides / masters. In a documentation using create different diasides / masters. In techniques and plantando documentation documen	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle ge, and paragraphs, ent creation. e for pictures entation using ng PowerPoint. agrams, ayback, lata.	tal. These pired for proge required to Remote	hours e-stud l, stude ation. Class Ind the of common d style ss, font land past and tab d subnuch land land how, and sed effecting ed, chnical land effecting ed, chnical land effecting ed, chnical land land land land land land land la	Include the learning time by / review, and completing ents from all departments can learning time. Instructor Professionally Experienced data formats that computers characteristics. Internal structure, storage, and puters. Instructure, storag
Charact Active Course	Plan lst	This coul guarante assignments take the Students of Class /	rse's content will red in classes and reports. Since course. who miss 1/3 or Division in Lease and their character of the internetworks of common tables, and of the content of the conte	formats that compteristics. Inapters, sections, pater found in documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters. It is documentation using create different diasides / masters.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle age, and paragraphs, ant creation. e for pictures entation using ag PowerPoint. agrams, ayback, lata. mentation	tal. These ired for prige required to provide the for evaluation of the following of the following t	hours e-stud, stude ation. Class Ind the of the of common at style is, font and past and how, and sind effecting and effecting in the of the	Include the learning time by / review, and completing ents from all departments can learning time. Instructor Professionally Experienced data formats that computers characteristics. Internal structure, storage, and puters. Instructure, storag
Charact Active Course	Plan lst	This courguaranter assignments take the Students of Class /	Theme Explain the data and their character tenders of comment of the comment of t	formats that compteristics. hapters, sections, pts found in documentation usic create different diaslides / masters. techniques and pla audio, and video compresentation documentation documentation documentation usic create different diaslides / masters.	rs of study in to- study time requisite knowledge vill not be eligible Applicable to uters handle age, and erragraphs, ent creation. e for pictures entation using ang PowerPoint. agrams, ayback, lata. mentation analysis.	tal. These pired for proge required to revalue of the for evalue of the following of the following the following in the following including the following power of the following po	hours re-stud, stude ation. Class Ind the red their re	Include the learning time by / review, and completing ents from all departments can learning time. Instructor Professionally Experienced data formats that computers characteristics. Internal structure, storage, and puters. Instructure, storag

	12th	Explain file pro	tection, encry	ption, and security.	Can protec	t, encrypt, and se	ecure files.
	13th	Explain a cloud development e	l-assisted inter nvironment.	ractive program		d a cloud-assisted nt environment.	l interactive program
	14th	Explain databa execution.	se analysis tha	at used interactive	Understand interactive	d database analys execution.	sis that used
	15th	Summary			Understand	d the summary.	
	16th	No final exam			No final ex	am	
Evaluation	Method and	l Weight (%)					
		Assignments	6				Total
Subtotal	0	100	0	0	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	cialized ciency 0 100 0				0	0	100
Cross Area Proficiency	s Area					0	0

Δ	Akashi Co	ollege	Year	2023		Course Title	Analytical Mechanics		
Course	Informa	tion							
Course Co	ode	5012			Course Categor	y Specializ	ed / Elective		
Class For	mat	Lecture			Credits	Academi	c Credit: 2		
Departme	ent	Engineering		System	Student Grade	Adv. 1st			
Term	d/	First Semes	ter		Classes per Wee	ek 2			
Textbook Teaching Instructor	Matérials	NAKANISHI	Hiroshi						
	Objectiv		TIIIOSIII						
(1) Under	rstand the rstand and	Lagrangian fo	ethods of anal	ysis by Lagrangia nonical formulatio	n formulation.				
Rubric			(
		1	Ideal Level		Standard Level		Unacceptable Level		
Achievem	nent 1	f	Fully understan formulation of I mechanics.	nd the Lagrangian	Understand the Lagrangian med	formulation of hanics.	Do not understand the formulation of Lagrangian mechanics.		
Achievem	nent 2	F		d the methods agrangian	Understand the analysis by Lagr formulation.		Do not understand the methods of analysis by Lagrangian formulation.		
Achievem	nent 3	f	Fully understan formulation of I mechanics.	d the Hamiltonian	Understand the Hamiltonian me		Do not understand the formulation of Hamiltonian mechanics.		
Assigne	d Depar	tment Obje	ctives						
Teachin	ng Metho	d							
Outline		useful and p	oowerfull in var ject to be hand nalytic mechan	rious engineering led and consider	fields. However, how the equatior	it is necessary in of motion in it	stigated mathematically. It is to consider a coordinate system s coordinate system will be. By escriptions with good prospects		
Style		Outline and The student	necessary sub	I to solve the prac	rated through the tice problems wi	eory lectures, fo th their own ha	ollowed by practice lectures. nds, and to explain their solutions		
Notice		This course' guaranteed assignment time, and st	s content will a in classes and reports. Be aw tudents are adv	amount to 90 hou the standard self vare that class tim vised to thorough	-study time requine makes up a sn ly pre-study or re	ired for pre-sturnall percentage eview.	include the learning time dy / review, and completing of the overall expected learning		
Charact	oristics		vision in Lea	more of classes v	viii not be eligible	ror evaluation.			
☑ Active			☐ Aided by IC		☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced		
Course	Plan								
		The	eme		(Goals			
		1st The	e principle of le	ast action		Learn the basics about the principle of least action.			
		2nd Exa	amples of Lagra	ange's equations	1 (equations	the examples of Lagrange's		
			e principle of vi nciple	rtual work and d'	\	work and d'Aler	s about the principle of virtual mbert's principle.		
	1st Quarter	4th Exa	amples of Lagra	ange's equations		Learn and solve equations	the examples of Lagrange's		
	Quarter	5th Cor	nservation laws	5			s of conservation laws.		
		6th Exa	amples of conse	ervation laws		Learn and solve aws.	the examples of conservation		
1st Semeste		7th Into	egration of the	equations of mot	.1011	motion.	s of integration of the equations of		
r	emeste	8th Exa	amples of integ tion	ration of the equa	ations of	Learn and solve equations of mo	the examples of integration of the otion		
		9th Sm	all oscilations		l	Learn the basic	s of small oscilations.		
			imples of smal				the examples of small oscilations.		
			tion of a rigid b	•			s of motion of a rigid body. the examples of rigid body		
	2nd Quarter		imples of rigid	nertial frame of re		motions	s of motion in a non-inertial frame		
		1.4+b Exa	ample of motion	n in a non-inertia	I frame of	of reference. Learn and solve	the example of motion in a non-		
		Tele	erence		i	nertial frame o	f reference.		
		15th Ca	nonical equation	ons		Learn the basics of canonical equations.			

16th	Final exam									
Evaluation Method and Weight (%)										
	Examination	Exercise	Total							
Subtotal	70	30	100							
Basic Proficiency	0	0	0							
Specialized Proficiency	70	30	100							
Cross Area Proficiency	0	0	0							

А	.kashi Co	ollege	Year	2023		Course Title	Inclusive Design
Course	Informa	tion	1			1 1100	1
Course Co		5013			Course Categor	y Speciali	zed / Elective
Class Forr	mat	Lecture	-	-	Credits	Academ	ic Credit: 2
Departme	ent	Mechanie Engineer	cal and Electronic	c System	Student Grade	Adv. 1s	t
Term		First Ser			Classes per We	ek 2	
Textbook Teaching	Materials	クス ユー	ザー情報集・事例	ハンドブック』、平 集』、国際ユニバー	サルデザイン協議	会編、『ICF	』厚労省資料他
Instructor		•	Takehiko,AKITA	Naoshige,IWATA	Naoki,HIRAI Yasi	uyuki,OKAMUR	A Hideki
(1)日本(2)ユー	-ザー参加型	ッパにおける 単手法につい	インクルーシブデ ての理解 を包括的に援助す	ザインの理解 るための、確かな知	識と実践力及び人	間性の涵養を目	票とする。
Rubric					_		
			理想的な到達レ		標準的な到達レイ		未到達レベルの目安
評価項目1			十分理解し説明		インクルーシブラ理解し説明できる	3	理解し、説明できない。
評価項目2			複数の知識を下 一つでなく複数 できる。	-分に応用し、解が ぬのアイデアを提示	複数の知識を応用なく複数のアイラ	FD、麻が一つで デアを提示できる	複数の知識を応用し、解が一つで はく複数のアイデアを提示できない。
評価項目3			し、説明できる	-特性を十分に理解	多様なユーザー特 できる。	寺性を理解し説明	多様なユーザー特性を理解し、説 明できない。
		tment Ob	jectives				
Teachin	g Metho				10-z=±+ /	5 11 183 - :	
ジネスとして成り立つメインストリームのデザイン開発 イノベーションの有効な手法としても注目されている。 ヨーロッパにおけるインクルーシブデザイン、日本によ ザー参加型手法について、WSなどを交えながら理解す として従事し、現在、九州大学大学院教授。秋田は、介 岩田は、28年間デザイナーとして従事、岡村は、25 事務所を主宰。これらの経験を活かし授業を行うもので						、具体的な医療・ クルーシブデザィ	・福祉分野等での事例研究を題材に、 イン、およびそのプロセスであるユー
Style		授業が、	講義形式とワーク		式によっておこな [・]	う。授業に必要な 11型デザイン」	は消義で適宜配布する。参考図 (学芸出版社)
Notice		90時間に	相当する学習内容 ある。 象としない欠席条	である。出身学科を	問わず、できるだ	け平易に授業し、	は標準的な自己学習時間の総計が、、グループによるワークショップも行 大塚)とオンライン(平井、秋田)を
Charact	eristics (-	Division in Le	earning			
☑ Active		5. G.G.S. 7	☑ Aided by I	<u> </u>	☑ Applicable to	☑ Instructor Professionally Experienced	
Course	Plan		-			0 1	
			Theme インクルーシブデ			Goals	
			(九州大学大学院 インを理解する。 これまでのデザイる 違うのか?なぜそ な事例を題材とし	教授)) 世界のアク 」 ンとインクルーシブ の必要性があるのか 、いっしょに考えて	プセイシブルデザ デザインは何が について具体的 いく	世界のアクセイ ニバーサルデザ	シブルデザイン、バリアフリーからユ インを理解する。
		2nd	インクルーシブデ ザインやバリアフ	ザインとは何か?② ザインの成立背景や リーなど類似の概念 での具体的な事例を 。	ユニバーサルデ との相違点につ	インクルーシブ [・]	デザインの概念・方法論を理解する。
1ct		3rd	第3週 疑似体験() 様々な疑似体験用 を行う。	こよる校内バリフリ- 具を用いて、明石高	- 大塚 専内の施設点検	高齢者、視覚障 ーの特製を理解	書者などの疑似体験によって各ユーザ する。
Semeste r	st 1st Quarter		オフィス空間とイ (九州大学大学院 企業では経営理念 っている。企業経	やビジョンに基づい 営とモノづくりの関 を考えながら企業で	て商品開発を行 係や市場との関	オフィス空間で とにユーザーリ	のインクルーシブデザインの実例をも サーチの方法を学ぶ。
			オフィス空間とイ オフィスとは何か があり、どのよう て、オフィスを計	ングルーシブデザイ 、オフィス空間には 、なプロダクトが存在 画し、空間をデザイ ないのかを考える。	どのような機能 するのか。そし	オフィス空間で もとに考えるこ	のインクルーシブデザインを当事者と とができる。
		6+h	オフィスで使うプ が、それらの商品	ンクルーシブデザイ ロダクトには文具や がどのような考え方 いるのかを事例を基	家具などがある 、プロセスを経	オフィス空間で 理解する。	のインクルーシブデザインプロセスを

おいけい										
8th プリス)			7th	大塚 普段勉強している教 し合って、グループ	室や学校空間で気 でディスカッショ	づいたことを出		察によって設定で	き、課題解決がで	
Ph			8th	プリス)) 社会で実際に実践し 」の事例を紹介しな	ている「チームメ がら、実際に体験	イド・デザイン をする。「グラ	参加と共創のデザー	インについて、理	解する。	
10th イス)、大塚 10th 環境整備のポイントを実践事例から考察し多様な人に 環境整備の基礎を理解する。			9th	チームメイド・デザ ン(学生による学科絹 をおこなう。実際に	インによる「グラ B介パンフレット・	フィックデザイ · DVD)」の実践			イックデザイン	
Part			10th	高齢者・障害者の住 イス)、大塚 高齢者・障害者の住 環境整備のポイント	環境について、各 を実践事例から考	疾患ケースの住	バリアフリーと住り 環境整備の基礎を現	環境の基礎及び重 里解する。	要性を認識し、住	
Aud Quarter			11th	バリアフリー住宅に 考察して、身体に障	ある主要な設備と 害を持つ人の生活	そのデザインを を包括的に捉え	インクルーシブな/	(リアフリー住宅	整備の基礎を学ぶ	
13th			12th	当時者との対話によ 塚 我が国の当事者参画 ム」、兵庫県福祉の まちづくりアドバイ	るソーシャル・イ の「ユーザーエキ まちづくり条例に	ノベーション 大 スパートシステ おける「福祉の		らける福祉のまち	づくりについて理	
14th		Qua. to	13th	大塚 「アスピレーション と」というテーマで て、ワークショップ	のデザイン : デザ	インができるこ			イン手法によって	
Evaluation Method and Weight 第2 70 0 70 0 <td <="" rowspan="8" td=""><td></td><td></td><td>14th</td><td> インクルーシブデザ 大塚 プロセスにおいて、 し可視化を行う。ユ の中から得られた気</td><td>ニーズの中から重 ーザーとの直接の</td><td>要な課題を抽出 やりとりや観察</td><td></td><td>ノサーチし可視化</td><td>し、課題解決を行</td></td>	<td></td> <td></td> <td>14th</td> <td> インクルーシブデザ 大塚 プロセスにおいて、 し可視化を行う。ユ の中から得られた気</td> <td>ニーズの中から重 ーザーとの直接の</td> <td>要な課題を抽出 やりとりや観察</td> <td></td> <td>ノサーチし可視化</td> <td>し、課題解決を行</td>			14th	 インクルーシブデザ 大塚 プロセスにおいて、 し可視化を行う。ユ の中から得られた気	ニーズの中から重 ーザーとの直接の	要な課題を抽出 やりとりや観察		ノサーチし可視化	し、課題解決を行
Evaluation Method and Weight (%) 試験 発表 相互評価 態度 レポート その他 Total Subtotal 0 70 0 0 30 0 100 基礎的能力 0 0 0 0 0 0 専門的能力 0 0 0 0 0 0					(秋田)・大塚 見つけ出された重要	課題についての解	決策をデザイン	重要課題について、決案のプレゼができ	インクルーシブ きる。	デザインによる解
試験 発表 相互評価 態度 レポート その他 Total Subtotal 0 70 0 0 30 0 100 基礎的能力 0 0 0 0 0 0 0 専門的能力 0 0 0 0 0 0 0				16th	期末試験実施せず					
試験 発表 相互評価 態度 レポート その他 Total Subtotal 0 70 0 0 30 0 100 基礎的能力 0 0 0 0 0 0 0 専門的能力 0 0 0 0 0 0 0		Evaluation	on Meth	od and W	/eiaht (%)					
Subtotal 0 70 0 0 30 0 100 基礎的能力 0 0 0 0 0 0 0 専門的能力 0 0 0 0 0 0 0						相互評価	態度	レポート	その他	Total
専門的能力 0 0 0 0 0 0		Subtotal					1			
(3) 3PS/MAYS			0		0	0	0		0	0
分野横断的能力 0 70 0 0 30 0 100		専門的能力	0		0	0	0	0	0	0
	分野横断的	能力 0		70	0	0	30	0	100	

A	kashi Co	ollege	Year	2023		Course Title	Off-Campus Practical Training	
Course	Informa	tion	·	•			-	
Course Co	ode	5014			Course Categor	y Special	zed / Compulsory	
Class Forr	mat	Practical			Credits	School	Credit: 2	
Departme	ent	Mechanic Engineer	cal and Electronic	c System	Student Grade	Adv. 1s	t	
Term		Year-rou			Classes per Wee	ek 前期:2 ³	後期:2	
Textbook	and/or					1		
Teaching -								
Instructor								
(1) Can e	Objectiv xperience e. vork collab	some of the	e actual technica	I activities at the horkplaces and thinked empirically.	ost companies ar	nd work on sol	ving problems with the necessary	
	eport effec	tively what	has been learne	d empirically.				
Rubric					1			
			Ideal Level		Standard Level		Unacceptable Level	
Achievem	ent 1		actual technic	ce some of the all activities at the es and actively ag problems with assistance.	Can experience actual technical host companies solving problem necessary assist	activities at the and work on s with the	Cannot experience some of the actual technical activities at the host companies and work on solving problems with the necessary assistance.	
Achievem	ent 2			aboratively in the cplace and actively	Can work collab assigned workpl freely.	oratively in th lace and think	e Cannot work collaboratively in the assigned workplace and think freely.	
Achievem	ent 3		Can effectively appropriately been learned	y and report what has empirically.	Can effectively r been learned er		Cannot effectively report what has been learned empirically.	
Assigned Department Objectives								
Teachin	g Metho							
Outline		sense of	practical techno	oart of an introduct logy through techn from technical expe	ical experience ir	n companies o	vich system. The aim is to gain a r government agencies, etc., and to	
Style		Follow th	ne host company	instructor's instru	ctions.			
Notice		internshi language summer (manner with a to If it is de things lik internshi case, the etc. (30° and Aim: (1) "Expstudy us member (2) "Wor research	p period, studene that is appropri- holidays, etc. The lesson, prelimine that of 90 hours. The second circums of the Rubric of the specified of the specified second circums of the specified second c	its should actively to late for an intern. The graduate study is any research on the onducting the interstances, and if it is indicated with research on consist of an evaluation items, if the actual technical methods of the confaculty member of	ry to acquire teclifies internship penternship may in the host company) aship at a companecessary to prove companies, etc., action by research outcomes debriche following item activities at the mpanies, etc., of research there."	hnical and oth riod shall be a clude up to 15, debrief session or other in ride reasonable related to the advisers for sef session resuns should be research targetribute to the	pecial research. During the er skills, and dress and use t least 10 working days during the hours of preliminary guidance ons, and time for preparing reports, stitution will be difficult due to e consideration for students, the e field of graduate study. In that students' research on companies, alts (40%). In the Course Objectives explaced as follows: es, etc." as "conduct research and et and to obtain advice from the activities of company of target	
Charact	eristics	of Class /	Division in Le	earning				
☑ Active	Learning		☐ Aided by I	СТ	☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced	
Course	Plan				<u> </u>	- 1		
			Theme			Goals		
		1st	Guidance				out precautions of internship and e host company, etc.	
		2nd	Internship		(technical experience at the host	
	1st		Same as above			Same as abov	e	
	Quarter		Same as above		!	Same as abov	e	
1ct			Same as above			Same as abov		
1st Semeste			Same as above			Same as abov		
r			Same as above			Same as abov		
			Same as above			Same as abov		
			Same as above			Same as abov		
	2nd		Same as above			Same as above		
	Quarter		Same as above		Same as above			
			Same as above			Same as abov		
12th 13th		าวเม	Same as above			Same as above		

		14th	Same as above		Same as above	
		15th	Same as above		Same as above	
		16th	No final exam			
		1st	Same as above		Same as above	
		2nd	Same as above		Same as above	
		3rd	Same as above		Same as above	
	3rd	4th	Same as above		Same as above	
	Quarter	5th	Same as above		Same as above	
		6th	Same as above		Same as above	
		7th	Same as above		Same as above	
2nd		8th	Same as above		Same as above	
Semeste		9th	Same as above		Same as above	
		10th	Same as above		Same as above	
		11th	Same as above		Same as above	
	4th	12th	Same as above		Same as above	
	Quarter	13th	Same as above		Same as above	
		14th	Same as above		Same as above	
		15th	Internship debrief ses	sion	A presentation on the internship .	overall outcomes of the
		16th	No final exam			
Evaluat	ion Meth	od an	d Weight (%)			
			Evaluation of the training destination	Report	Debriefing session	Total
Subtotal		:	30	30	40	100
Basic Prof	Basic Proficiency		0	0	0	0
Specialize	ed Proficier	ncy :	30	30	40	100
Cross Are	a Proficier	псу	0	0	0	0

Д	kashi Co	ollege	Year		2023			Course Title	Preliminary Research Studies
Course	Informa	tion							
Course Co		5015				Course Categor	γ	<u> </u>	ed / Compulsory
Class For	mat	Seminar		. ,		Credits		School C	redit: 4
Departme	ent	Engineer	cal and Electroi ing	nic s	System	Student Grade		Adv. 1st	
Term		Year-rou	nd			Classes per We	ek	4	
Textbook Teaching	and/or Materials								
Instructo									
Course	Objectiv	es							
perspectiv (2) Can s	ve toward ummarize	solving pro obtained re	blems. esearch results	as ı		ers, communicate			nd creatively from a wide to others, and discuss them.
Rubric									
			Ideal Level			Standard Level			Unacceptable Level
Achievem	nent 1		Can integrat expertise, a theoretically practically, a a wide persp solving prob	nd e /, sy and pect	examine it estematically, creatively from iive toward	Can integrate a expertise, and a theoretically, sy and practically perspective tow problems.	exan /ster from	ninė it natically, a wide	Cannot integrate and deepen expertise, and examine it theoretically, systematically, and practically from a wide perspective toward solving problems.
Achievem	nent 2		research res posters, con verbally in a	sults nmu a cor	arize obtained as as reports and unicate them mprehensible rs, and discuss	Can summarize research results posters, common verbally to othe them.	s as unica	reports and ate them	Cannot summarize obtained research results as reports and posters, communicate them verbally to others, and discuss them.
Achievem	nent 3		Can fully energian research indicates continuously	lepe	e in learning and endently and	Can engage in l research indeper continuously.	learr ende	ing and ntly and	Cannot engage in learning and research independently and continuously.
Assigne	d Depar	tment Ob	jectives						
Teachin	ig Metho	od							
Outline		and elec	tronic system e The aim is to a	engi	neering fields at	a higher level un	ider i	the supervi	nduct research in the mechanical sion of the faculty member in bundation for graduate study's
Style		member decided exploring	s in charge will after discussing the issues giv will carry out	urse, as it is particularly important for students to work towards research voluntarily, the faculty in charge will first present planned themes for setting up a research theme. The theme will then be after discussing with students with utmost respect to their engineering interests. Furthermore, from the issues given, thinking about the approach methods, right up to answering the questions, will carry out each research process independently and based on their own judgment as much as					
Notice		This cou guarante assignme	rse's content weed in classes a ent reports. Prod in the depart	and to	the standard self ote research inde	-study time requested	iired ctive	for pre-stuly based on	rs include the learning time dy / review, and completing the background knowledge make students ineligible for a
Charact	eristics		Division in	Lea	arnina				
☑ Active			☐ Aided by			☑ Applicable to	o Rei	mote Class	☐ Instructor Professionally Experienced
Course	Plan								
Course	lan		Theme			I	Goal	ls	
		1st	Setting the res	neml	ber in charge will	Lovelain and	Can		research themes independently ching staff.
		2nd	Individual rese	earch	n ely under supervi	sion of each	Can stud	independer ies and res	ntly and continuously conduct earch under each teaching staff.
		3rd	Individual rese Same as above	earch			Sam	e as above	
1st	1st Quarter	4th	Individual rese Same as above		า		Sam	e as above	
Semeste r	Quarter		Individual rese Same as above	earch	า		Sam	e as above	
			Individual rese Same as above		า		Sam	e as above	
		7th	Individual rese Same as above	earcl	า		Sam	e as above	
		8th	Individual rese Same as above	earch	า		Sam	e as above	
	2nd Quarter	9th	Individual rese Same as above		1		Sam	e as above	

10th											
110			10th		rch		Same as abov	e			
14th			11th		rch		Same as abov	e			
14th			12th		rch		Same as abov	e			
14th			13th		rch		Same as abov	Same as above			
15th			14th		rch		Same as abov	e			
1st			15th		rch		Same as abov	e			
Same as above Same as abov			16th	No final exam							
Same as above Same as above Same as above			1st		rch		Same as abov	e			
Same as above Same as abov			2nd		rch		Same as abov	e			
Ath			3rd		rch		Same as abov	e			
Sth		3rd	4th	Individual resea	rch		Same as abov	e			
Can summarize obtained research results as reports and posters, communicate them verbally to others, and discuss them. Examination Presentation Report Autonomy Portfolio Other Total Sasica Proficiency O			5th	Individual research			Same as abov	e			
Tth			6th	Individual resea				e			
Semeste r Same as above Same as above		7t		Individual resea	rch		Same as abov	e			
Semeste r 9th Individual research Same as above 10th Individual research Same as above 11th Individual research Same as above 12th Individual research Same as above 12th Individual research Same as above 13th Individual research Same as above 13th Individual research Same as above 14th Individual research Same as above 15th Presentation review meeting Can summarize obtained research results as reports and posters, communicate them verbally to others, and discuss them. Evaluation Method and Weight (%) Examination Presentation Report Autonomy Portfolio Other Total Subtotal 0 30 40 30 0 0 100 Basic Proficiency 0 10 20 10 0 0 40 Specialized Proficiency 0 20 20 20 0 0 0 60 Cross Area 0 0 0 0 0 60 Cross Area			8th		rch		Same as abov	e			
10th Same as above Same	1		9th					e			
11th			10th					e			
Ath Quarter			11th		rch		Same as above				
Quarter Individual research Same as above 14th Individual research Same as above 15th Presentation review meeting Can summarize obtained research results as reports and posters, communicate them verbally to others, and discuss them. Evaluation Method and Weight (%) Examination Presentation Report Autonomy Portfolio Other Total Subtotal 0 30 40 30 0 0 100 Basic Proficiency 0 10 20 10 0 0 40 Specialized Proficiency 0 20 20 20 0 0 0 60 Cross Area 0 0 0 0 0 0 0		4th	12th		rch		Same as above				
Same as above 15th		-	13th		rch		Same as above				
15th Presentation review meeting reports and posters, communicate them verbally to others, and discuss them.			14th		rch		Same as abov	e			
Total Evaluation Method and Weight (%)		15th		Presentation rev	view meeting		Can summarize obtained research results as reports and posters, communicate them verbally to others, and discuss them.				
Evaluation Method and Weight (%) Examination Presentation Report Autonomy Portfolio Other Total Subtotal 0 30 40 30 0 0 100 Basic Proficiency 0 10 20 10 0 0 40 Specialized Proficiency 0 20 20 20 0 0 60 Cross Area 0 0 0 0 0 0 0		1	16th	No final exam							
Examination Presentation Report Autonomy Portfolio Other Total Subtotal 0 30 40 30 0 0 100 Basic Proficiency 0 10 20 10 0 0 40 Specialized Proficiency 0 20 20 20 0 0 60 Cross Area 0 0 0 0 0 0 0	Evaluati	ion Met	-				•				
Subtotal 0 30 40 30 0 0 100 Basic Proficiency 0 10 20 10 0 0 40 Specialized Proficiency 0 20 20 20 0 0 60 Cross Area 0 0 0 0 0 0 0	Lvaluati				Penort	Autonomy	Portfolio	Othor	Total		
Proficiency 0 10 20 10 0 40 Specialized Proficiency 0 20 20 0 0 60 Cross Area 0 0 0 0 0 0 0	Subtotal		Carrin lacion								
Proficiency 0 20 20 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0		y 0		10	20	10	0	0	40		
	Specialize Proficienc	ed o		20	20	20	0	0	60		
				0	0	0	0	0	0		

Δ	ıkashi Co	olleae	Year	2023		Course		System Control
	Informa					Title	<u> [t</u>	Engineering
Course Co		5016			Course Categor	v Sneci	alize	d / Elective
Class For		Lecture			Credits			Credit: 2
Departme	ent	Mechanic Engineer	cal and Electronic	System	Student Grade	Adv.	1st	
Term		First Sem			Classes per We	ek 2		
Textbook	and/or	資料を配行	布する。参考書とし	して、豊橋技術科学:	大学・高等専門学	校制御工学教育	育連携	第プロジェクト『制御工学』実教出
Teaching Instructor		IXX、1在膝 ENOMOT		じめての現代制御理!	冊』再談任なこで1	性馬90。		
	Objectiv	•	<u> </u>					
1. システ 2. Lyapu 3. 可制御 4. 各種オ 5. 最適レ	ムを状態空 novの安定 正準系への ブザーバを		て、線形時不変シ	ステムの安定判別が ≥実現する状態フィ−	「できる - ドバックゲインを	を算出できる		
Rubric				= -		— -		T
			理想的な到達し		標準的な到達レイ			未到達レベルの目安
システムの	O状態空間表	長現	仕息の線形時不 て、その状態空 る	変システムについ 間表現を導出でき	幾つかの典型的ないて、その状態3	よン人テム例に 空間表現を導出	ゴで	状態空間表現の定義を知らない
Lyapunov 判別	の安定判別	法による安定	E Lyapunovの安定 定手順に基づき きる	定判別法における判 、安定性を判別で	Lyapunovの安定 定手順を説明でき	E判別法におけ きる	·る判	Lyapunovの安定判別法を知らない
可制御正準態フィート	≸系への変掛 ドバックゲ~	換を通じた状 インの算出		の変換を行い、目 ドバックゲインを	状態フィードバッ 安定化すべき行列	ック制御におい 列を説明できる	1T 5	状態フィードバック制御則を知ら ない
	ゲーバを設言		オブザーバゲイ	利用して、目的のンを算出できる	オブザーバの設計すべき行列を説明	†において安定 別できる	化	オブザーバを知らない
を設計でき	きる	最適フィルタ	最適レギュレータおよび最適フィ ルタを設計できる ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・			方程式を解ける	5	最適レギュレータを知らない
		tment Ob	jectives					
Teachin	ig Metho			·	1//		-n	
Outline		理論では、	システム内部の	がに有日した伝達関係 大態を表す変数(状態 全の基礎的な内容を	態変数)を用いたり	及数領域で制化 状態空間表現を	サ糸で を基礎	r設計する。これに対し、現代制御 陸とし時間領域で制御系を設計する
Ch. da						 生、状態フィ-	- ドバ	 、ック制御器とオブザーバの設計法な
Style Notice		本科目は、	て学ぶ。講義内容を復習する演習を毎回実施する。オー 、授業で保証する学習時間と、予習・復習及び課題レポ 相当する学習内容である。また、ラプラス変換や伝達関			ート作成に必要	更な標	票準的な自己学習時間の総計が、
	oristics	識を前提る	とする。 合格の対象 Division in Le	象としない欠席条件((割合) 1/3以上の	欠課		
		OI Class /						☐ Instructor Professionally
☑ Active	Learning		☑ Aided by IO	T	☐ Applicable to	o Remote Cla	ass	Experienced
Course	Plan							
		-	Theme			Goals		
		1st	システムの状態空 (モデル式、平衡 、出力方程式)	間表現 点における近似線形	化、状態方程式	モデル式から 表現を導出で	線形きる	近似を経由してシステムの状態空間
		2nd	状態方程式の解 (行列のジョルダ システムの積分表	ン標準形、SN分解、 現、伝達関数行列)	行列指数関数、	状態方程式の	解を	求められる
		3rd	システムの固有モ (固有モード分解)	ード 、モード分離観測、	モード分離制御	システムのモ	— ドf	解析ができる
	1st	4th	可制御性と可観測性 (可制御性、可到)	生 達性、可観測性、可	検出性)	システムの可	制御	性・可観測性を判定できる
1st Semeste	Semeste		システムの標準形 (システムの正準 部分空間)	構造分解、可制御部	分空間、可観測	システムの正	準構造	造分解を求められる
r	6th		システムの安定性解析と漸近安定化問題 (可安定性、リャブノフの安定性定理、リャプノフ関 数、リャプノフ方程式、漸近安定化)			リャプノフ方	程式	を使って漸近安定化問題が解ける
		7th	状態フィードバッ (状態フィードバ			状態フィード	バック	クによる極指定制御系を設計できる
			総合演習 1			前半のまとめ		
	2nd	901		バ、最小次元オブザ	- /()	全状態および	最小》	欠元オブザーバを設計できる
	Quarter	10th	オブザーバ併用の (制御と観測の分 ドバックによる極	出カフィードバック 雛定理、オブザーバ 指定)	併用出力フィー 	オブザーバを 設計できる	併用	した極指定出力フィードバック系を
				,				

		11th	最適制御系の設計 (変分法、最小作用 トン系、線形最適	用の原理、ラグラン フィードバック制御	ンジュ系とハミル 即)	線形最適フィード	バック系を設計で	きる	
		12th	最適追従制御系の記 (積分動作を含む)	役計 最適フィードバック	7制御)	LQI制御系を設計で	ごきる		
		13th	カルマンフィルタの (確率システム、, フィルタ、カルマ、 御)	の設計と制御への原 ノイズ解析、共分間 ンフィルタ併用のこ	5用 牧行列、カルマン フィードバック制	 適切なノイズ解析 きる	を経て、カルマン:	フィルタを設計で	
		14th	非線形制御の基礎 (1階連立偏微分 力の相対次数、厳	方程式系とフロベニ 密線形化問題)	ニウスの定理、出	簡単な非線形系の厳密線形化問題が解ける			
		15th	総合演習 2			後半のまとめ	後半のまとめ		
		16th	期末試験						
Evaluati	on Me	ethod and	Weight (%)						
		試験	演習	相互評価	態度	ポートフォリオ	その他	Total	
Subtotal		60	40	0	0	0	0	100	
基礎的能力		20	10	0	0	0	0	30	
専門的能力		30	20	0	0	0	0	50	
分野横断的	能力	10	10	0	0	0	0	20	

Akashi College Course Information			١	⁄ear	2023				Advanced Instrumentation Engineering	
Course	Informat	ion								
Course Co	ode	5017				Course Catego	ry	Specialize	d / Elective	
Class Forr	mat	Lecture				Credits		Academic	Credit: 2	
Departme	ent	Engineer		lectronic	System	Student Grade		Adv. 1st		
Term		First Sen	nester			Classes per We	ek	2		
Textbook Teaching	Matérials									
Instructor		FUJIWAF	RA Seiji							
	Objective									
learned. (1) Measu (2) Measu (3) Variou	ırement da ırement sy	ta processi stems anal	ng (units	and star	anding of each of the ndards, and statis rization (system e principles and the	tical data proces	ssing)		riately apply the knowledge	
Rubric			1							
			Ideal L			Standard Level			Unacceptable Level	
Achievem	ent 1		measu (units	rement of and stan	d can apply data processing dards, and processing).	Understand me processing (un standards, and processing).	its and		Do not understand measurement data processing (units and standards, and statistical data processing).	
Achievem	ent 2		measu and ch evalua	rement s aracteriz	d can apply systems analysis cation (system hods, and digital ng).	Understand me systems analys characterization evaluation met signal procession	sis and n (syste hods, a	em	Do not understand measurement systems analysis and characterization (system evaluation methods, and digital signal processing).	
Achievement 3			variou	s basic m	d can apply neasurement c principles and ns).	Understand vameasurement principles and tapplications).	principle		Do not understand various basic measurement principles (basic principles and their applications).	
Assigne	d Depart	ment Ob	jective	5						
	g Metho									
Outline		need for systems. 1) briefly engineer system a	compute This lect review ting, units	r-based cure will the basic and sta etc.); the	measurement aut items common tondards, measurer	omation and on various applied nent data proce	line and I measu ssing, r	d in-proces urements (neasurem	In addition, there is an increasing is measurement in production (what is measurement ent system characteristics and ent principles (basic principles of	
Style		Classes v	vill be he	ld in a le	cture style.					
Notice		guarante	ed in cla: ent repor	sses and ts.	amount to 90 hou the standard self- more of classes v	-study time requ	uired fo	r pre-stud	include the learning time y / review, and completing	
Charact	eristics o	of Class /	Divisio	n in Le	arning	This rot so angiste for ordination				
□ Active		·		ed by IC		☐ Applicable t	o Remo	ote Class	☐ Instructor Professionally Experienced	
Course	Plan									
			Theme				Goals			
		1st	meaning	netrology of measi	y? Study the enginurement, instrument, instrument, instrument, instrument of r	entation,		Understand what metrology is and its basic concepts.		
	2nd		Measurer Study un of SI bas the basic measure				Study units and standards and understand SI base units and dimensional analysis.			
1st Semeste r	1st Quarter	3rd	Study me accuracy	easureme , identify	a error and accura ent errors and me the causes of errors and improve	asurement ors, and study		stand mea ow to redu	surement errors and accuracy, ce error.	
		4th	Study the data and	e statistic learn the	a statistical procestal procestal processing of recorrect data proexamples.	neasurement	Unders	stand the s rement da	statistical processing of lta.	
		5th	Study the analysis o	e basic co of measu	tems and system onfiguration and c rement systems, lysis techniques.	haracteristic			pasic configuration and alysis of measurement systems.	
		6th	Mechanic Study me gears, ar	echanical	expánsion princip	oles (screws,			hanical extension principles and lever).	

	7th S	lechanical sensors (2) tudy the application of elastic defo ensors and the measurement of vi ne seismic system.	rmation to bration using	Understand the a to sensors and th using the seismic	pplication of elastic deformation e measurement of vibration system.	
[lechanical sensors (3) tudy the gyro principle and its app	lication.	Understand the g	yro principle and its application.	
	9th p	lectric and electronic sensors (1) tudy the application of impedance articular the principle and applicationsistance line strain gauges that hange of applications.	ion of	lchanges, in partic	pplication of impedance sular the principle and application strain gauges that have of applications.	
	10th S	lectric and electronic sensors (2) tudy the application of impedance changes in capacitance and electro aduction).	changes omagnetic	Understand the a (changes in capacinduction).	pplication of impedance changes citance and electromagnetic	
	11th S	lectric and electronic sensors (3) tudy the application of piezoelectri ffect to sensors.	c and Seebeck	Understand the a Seebeck effect to	pplication of piezoelectric and sensors.	
2nd Quarter	12th S	luid type sensor tudy fluid volume measurement u rinciple and the principle of an air	sing the fluid micrometer.	Understand the fl the fluid principle micrometer.	uid volume measurement using and the principle of an air	
	13th in	ptical sensors tudy the principles and application sterference and Moiré methods. St neasurement improved accuracy a nrough the accuracy of optical sens	udy nd its factors	interference and measurement im	les and applications of the optical Moiré methods. Understand proved accuracy and its factors racy of optical sensors.	
		other methods tudy sensors using wave phenome	ena.	Understand senso	ors using wave phenomena.	
	15th S	ummary tudy a measurement system's cas onclusion for the total 14 weeks.	e study as a		asurement system's case study or the total 14 weeks.	
	16th R	eport assignment				
Evaluation Metho	od and We	eight (%)				
		Understanding and efforts the lecture	Report		Total	
Subtotal		60	40		100	
Basic Proficiency		0 0			0	
Specialized Proficience	Су	60	40	100		
Cross Area Proficienc	СУ	0	0		0	

Δ	Akashi College ourse Information ourse Code 5018		Year	Year 2023		Course Title	Random Signal Analysis		
Course	Informa	tion							
Course Co	ode	5018			Course Categor	y Specia	lized / Elective		
Class For	mat	Lecture			Credits	Acade	mic Credit: 2		
Departme	ent	Mechanica Engineerir	ll and Electronic ng	System	Student Grade	Adv. 1	st		
Term		Second Se	emester		Classes per We	ek 2			
Textbook	and/or Materials								
Instructo		INOUE Ka	zunari						
	Objectiv								
(1) Can e (2) Can c	explain bas	ic issues and Jeues using p	arameters such	as average arriva	al and average se	ervice in relati	and probability theory on to queuing theory. n relation to reliability analysis.		
Rubric									
			Ideal Level		Standard Level		Unacceptable Level		
Achievem	nent 1		Can fully explaissues and calcusing the basic	culate probability	Can explain the and calculate thusing basic rule	ne probability	Cannot explain the basics issues and calculate the probability using basic rules.		
Achievem	nent 2			late queues using ch as average	Can calculate q parameters suc arrival and ave	ueues using th as average	Cannot calculate queues using parameters.		
Achievem	nent 3		Fully understar calculate the fa expectancy, ar	nd how to ailure rate, life	Understand hov failure rate, life reliability of ser redundant syst	w to calculate expectancy, ies-parallel ar	and calculate the failure rate, life		
Assigne	ed Depar	tment Obj	ectives						
Teachin	ng Metho	od							
Outline		to the fast	cumbersome and est possible solu lata cases.	d large amounts o ution. This course	of data requires s will be held in le	statistical thinlecture and exe	king. Statistical analysis of data leads ercise formats while introducing		
				1 to 15, classes will be held in lecture and exercise formats. Assignment exercises will be base on set in the Course Objectives and Aims.					
Style		From wee	ks 1 to 15, class	ses will be held in	lecture and exer	cise formats.	Assignment exercises will be based		
<u>, </u>		on each ite This cours guarantee assignmer	em set in the Co e's content will d in classes and nt reports.	ourse Objectives a amount to 90 hou	nd Aims. Irs of study in to -study time requ	tal. These hou iired for pre-s	urs include the learning time tudy / review, and completing		
Notice	teristics (on each ite This cours guarantee assignmer Students v	em set in the Co e's content will d in classes and nt reports.	ourse Objectives a amount to 90 hou the standard self more of classes v	nd Aims. Irs of study in to -study time requ	tal. These hou iired for pre-s	urs include the learning time tudy / review, and completing		
Notice Charact	ceristics of the Learning	on each ite This cours guarantee assignmer Students v	em set in the Co e's content will d in classes and nt reports. who miss 1/3 or	ourse Objectives a amount to 90 hou the standard self more of classes v arning	nd Aims. Irs of study in to -study time requ	tal. These hou iired for pre-s e for evaluatio	urs include the learning time tudy / review, and completing on.		
Notice Charact Active	e Learning	on each ite This cours guarantee assignmer Students v	em set in the Co e's content will d in classes and nt reports. who miss 1/3 or Division in Le	ourse Objectives a amount to 90 hou the standard self more of classes v arning	nd Aims. ors of study in to study time requivill not be eligible	tal. These hou iired for pre-s e for evaluatio	urs include the learning time tudy / review, and completing on.		
Notice Charact Active	e Learning	on each ite This cours guarantee assignmer Students v of Class / [em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le	ourse Objectives a amount to 90 hou the standard self more of classes v arning	nd Aims. ors of study in to study time requivill not be eligible	tal. These hou lired for pre-s e for evaluation o Remote Clas	urs include the learning time tudy / review, and completing on.		
Notice Charact Active	e Learning	on each ite This cours guarantee assignmer Students v of Class / [em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le Aided by IC heme xplain the guida	amount to 90 hou the standard self more of classes varning	nd Aims. Irs of study in to -study time requivill not be eligible Applicable to	tal. These houired for pre-se for evaluation Remote Classification Goals Understand t	irs include the learning time tudy / review, and completing on. Instructor Professionally Experienced he guidance, what is covered in this		
Notice Charact Active	e Learning	on each ite This cours guarantee assignmer Students v of Class / [em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le Aided by IC Aided by IC heme xplain the guidaourse, and evalue	purse Objectives a amount to 90 hou the standard self more of classes varning T	nd Aims. Irs of study in to -study time requivill not be eligible Applicable to	tal. These hou ired for pre-s e for evaluation o Remote Class Goals Understand toourse, and e	irs include the learning time tudy / review, and completing on. Instructor Professionally Experienced The guidance, what is covered in this evaluation method.		
Notice Charact Active	e Learning	on each ite This cours guarantee assignmer Students v of Class / [1st	em set in the Coe's content will d in classes and treports. who miss 1/3 or Division in Le Aided by IC Aided by IC heme xplain the guida ourse, and evaluation the guida ourse, an	amount to 90 hou the standard self more of classes varning T Ince, what is coveration method. tical handling of elendence and dependence, independer	nd Aims. Irs of study in to -study time requivill not be eligible Applicable to red in this vents and endency, and	Goals Understand t course, and e probability. Understand t probability. Understand t probability. Understand t brobability. Understand t	Instructor Professionally Experienced The guidance, what is covered in this evaluation method. The statistical handling of events and idependence and dependence, winding events, independence,		
Notice Charact Active	e Learning	on each ite This cours guarantee assignmer Students v of Class / [1st	em set in the Coe's content will d in classes and treports. who miss 1/3 or Division in Le Aided by IC	amount to 90 hou the standard self more of classes varning T nce, what is coveration method. tical handling of events, independence and dependence and deviation nece and deviation amount to 90 hours of the self-self-self-self-self-self-self-self-	nd Aims. Irs of study in to- study time requivill not be eligible Applicable to red in this vents and endency, and ance, conditional , and Z-	Goals Understand t probability, Understand b conditional pi	Instructor Professionally Experienced The guidance, what is covered in this evaluation method. The statistical handling of events and independence and dependence, robability, and Bayes' theorem. The straince and deviation, and Z-		
Notice Charact Active	Plan 3rd	on each ite This cours guarantee assignmer Students v of Class / [1st	em set in the Coe's content will d in classes and treports. who miss 1/3 or Division in Le Aided by IC	amount to 90 hou the standard self more of classes varning T nce, what is coveration method. tical handling of events, independence and dependence and deviation ince and deviation in	nd Aims. Irs of study in to -study time requivill not be eligible Applicable to red in this vents and endency, and ince, conditional , and Z-ed data.	Goals Understand t probability, Understand b conditional propertion as Can understand value of the conversion of the conversio	Instructor Professionally Experienced The guidance, what is covered in this evaluation method. The statistical handling of events and independence and dependence, robability, and Bayes' theorem. The statistical deviation, and Z-stindicators of scattered data. The statistical deviation and Z-stindicators of scattered data. The statistical deviation and Z-stindicators of scattered data.		
Notice Charact Active	Plan	on each ite This cours guarantee assignmer Students v of Class / [1st	em set in the Coe's content will d in classes and treports. who miss 1/3 or Division in Le Aided by IC Aided by IC Aided by IC Aided by IC heme xplain the guidators, and evalution the statistic robability, indeprobability, indeprobability, and Enderstand variation as independent of the content of the c	amount to 90 hou the standard self more of classes varning T Ince, what is coveration method. It is and dependence and dependence and dependence and deviation ince and deviation.	nd Aims. Irs of study in to -study time requivill not be eligible Applicable to red in this vents and endency, and ince, conditional , and Z-ed data.	Goals Understand t probability, Understand t conditional properties of the conversion as Can understa about orthog.	Instructor Professionally Experienced The guidance, what is covered in this evaluation method. The statistical handling of events and independence and dependency, and inding events, independence, robability, and Bayes' theorem. The statistical deviation, and Z-statistical deviation.		
Notice Charact Active Course	Plan 3rd	on each ite This cours guarantee assignmer Students voor Class / E In the course of C	em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le Aided by IC	nurse Objectives a amount to 90 hou the standard self more of classes warning. The more of classes warning. The number of classes warning. The number of classes warning in the content of classes warning. The number of classes warning in the content of classes warning. The number of classes warning in the content of classes warning in the content of classes warning in the content of classes warning in the classes warning warning in the classes warning warning in the classes warning in the classes warning warning in the classes warning warn	nd Aims. Irs of study in tostudy time requivill not be eligible The Applicable to the study and	Goals Understand t course, and e conversion as Can understand bunderstand about orthog	Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced In Experi		
Notice Charact Active Course	Plan 3rd	on each ite This cours guarantee assignmer Students voor Class / E In the course of C	em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le Aided by IC	nurse Objectives a amount to 90 hou the standard self more of classes warning. The more of classes warning. The number of classes warning. The number of classes warning in the content of classes warning. The number of classes warning in the content of classes warning. The number of classes warning in the content of classes warning in the content of classes warning in the content of classes warning in the classes warning warning in the classes warning warning in the classes warning in the classes warning warning in the classes warning warn	nd Aims. Irs of study in to- study time requivill not be eligible The Applicable to the standard and and Zero data. Indicable to the standard and about the standard average	Goals Understand t conversion as Can understand bunderstand average methunderstand average methunderstand submit within understand average methunderstand submit within understand submit submi	Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced In Experienced In Experienced Instructor Professionally Experienced In Experien		
Notice Charact Active Course	Plan 3rd	on each ite This cours guarantee assignmer Students v of Class / [Interpretation of the course of the course and the course of the course Interpretation	em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le Aided by IC	amount to 90 hou the standard self more of classes varning T nce, what is coveration method. tical handling of elendence and dependence and dependence and deviation icators of scattered ganize 2D data and correlation. ss time culating using mose reduction.	nd Aims. Irs of study in tostudy time requivill not be eligible The Applicable to the study and	Goals Understand t conversion as Can understand bunderstand about orthogous bunderstand average method	Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced In Experienced Instructor Professionally Experienced In Experienced Instructor Professionally Experienced In Experien		
Notice Charact	Plan 3rd	on each ite This cours guarantee assignmer Students voor Class / [1st E: 2nd E: 2nd Pi 3rd Ucc 4th Oi 5th E: 6th E: 7th E: 8th E: 0th E:	em set in the Coe's content will d in classes and it reports. who miss 1/3 or Division in Le Aided by IC	nce, what is cover ation method. It can handling of events, independer and deviation icators of scattered are correlation. The standard self of the cover at the cover and deviation icators of scattered are and deviation icators of scattered are correlation. The standard self of the cover and deviation icators of scattered are and deviation icators of scattered are correlation. The standard self of the cover are and deviation icators of scattered are correlation. The standard self of the cover are and correlation. The standard self of the cover are are all correlation. The standard self of the cover are are all correlation. The standard self of the cover are are all cover and self of the cover are all cover are al	nd Aims. Irs of study in tostudy time requivill not be eligible The Applicable to the study and	Goals Understand t course, and e conditional probability. Understand beconditional proposed for about orthog. Exercise 1 Submit within Understand a average methores understand a conditional probability. Understand beconditional probability. Understand a conversion as Can understand about orthog. Exercise 1 Submit within Understand a average methores understand a testing. Exercise 2	Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced In Experi		
Notice Charact Active Course	Plan 3rd	on each ite This cours guarantee assignmer Students voor Class / E Interpretation of Class / E Interp	em set in the Coe's content will d in classes and treports. who miss 1/3 or Division in Le Aided by IC Ai	nce, what is cover ation method. Transce, what is cover ation method. Tical handling of event ation and deviation icators of scattered and deviation. Tical method. Tical handling of event ation and deviation icators of scattered at a deviation. Tical methods are a series at a correlation. Tical methods are a series at a correlation. Tical methods are a series at a series at a correlation. Tical methods are a series at a ser	nd Aims. Irs of study in to- study time requivill not be eligible The Applicable to the study and the study and the study are study time requivill not be eligible The Applicable to the study and the study and the study and the study are study	Goals Understand t conversion as Can understand bout orthog Exercise 1 Submit within Understand T testing. Exercise 2 Submit within Understand t testing. Exercise 1 Submit within Understand t testing.	Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced Instructor Professionally Experienced In guidance, what is covered in this evaluation method. In estatistical handling of events and dependence and dependency, and inding events, independence, robability, and Bayes' theorem. In ariance and deviation, and Z-sindicators of scattered data. In how to organize 2D data and conality and correlation. In class time In c		

	12th	Exercise 3 Submit within clas	ss time		Exercise 3 Submit within cla	ss time		
	13th	Program developn notebook Explain data analy DataFrame creation	rsis using pandas	5 , ,	Program develop notebook Understand prog and DataFrame of	ram data analysis	s using pandas.	
	14th Explain visualization with Matplotlib and various graph creation.					llization with Mat eation.	plotlib and	
	15th	Exercise 4 Submit within clas	s time		Exercise 4 Submit within class time			
	16th	No final exam		No final exam				
Evaluation M	lethod and \	Weight (%)						
	Exercise						Total	
Subtotal	100	0	0	0	0	0	100	
Basic Proficiency	ncy 0 0 0 0		0	0 0 0		0		
Specialized Proficiency			0	0 0 100		100		
Cross Area Proficiency	0	0	0	0	0 0 0			

А	.kashi Co	ollege	Year	2023		Cours		Advanced Electromagnetics		
Course	Informa	tion	1			1 11010				
Course Co		5019 Course Category Specialized / Elective								
Class Forr	mat	Lecture			Credits	Aca	demic	Credit: 2		
Departme	ent	Mechani Enginee	cal and Electroni	c System	Student Grade	Adv	. 1st			
Term			Semester		Classes per We	Veek 2				
Textbook										
Teaching Instructor										
	Objectiv	es								
Evaluatior fields duri Evaluatior Evaluatior	n item (2) Ing polariz n item (3)	Understand ation. Can formu	d the nature of d late laws and pro		solve problems r and magnetic fiel	elated to th Id phenome	ie qua ena an	pplied problems. Intitative evaluation of electric ad solve applied problems.		
Rubric			1		1			T.,		
			Ideal Level		Standard Level			Unacceptable Level		
Achievem	ent 1		Can formulate problems of e phenomena a problems.	le laws and lectrostatic field nd solve applied	Can formulate problems of ele phenomena an problems.	ectrostatic f	ield	Cannot formulate laws and problems of electrostatic field phenomena and solve problems.		
Achievem	ent 2		Understand the dielectrics and problems relaquantitative electric fields polarization.	d can solve applied ted to the evaluation of	Understand the dielectrics and problems relate quantitative evelectric fields dipolarization.	can solve ed to the aluation of		Do not understand the nature of dielectric materials and cannot solve problems related to the quantitative evaluation of electric fields during polarization.		
Achievem	ent 3		Can formulate problems of c magnetic field solve applied	urrent and I phenomena and	Can formulate problems of cu magnetic field solve problems	irrent and phenomena	a and	Cannot formulate laws and problems of current and magnetic field phenomena and solve problems.		
			Can derive Ma electromagne	rive Maxwell's magnetic equations and pplied problems. Can derive Maxwellectromagnetic electromagnetic solve problems.			and	Cannot derive Maxwell's electromagnetic equations and solve problems.		
Assigne	d Depar	tment Ob	ojectives							
Teachin	g Metho	d								
Outline		Departm provide (related for the A electrom	nent and aims to university-level l to peripheral ba Advance Courses nagnetics at a un	further enhance are essons, however so sic academic ability , it is desirable to n	nd develop the come parts were retending the comment of the contraction of the contractio	content. Election either omitted by relation demic ability. Therefore.	ctrom ted du xing t v for l	d Computer Engineering agnetics I and II also largely ue to academic constraints their stricter handling. However basic subjects like ne course aims to further raise the		
Style		The evaluation for these problem	lation will be based 100% on periodic exam scores. The pass mark is a score of $60\ \text{or}$ Handouts will have content on electromagnetic theory, formulation, and specific comp.					is a score of 60 or more in total n, and specific computational		
Notice		guarante assignm at our se	eed in classes an ent reports. It is chool's Electrical	se's content will amount to 90 hours of study in to d in classes and the standard self-study time req nt reports. It is recommend that students have st ool's Electrical and Computer Engineering Depart who miss 1/3 or more of classes will not be eligib			e-stuc omag to tak	ly / review, and completing netics I and II (in years 3 and 4) ing this course.		
Charact	eristics (of Class /	Division in L	earning						
☐ Active	Learning		☐ Aided by I	СТ	☑ Applicable t	o Remote C	Class	☐ Instructor Professionally Experienced		
								Experienced		
Course	Plan									
			Theme			Goals				
1st		and electric pow phenomena. De potential of an e electric field as a	ds in a vacuum e virtual concepts of er lines as fields of fine the electric pot electric field, and co an electric potentia calculations in this	electrical cential as ensider the gradient. Use	of electric fields electrical and electric pow phenomena. Car potential of an egradient. Use		virtual concepts of electric fields ver lines as fields of electrical n define the electric potential as electric field, and consider the an electric potential gradient.			
2nd Semeste r	3rd Quarter	2nd	be used when co	theorem, which is a alculating electric find physics and applications	elds, in terms cation to	likely to be terms of its	e used s mea	uss's theorem", which is most I when calculating electric fields, in aning in physics and application to d solve example problems.		
3rd		Examine the div and vectors in b terms by introdu explain example equations, which	alculations, and introduce example problems. applace's and Poisson's equations xamine the divergence of electric power lines and vectors in both physical and mathematical erms by introducing divergence (div). Also, xplain example uses for Laplace's and Poisson's quations, which are the most versatile and well-known equations for describing electrostatic				e divergence of electric power s in both physical and arms by introducing divergence rstand how to use Laplace's and ons, which are the most versatile equations for describing ds.			

	4th	Capacitance Outline the potential and capacity factors, and the energy of conductive systems, in regards to a charged conducting system. Learn more about the two most popular conducting systems, namely capacitance, including examples of actual calculations.	Understand the potential and capacity factors, and the energy of conductive systems, in regards to a charged conducting system. Understand the two most popular conducting systems, namely capacitance, including examples of actual calculations.
	5th	Dielectric materials (polarization) In many cases, capacitors have insulators (dielectrics) rather than vacuums (air). Learn about various materials' dielectric properties by introducing the concept of flux density in order to understand the physical phenomena of dielectric materials in electric fields.	In many cases, capacitors have insulators (dielectrics) rather than vacuums (air). Can explain various materials' dielectric properties by introducing the concept of flux density in order to understand the physical phenomena of dielectric materials in electric fields.
	6th	Electric fields in dielectric materials Solve example problems and explain the handling of electric fields in dielectric materials, in particular, the interface conditions for dielectric devices, electric power line refraction, the energy density of electric fields, and the forces acting on dielectric materials (the virtual displacement method).	Can solve example problems and explain the handling of electric fields in dielectric materials, in particular, the interface conditions for dielectric devices, electric power line refraction, the energy density of electric fields, and the forces acting on dielectric materials (the virtual displacement method).
	7th	Electric field imaging When finding electric fields in vacuums and dielectrics, while it is generally necessary to solve Laplace's and Poisson's equations, in some special boundary conditions, one can use a sophisticated and simple "imaging" method that has been known for many years. Explain this "imaging" method.	When finding electric fields in vacuums and dielectrics, while it is generally necessary to solve Laplace's and Poisson's equations, in some special boundary conditions, one can use a sophisticated and simple "imaging" method that has been known for many years. Can explain this "imaging" method.
	8th	Current fields and electrostatic fields When a current is distributed through a continuous conductor there are times when problems may be easily solved by using similarities with the electrostatic field. Also, electromagnetically express Kirchhoff's Law, which often appears in circuits.	When a current is distributed through a continuous conductor there are times when problems may be easily solved by using similarities with the electrostatic field. Also, electromagnetically express Kirchhoff's Law, which often appears in circuits.
	9th	Magnetic field Explain in detail the process that starts with the Biot–Savart law and derives Ampère's circuital integral law, from the fundamental point of view that currents are the sources of magnetic fields.	Can explain the process that starts with the Biot–Savart law and derives Ampère's circuital integral law, from the fundamental point of view that currents are the sources of magnetic fields.
	10th	Calculation of magnetic field distribution In describing a magnetic field that has a different starting point from that of an electric field, it becomes necessary to have a mathematical expression that differs from that of an electric field. In magnetic fields, the vector rotation (rot) is important. Explain vector potential, forces acting on electric currents, etc.	In describing a magnetic field that has a different starting point from that of an electric field, it becomes necessary to have a mathematical expression that differs from that of an electric field. Can explain vector rotation (rot) in magnetic fields, vector potential, forces acting on electric currents, etc.
	11th	Magnetic substances Most actual electric equipment that utilize magnetic fields use magnetic substances (ferromagnetic substances). Explain magnetic substances that are difficult to handle theoretically, including the correspondence between magnetic and electrostatic fields (BD- and HE-compatible), magnetic circuits, and the energy density of magnetic fields.	Most actual electric equipment that utilize magnetic fields use magnetic substances (ferromagnetic substances). Can explain magnetic substances that are difficult to handle theoretically, including the correspondence between magnetic and electrostatic fields (BD-and HE-compatible), magnetic circuits, and the energy density of magnetic fields.
4th Quarter	12th	Electromagnetic induction phenomenon Electromagnetic induction phenomenon is the principle for many kinds of equipment such as generators. However, electromotive force is generated by both the temporal variation of the magnetic flux itself and the relative motion of the conductor to it. Treat this phenomenon mathematically and derive Maxwell's electromagnetic equations.	Electromagnetic induction phenomenon is the principle of many kinds of equipment such as generators. However, electromotive force is generated by both the temporal variation of the magnetic flux itself and the relative motion of the conductor to it. Can treat this phenomenon mathematically and derive Maxwell's electromagnetic equations.
	13th	Inductance Inductance often appears as a representative element in electrical circuits. Learn about self- inductance and mutual inductance from the perspective of magnetic field energy, and explain the wave propagation speed of the reciprocating line as a calculation example.	Inductance often appears as a representative element in electrical circuits. Learn about self-inductance and mutual inductance from the perspective of magnetic field energy, and can calculate the wave propagation speed of the reciprocating line using calculation examples.
	14th	Maxwell's electromagnetic equations Explain Maxwell's electromagnetic equations in detail, which have critical meaning for those who learn electrical and electronic engineering as well as physics. In addition to deriving equations, do reverse derivations for the basic laws of electric field magnetic fields that have been studied.	Can explain Maxwell's electromagnetic equations in detail, which have critical meaning for those who learn electrical and electronic engineering as well as physics. In addition to deriving equations, can do reverse derivations for the basic laws of electric field magnetic fields that have been studied.
	15th	Solutions for Maxwell's electromagnetic equations and electromagnetic waves Solve Maxwell's electromagnetic equations as simultaneous differential equations and calculate electromagnetic waves' presence and velocity as a result of doing this. Also explain the basic characteristics of electromagnetic waves.	Can solve Maxwell's electromagnetic equations as simultaneous differential equations and calculate electromagnetic waves' presence and velocity as a result of doing this. Can also explain the basic characteristics of electromagnetic waves.

	16th	Final exam									
Evaluation I	Evaluation Method and Weight (%)										
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total				
Subtotal	100	0	0	0	0	0	100				
Basic Proficiency	0	0	0	0	0	0	0				
Specialized Proficiency	100	0	0	0	0	0	100				
Cross Area Proficiency	0	0	0	0	0	0	0				

А	kashi Cc	llege	Y	Year 2023			Cour	rse A	Advanced Strength of Materials	
Course	Informat	tion								
Course Co	ode	5020				Course Categor	ry Sp	ecialize	d / Elective	
Class Forr	mat	Lecture				Credits	Aca	ademic	Credit: 2	
Departme	ent	Mechanic Engineeri		ectronic	System	Student Grade		v. 1st		
Term		Second S	emester			Classes per We	eek 2			
Textbook Teaching										
Instructor		MORISHI	TA Tomo	hiro						
1) System them to b 2) Unders dimensior 3) Unders various pr 4) Unders intensity (tasic problemation by the base of the base	nderstand thems. basic issues ns. advanced iss strength of nechanical t	related to sues relat material pehaviors	o flat pla ed to str s. related	te bending proble	ms, and can cor lastic moduli, ar	mpare and	examir them t	al stress state and can apply ne one-dimensional and two- three-dimensionally examine yze them, and can apply them to	
Rubric			_			1				
			Ideal L	evel		Standard Level			Unacceptable Level	
(1) Funda multi-axia		uations for	fundan multi-a	nental é	understand the quations for ss and can apply lems.	Can apply various multiaxial stress problems.	ous formul ss to basic	ae for	Cannot apply various formulae for multiaxial stress to basic problems.	
(2) Bendii	ng of plate	!	related probler	to flat p	e basics issues blate bending can explain the veen beams.	Can calculate s deflection of bausing formula r plate bending p	asic problerelated to f	ms by flat	Cannot calculate stress and deflection of basic problems related to flat plate bending.	
(3) Stress	and strair	า	related elastic three-o	to stres moduli, dimension probler	e advanced issues is, strain, and and use them to nally examine ns of strength of	Understand the advanced issues related to stress, strain, and elastic moduli.			Do not understand the advanced issues related to stress, strain, and elastic moduli and remain limited to only a one-dimensional understanding.	
(4) Elasto	plastic pro	blem	behavious elastop	ors relatolasticity analyze them to	e mechanical ed to the of materials and them, and can intensity	Understand the behaviors relat elastoplasticity how to analyze	ed to the of materia		Do not understand the mechanical phenomena related to elastoplasticity of materials.	
	al thinking e commun		strengt	th of ma	rious problems of terials with n logical thinking.	Can explain bar formulae to oth problems of str materials.	ners on väi	Cannot explain to others the formation of various formulae and examples of their use on various problems of strength of materials.		
Assigne	d Denari	tment Ob	iectives	:						
	•		jectives	•						
Outline	g Metho	The aim i independ on the ye students study.	ently and ear 3's St will learn	d continu rength c i more a	ously learn relate f Materials I, year dvanced issues ar	d matters, think d's Strength of nd prepare for Fi	c logically, Materials racture Me	and hav II, and chanics	mechanical components, ve technical discussions. Based year 5's Strength of Materials III, in the second year of graduate	
Style				_	lecture style with					
Notice		guarante	ed in clas ent report	sses and s. Stude	amount to 90 hou the standard stud ents should try to more of classes v	dy time required think and under	l for pre-st stand for t	udy / re hemsel	nclude the learning time eview, and completing ves.	
Charact	eristics o	of Class /				- 5.2.				
☐ Active				ed by IC		☑ Applicable to	o Remote	Class	☐ Instructor Professionally Experienced	
Course	Plan									
		1	Гһете				Goals			
		1st F	eview of multiaxial stress (1)			Can show a simple applic		le application example of stress- cement-strain relations in the state.		
2nd Semeste Quarter 2nd			eview of multiaxial stress (2)			Can use equilibrium equations in a re coordinate system. Can derive Navie equations. Can use the basic formula and spherical coordinate systems. Ca various formulae from a rectangular system to polar coordinate.		n. Can derive Navier-Stokes se the basic formula in cylindrical ordinate systems. Can transform from a rectangular coordinate		
		3rd F	lat plate	bending	(1): Beams and	flat plates	Can drive similaritie plates.	the for s and e	mulas for beam. Can explain the xtensibility of beams and flat	

		1			1		
		4th	Flat plate bending (2): Basic formu rectangular plates	la for	bending rectangu	andling of unknown functions in lar plates and can explain the the basic formula.	
		5th	Flat plate bending (3): Stress and or rectangular plates	deflection of		sic formula for rectangular plates s, and calculate stress and	
		6th	Flat plate bending (4): Axisymmetr circular plates	ic bending of	that is expressed	sic formula for a circular plate in polar coordinates to a basic culate stress and deflection.	
		7th	Review of plane stress and plane st	rain	formulae for streamd principal and also explain the conformulae for strain	oordinate transformation sses in the plane stress states maximum shear stresses. Can oordinate transformation ns in plane strain states and kimum shear strains.	
		8th	Stress and strain (1): Direction cos coordinate transformations	ines and	Can use direction coordinate transf	cosines to describe stress ormations.	
		9th	Stress and strain (2): Stress		maximum shear	alculation of principal and stresses in a three-dimensional explain stress invariants.	
		10th	Stress and strain (3): Strain, strain multiaxial stress, and yield criterion	energy at	formula for strain deformation. Can	oordinate transformation in three-dimensional calculate strain energy in a il stress state, and apply it to	
		11th	Stress and strain (4): Stress-strain	equation	Understand gene can explain the e elastic bodies.	ralized stress-strain relations and lastic modulus for anisotropic	
	4th	12th	Stress and strain (5): Index notation	n	Can express the formulas using index notation.		
	Quarter	13th	Elastoplastic problems (1): Materia torsion and bending of elastic-perfebodies	l models and ectly plastic	Can explain the relationship between load and deformation in the torsion and bending of elastic-perfectly plastic bodies.		
		14th	Elastoplastic problems (2): Limit lorresidual stress caused by plastic de	ads and formation	the limit loads in	mit loads in combination rods, beams, and plastic joints. Can tress caused by plastic	
		15th	Elastoplastic problems (3): Spheric and axisymmetric problems	al symmetry	stress of elastic-p	ield start condition and residual erfectly plastic spherical shells, ating circular plates.	
		16th	Final exam				
Evaluati	ion Meth	nod and \	Weight (%)				
	evaluation riction and vi		Exercise Exercise			Total	
Subtotal			80	20		100	
Basic Prof	ficiency		0	0		0	
Specialize	d Proficier	ncy	80	15		95	
Cross Are	a Proficier	ncy	0	5		5	

А	Akashi College		ege	Year	2023		Cours Title		Production Sys	stems	
Course	Inforn	natio	on								
Course Co	ode		5021			Course Categor			ed / Elective		
Class Forr	mat		Lecture			Credits	Academic Credit: 2				
Departme	ent		Mechanica Engineerin	l and Electronic g	System	Student Grade		. 1st			
Term			First Seme	ster		Classes per Wee	ek 2				
Textbook Teaching	and/or Materia	ıls									
Instructor			OHMORI S	higetoshi							
Course	Objec	tives	5								
Rubric											
				Ideal Level		Standard Level			Unacceptable Le	evel	
Achievem	ent 1										
Achievem											
Achievem											
1			nent Obje	ectives							
Teachin	<u>ig Met</u>	<u>hod</u>									
Outline											
Style											
Notice											
Charact	eristic	s of	Class / D	ivision in Le	arning	1			1		
□ Active	Learnii	ng		☐ Aided by ICT ☐ Applica			ble to Remote Class			rofessionally	
Course	Plan										
			Th	neme			Goals				
		1	st								
		2	nd								
		3	rd								
	1st		th								
	Quarte	<u> </u>	th								
			th								
1st		_	th								
Semeste		-	th th			+					
r			0th								
			1th								
	2nd		2th								
	Quarte		3th								
			4th								
		1	5th								
		1	6th								
Evaluati	ion Me	etho	d and We	eight (%)							
		Exan	nination	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				0							

Д	kashi Co	ollege		Year	2023		C	Course Title	Energy Technology I
Course	Informa	tion	ı		1		1		1
Course Co		5022				Course Catego	ry	Specializ	ed / Elective
Class For	mat	Lecture				Credits		Academi	c Credit: 2
Departme	ent	Mechani Enginee		d Electronic	System	Student Grade		Adv. 1st	
Term		Second		ster		Classes per We	eek	2	
Textbook Teaching								•	
Instructo	ſ	FUJIWA	RA Sei	iji					
The goal (1) Under (2) Under (3) Under (4) Set a	stand the stand the stand the problem a	le to under basic equa discretizati HSMAC me nd perform	ition of ion me ethod. n simu	f heat fluid ethod of bas lations on o	analysis. iic equations.		analys	is of heat	fluids in energy engineering.
Rubric									
				eal Level		Standard Level			Unacceptable Level
Achievem	ent 1		the		nd and can deriv tions for heat	Understand the for heat fluid a	e basic nalysis	equations	Do not understand the basic equations for heat fluid analysis.
Achievem	ent 2		Une	derstand the	e discretization ic equations and m on its own.	Understand the method of basi			Do not understand the discretization method of basic equations.
Achievem	ent 3			d can progra	e HSMAC metho am it on one's	Understand the method.	e HSM/	AC .	Do not understand the HSMAC method.
			sim		lem, perform nd analyze data	Can set a prob simple simulati own.			Cannot set a problem and perform simple simulations on one's own.
			to o	n clearly pro one's own p an easy-to- esentation.	Can present th one's own prob presentation.	e ansv olem in	vers to i a	Cannot present the answers one's own problem in a presentation.	
Assigne	d Depar	tment Ol	ojecti	ves					
Teachin	g Metho	d							
Outline		energy t major et fluid are course,	throug ffect o widel studer	h generator n performa y conducted nts will learr	s. In addition, h nce in fuel cells, I with the aim of	ow the movemen etc. In developing reducing develop AC method, which	t of wa energ ment	iter and el gy equipm costs and	, etc. and converted to electrical lectrolytes is controlled has a ent, numerical analyses of heat obtaining detailed data. In this lethods to numerically analyze
Style		The first	half c	of the class	is made up of le	•			d half, students will conduct
Notice		guarante assignm thermod students conducte	eed in ent re dynam s need ed in E	classes and ports. While ics, thoroug to have a r English.	I the standard see it is desirable for the stand	elf-study time requestrations requestrates to have the second will help the second will help the second will help the second requestrates the second requestrates are second requestrates.	uired for ve a ba p stud e. In a	or pre-stu sic knowle ents unde ddition, th	s include the learning time dy / review, and completing edge of fluid dynamics and irstand the content. Furthermore, iis course will fundamentally be
Charact	eristics o	of Class /	[/] Divi	sion in Le	arning				
☐ Active	Learning			Aided by I	T	☐ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced
Course	Dlan								
Course	riali		Them	ie.			Goals		
	Theme 1st Basic equations for heat fluid simulatio						Under	stand the	equations of the fluid continuum
		1st	Dasic	equations f	oi Heat Hula SIM	uiatiOii (1)	and th	ne derivat	ion of equations of motion.
	2nd			equations f	ulation (2)	motio	n and equ	derivation of fluid equations of lations of energy.	
2nd Semeste	3rd	Basic	equations f	or heat fluid sim	ulation (3)	metho	od of the E	e energy equation of fluid to one led fluid. Also, understand the Boussinesq approximation as a loyancy terms.	
1	Quarter	4th	About	nondimen	sionalizing basic	equations	nondi make	mensional it dimens	
		5th	Discre	etization me	thod of basic eq	uations (1)	make it dimensionless. Understand how to discretize differential equations that are basic equations. Also, understand the solution's accuracy and the stability conditions.		

		6th	Discretization me	thod of basic equ	uations (2)	equations that				
		7th	MAC method, and	I SMAC method		Can derive Po understand th are two of the fluid.	Can derive Poisson's equation on pressure, and understand the MAC and SMAC methods, which are two of the explicit methods for incompressible fluid.			
			HSMAC method					nod to solve the ire using Newton's		
		9th	Explanation of ass	signment 1			e of a flow in a	using free software cavity containing		
		10th	Exercise			Can calculate the analysis re		fer coefficient from		
		11th	Exercise				Understand the relationship between mesh refinement and analysis accuracy.			
	4th Quarter	12th	Explanation of ass	signment 2		own, and can	e engineering discuss the proset an appropr	problems on one's oblems proposed with liate problem.		
		13th	Exercise				Can program and run simulations for the problem on one's own.			
		14th	Exercise			Can program and run simulations for the problem on one's own.				
		15th	Presentation			Can present simulation results for the problem in English.				
		16th	No final exam							
Evaluati	ion Met	hod and	Weight (%)							
		kamination		Assignments	Behavior	Portfolio	Other	Total		
Subtotal	0		30	70	0	0	0	100		
Basic Proficienc	y 0		0	0	0	0	0	0		
Specialize Proficienc			30	70	0	0	0	100		
Cross Are Proficienc			0	0	0	0	0	0		

А	kashi Co	llege		Year	2023		(Course Title	Tribology
Course 1	Informat	ion			1		1		
Course Co		5023				Course Categor	ry	Specialize	ed / Elective
Class Forn	nat	Lecture				Credits		Academi	Credit: 2
Departme	nt	Engineeri	ing	nd Electronic	System	Student Grade		Adv. 1st	
Term		Second S	eme	ster		Classes per Week 2			
Textbook Teaching I									
Instructor		ABO Mas	ayos	hi					
(1) Can de method fo (2) Can es (3) Can es	r evaluatir stablish eff	erstanding ng them in a ective use o	an ap	ppropriate m ction and me	riction and wear p nanner. ethods to control f methods for desig	riction and wear	such	as lubricat	motion surfaces, and establish a ion.
Rubric									
			-	eal Level		Standard Level			Unacceptable Level
Achieveme	Achievement 1			e complex fr enomena th	n surfaces, and thod for m in an	Can deepen un the complex fri phenomena that relative motion understand how them in an app	iction at occ surfa w to e	and wear ur on ces and valuate	Cannot deepen understanding of the complex friction and wear phenomena that occur on relative motion surfaces and do not understand how to evaluate them in an appropriate manner.
Achieveme	ent 2		fric	ction and fri	effective use of ction wear as lubrication.	Understand the friction and me friction and we lubrication.	ethods	to control	Do not understand the effective use of friction and methods to control friction and wear such as lubrication.
Achieveme	ent 3		an de	d specific m	various guidelines ethods for onal parts of	Understand the guidelines and for designing frequipment.	specif	ic methods	Do not understand the various guidelines and specific methods for designing frictional parts of equipment.
Assigned	d Depart	ment Ob	ject	ives					
Teaching	g Method	d							
Outline		wear phe	nom ate m ubric	ena that occ nanner, and ation. Stude	cur on relative mo	tion surfaces—ar fective use of fri	nd to	explain how and metho	ns—i.e., the complex friction and w to evaluate them in an ods to control friction and wear fic methods for designing frictional
Style		Classes v The contrunderstant The reportant take into tribology survey or soft thin This cour Materials	will for ents and income of the service according to the service application of the service and the service application of the service and the	ocus on a lector of the report	t will be instructed re as follows: contact condition le shear strength. nologies. 5) The dand greases. 7) A stroise on the amound assumes stude	petween two obj 3) A survey and erivation of the contraction of the co	jects. sumn double earing Litera know	gress of the 2) An exer nary of var e integral per design me ture resear	c, and group work as appropriate. e class and the students' levels of cise for friction coefficients which ious types of wear. 4) A study on art of the Reynolds equation. 6) A ethods. 8) A study on hard and rch on tribology e following subjects: Strength of , and Engineering Design II
Notice		Before ta questions include th review, a Students	king dur ne lea nd co who	the course, ing the cour arning time ompleting as miss 1/3 or	se. This course's og guaranteed in class ssignment reports	content will amous ses and the star	unt to ndard	90 hours of self-study	, and be prepared to ask of study in total. These hours time required for pre-study / s presentation, or fail to submit a
Characte	eristics o	f Class /	Div	ision in Le	arning				
□ Active	Learning			Aided by IC	 T	☑ Applicable to	o Rem	note Class	☐ Instructor Professionally Experienced
Course I	Plan	1							
			Them				Goals	3	
		1st E	Expla		? e of tribology, lubr prication by oil.	ication	Learr and a	n an outline about lubric	e of tribology, lubrication methods, cation by oil.
2nd Semeste r	3rd Quarter	2nd E	Solid Expla	surface con ain the prope ture and pro	tact I erties of solid surfa operties of surface	layers in order	Learn about the nature of solid surfaces structure and properties of surface layer		
		3rd	to properly understand tribology phenomena. Solid surface contact II Explain the mechanisms for two-surface contact and true contact area wear with exercise problems.				Learn about the mechanisms for two-surface contact and true contact area wear.		

		4th	Explain Amont adhesid	n between solid sur n dry friction and lu on-Coulomb's laws on theory of frictior theory.	bricated friction, , the causes of fric	tion, for	Learn about	friction cause	s and friction theory.	
		5th	Explain the spe friction	n between solid sur n the temperature r eed characteristics properties in a vac rature on friction, a	rises of friction surf of friction and stick cuum, the effects o	c-slip, of	Learn about test friction.		cteristics and how to	
		6th	Define	on solid surfaces I and classify wear a tical handling of ead es.	and explain the ch of the importan	t	Learn about wear.	the definition	and classification of	
		7th	Explain	urface wear II In the concept of we In methods of wear.	ar maps, and discu	JSS	Learn about methods.	wear maps a	nd wear testing	
		8th	Explain	Ibrication I I the physical signif principles.	icance of fluid lubr	ication	Learn about lubrication.	the physical s	significance of fluid	
		9th	Fluid lu Explain pressu	ıbrication II ı Reynolds' fluid lub re distribution anal	prication theory and ysis of bearings.	d the	Learn about the pressure	Reynolds' flui distribution a	d lubrication theory and analysis of bearings.	
	10th	10th	Explain	ary and mixed lubri the concept of boution, and boundary ties.	undary and mixed	cating	Learn about boundary and mixed lubrication.			
		11th	Explain grease	ary and mixed lubri the types, propert and solid lubricant tion in situations w	ties, and applications that are used for	Learn about the types, properties, and applications of grease and solid lubricants.				
	4th Quarter	12th	Explain reform	e reforming technol the physical signif ing technology, its on wear improvem cts.	icance of surface method, and exan	Learn about the physical significance of surface reforming technology, its methods, and examples of friction wear improvement.				
		13th	Explain	Bearings design sxplain the basic aspects of design using journal learings as an example.				Learn about the basic aspects of bearing design using journal bearings as an example.		
		14th	Introdu techno role an	Applications of tribology in current technologies Introduce a case from the many current technologies where tribology plays an important role and explain the relationship using basic knowledge.				Learn about the current application of tribology in current technologies.		
		15th	Presen Introdu	tation uce videos or resea	rch related to tribo	ology.	Learn about	research rela	ted to tribology.	
		16th	_	ıl exam						
Evaluation	on Metl	hod and \	Neight	(%)						
		Short Tests	5	Report	Presentation	Beha	vior	Other	Total	
Subtotal		30		40	10	20		0	100	
Basic Profi		0		0	0	0		0	0	
Specialized	′	30		40	10 20			0	100	
Cross Area Proficiency		0		0	0	0		0	0	

	Akashi Co	ollege		Year	2023			Course	Advanced Electrical Circuits
	Informa							Title	
Course C		5024				Course Category	v	Specialize	ed / Elective
Class For		Lecture				Credits	1	+ '	Credit: 2
Departme	ent	Mechani Enginee		nd Electronic	System	Student Grade		Adv. 1st	
Term		Second :	Seme	ester		Classes per Wee	ek	2	
Textbook	and/or Materials	Although	n tex	tbooks are no	ot used, it is reconed as necessary.	nmended to bring	g a re	ference bo	ook on electric circuits. In addition,
Instructo		HOSOKA			ed as necessary.				
	Objectiv			7.100010111					
1) Unders 2) Can pe 3) Can se	stand the serform and u	various theo alysis and do se appropri	esign iate r	n of a number methods for a	, -	its. gning electrical ci	ircuit		ltidimensional thinking.
	ents will be	handed ou	ut for	review purp	oses at the end of	the lecture. It is	impo	rtant to do	them through self-study.
Rubric			7.	d11l		Character and I amount			I land a constability is so all
				deal Level nderstand the	o various	Standard Level			Unacceptable Level
Achievem	nent 1		th fo ca	neorems that	form the basis rcuit analysis and	Understand the theorems that for electrical circ	orm t	he basis	Do not understand the various theorems that form the basis for electrical circuit analysis.
Achievem	nent 2		de	an perform a esign various lectrical circui	complex	Can perform and design various be circuits.			Cannot perform analysis and design various basic electrical circuits.
Achievem	nent 3		lar	an select and ppropriate monalyzing and lectrical circui	use the most ethod for designing its.	Can select and u appropriate met analyzing and d electrical circuits	thod 1	for	Cannot select and use an appropriate method for analyzing and designing electrical circuits.
Assigne	ed Depar	tment Ob							
Teachir	ng Metho	od							
Outline		basis for this cour to perfor	elect rse is rm ci	trical engined to learn abo ircuit analysis	ering including ele ut the relationship 	ctronic, communi between curren	icatio t and	n, and info voltage in	e, and capacitance. It forms the ormation engineering. The aim of electrical circuits and to be able
Style		Classes and assi	are n	nainly conduc ents every w	cted by taking not eek.	es. There will be	hand	outs as ne	cessary. There will be exercises
Notice		guarante assignm This cou Electric (or have Enginee Students If studer case will	eed in the second in the secon	n classes and eports. assumes stud lits (compulson Electrical and II (selected foot to have a litsh, they can the average s	the standard self ents have taken E bry in years 1 to 4 nd Electronics Eng br year 5) taught i pasic knowledge o	-study time requi lectrical Circuits I) taught in the El ineering I (compi n the Mechanical f the contents of xxam outside of c m and final exam	ired for and lectriculsory length these lass has.	or pre-stud II, Circuit cal and Cor y in year 4 neering De e subjects. nours. The	include the learning time dy / review, and completing Theory, and Transient Analysis on mputer Engineering Department,), and Electrical and Electronics epartment in Akashi Kosen. evaluation for the exam in this grade.
Charact	teristics	of Class /	′ Div	ision in Le	arning				
☐ Active	e Learning			Aided by IC	T -	☑ Applicable to	Rem	ote Class	☐ Instructor Professionally Experienced
	DI								
Course	rian 		Tha	mo		T.	Goals		
	1	1 ct	Ther			ı	Unde	rstand how	v to analyze AC circuits using the
		1st 2nd		circuits	nd miscellaneous t	hooroms (1)	vecto Unde	r notation rstand how	and vector locus. v to analyze circuits using closed
				· · · · · · · · · · · · · · · · · · ·		1	Unde	rstand how	equations. to analyze circuits using the
	24	3rd			nd miscellaneous t	t	thėor	ems.	eciprocity, and compensation
2nd	3rd Quarter	4th		·	nd miscellaneous t				methods of circuit analysis using ton's, and Millman's theorems.
Semeste r		5th			and mutual induc	tion circuits	circui	ts.	age, currents, and power in three-
		6th		ee-phase AC	C	1	phase Unde	e AC. rstand volt	age, currents and power in
		7th		orted wave A		(distor	ted wave <i>i</i>	AC.
		8th 9th		mary of wee	ks 1 to 7				content from weeks 1 to 7.
	4th			-port circuits			Understand one-port circuits.		
	Quarter	10th	Iwo	wo-port circuits			Understand the various parameters that represent two-port circuits.		

	11th	Transient phenomena in single-en	ergy circuits	Understand the to	ransient phenomena in circuits uctance or capacitance is present.	
	12th	Transient phenomena in multiple-e	energy circuits	Understand the t	ransient phenomena in circuits tance and capacitance are	
	13th	Steady-state phenomena in distrib circuits	uted-element	Understand the b properties of tran inductance, and of lines.	pasic concepts and circuit ismission lines where resistance, capacitance are distributed along	
	14th	Transient phenomena in distribute circuits	d-element	Understand the to distributed-element	ransient phenomena in ent circuits.	
	15th	Summary of weeks 8 to 14		Understand the content from weeks 8 to 14.		
	16th	Final exam		Understand the content from weeks 1 to 7 and weeks 9 to 14.		
Evaluation Meth	od and V	Veight (%)				
		Examination	Exercise		Total	
Subtotal		70	30		100	
Basic Proficiency		0	0		0	
Specialized Proficier	псу	70	30		100	
Cross Area Proficier	су	0	0		0	

Д	kashi Co	ollege	Year	2023		Course Title	Advanced Heat Transfer	
Course	Informa	tion						
Course Co		5025			Course Categor	,	lized / Elective	
Class For	mat	Lecture			Credits	Acader	nic Credit: 2	
Departme	ent	Engineeri	al and Electronic ng	System	Student Grade	Adv. 1	st	
Term		Second Se	emester		Classes per We	ek 2		
Textbook Teaching								
Instructo		KUNIMIN	E Kanii					
Course	Objectiv	•						
(2) Can tl (3) Can tl (4) Can tl	heoreticall heoreticall heoreticall	y handle con y handle pha y handle ma	ady and unstead vective heat tra ise change heat terial transfer. it exchangers.	ly state heat cond nsfer. transfer.	uction.			
Rubric								
			Ideal Level		Standard Level		Unacceptable Level	
Achievement 1			Can theoretica and unsteady conduction suf	ally handle steady state heat fficiently.	Can theoretical and unsteady s conduction.	ly handle stea tate heat	dy Cannot theoretically handle steady and unsteady state heat conduction.	
Achievem	ent 2		Can theoretica convective hea sufficiently.	ally handle at transfer	Can theoretical convective heat		Cannot theoretically handle convective heat transfer.	
Achievem	ent 3		Can theoretica change heat to sufficiently.	illy handle phase ransfer	Can theoretical change heat tra		Cannot theoretically handle phase change heat transfer.	
				fer sufficiently.	Can theoretical	ér.	Cannot theoretically handle material transfer.	
			exchangers su	Illy handle heat Ifficiently.	Can theoretical exchangers.	ly handle heat	Cannot theoretically handle head exchangers.	
		tment Obj	jectives					
Leachin	ig Metho					<u> </u>	*. *!!	
Outline		issues tha	at the Heat Tran	sfer class in the R	egular Course dic	not.	ng. It will cover the more advanced	
Style		This cours	se is based on H	leat Transfer (yea s that students ha	r 5, elective) taug	ght in Akashi I	Kosen Mechanical Engineering	
Notice		and the single and the single architecture a	tandard self-stude te the goals, stud ns will be based who miss 1/3 ou	dy time required f dents should thord on two periodic e r more of classes v	or pre-study / re oughly pre-study xams	view, and con and review cl	arning time guaranteed in classes npleting assignment reports. ass content for each week.	
Charact	eristics	of Class /	<u>Division in Le</u>	earning	1			
☐ Active	Learning		☑ Aided by IC	T	☑ Applicable to	Remote Clas	S ☐ Instructor Professionally Experienced	
Course	Plan							
course		Т	heme			Goals		
		1st E	Basic theory			solutions, the	ne differential equations and their basic laws of heat transfer, and the neat conduction.	
		2nd S	Steady heat state	e conduction		Can understa steady heat c	nd the problems of two-dimensional onduction.	
		3rd L	Jnsteady state h	eat conduction (1	`		ne problems of a lumped heat	
	3rd Quarter	4th L	Jnsteady state h	eat conduction (2)	Understand a state heat corproblems that	pproximation solutions for unsteady nduction and the thermal conduction t accompany phase changes.	
2nd		5th F	orced convectiv	e heat transfer th	eory	Understand the convective he	ne governing equation for forced eat transfer.	
Semeste r		6th A	Approximation so leat transfer (1)	olutions for forced	convective		ne laminar heat transfer of the flow	
			Approximate solu ransfer (2)	utions for forced c		Understand thacross a plate	ne laminar heat transfer of the flow	
			lidterm exam				blems related to weeks 2 to 7.	
				ve heat transfer th			atural convective heat transfer.	
		10th P	hase change he	at transfer theory	(1)	Understand tl	ne film condensation theory.	
	4th Quarter	11th P	hase change he	at transfer theory		Understand the film boiling theory.		
	Qualitei		Naterial transfer	(1)		Understand Fick's law, diffusion coefficient, and one-dimensional diffusion phenomena.		
		13th F	leat exchangers	(1)		Understand a	n overview of heat exchangers.	

	14th	Heat exchange	rs (2)		Understand difference.	Understand logarithmic mean temperature difference.			
	15th	Heat exchangers (3)			Understand	Understand temperature efficiency ratio.			
	16th	Final exam	nal exam			problems related	to weeks 9 to 15.		
Evaluation N	1ethod and 1	Weight (%)							
	Examination						Total		
Subtotal	100	0	0	0	0	0	100		
Basic Proficiency	0	0	0	0	0	0	0		
Specialized Proficiency	100	0	0	0	0	0	100		
Cross Area Proficiency	0	0	0	0	0	0	0		

Д	ıkashi Co	ollege	Year	2023		Course Title	Environmental Science	
Course	Informa	tion	<u> </u>				·	
Course Co	ode	5026			Course Categor	y Genera	al / Elective	
Class For	mat	Lecture			Credits	Acader	mic Credit: 2	
Departme	ent	Mechani Enginee	cal and Electronic	System	Student Grade	Adv. 2	nd	
Term		First Ser			Classes per We	ek 2		
Textbook								
Teaching Instructor		WATANA	ABE Moriyoshi,HII	RAISHI Toshihiro				
	Objectiv	•						
(1) Under to examir perspectiv (2) Exam	rstand the ne and exp ve. ine the rel	formation lain the relationship b	ationships between the environ	en life, the natural onment and people	environment, ar e, think about pr	nd environmer oblems with e	ecosystem, and acquire the ability ntal issues from a multifaceted environmental issues, and acquire	
•	to identif	y what acti	ons are needed a	s engineers and m	nembers of the g	eneral public.		
Rubric			Ideal Level		Standard Level		Unacceptable Level	
				e formation of the			·	
Achievem	Achievement 1			ment and the ge of the natural id can examine e relationships he natural and issues from a erspective.	Understand the global environm basic knowledg ecosystem, and relationships be natural environmental	nent and the e of the natur I can explain t etween life, th ment, and	al che check the control of the global environment and the basic knowledge of the natural check the control of	
		tment Ob	ojectives					
Teachin	ig Metho							
Outline		lthém. (8	3 weeks taught by ures on environm	/ Watanabe)	•		systems, and methods for preservin egional disparities. (7 weeks taught	
Style		The cou	rse is open to stu ne course, studen	g slides and videos dents from any de ts should carefully and summarize the	partment. Classe read through th	es will be taug e materials di	d as appropriate. Int as simply as possible. Before Instributed in advance to fully	
Notice		guaranto assignm The leve score fo	eed in classes and ent reports. els of achievemen	d the standard self t will be evaluated	-study time requ by faculty mem	ired for pre-st bers in the fol	ars include the learning time tudy / review, and completing llowing methods. The minimum 's evaluation will be "1" for Hiraishi	
Charact	eristics	-	Division in Le	earning				
	Learning	,	☑ Aided by IO		☑ Applicable to	Remote Clas	☐ Instructor Professionally Experienced	
Course	Plan							
Course	1011		Theme			Goals		
		1st		the global enviror on (Watanabe)	nment and the	Can explain the	he process in which the current nment was formed, and the etween pollution and health that ha ne past.	
		2nd	Development and impacts (Watanal			on the natura	he impact of development acitivities il enviromnemt.	
		3rd	Global environme	ental issues (Wata	nabe)	Can explain the issues and the scale.	he current state of environmental e measures to be taken on a global	
	1st	4th	The basics of env	vironmental ecolog	ıy (Watanabe)	and individua	he concepts, types and distributions I organism and population, and the pulation ecology.	
1st Semeste	Quarter	5th	Biodiversity and	its crisis(Watanabe	e)	Can explain the crisis it is of species.	he current state of biodiversity and facing. Can calculate diversity index	
r		6th	Ecosystem conse	ervation techniques	s (Watanabe)	restoration, a	echnical classification (conservation, ind creation) to protect the including ecosystems using concrete	
		7th	The functions an ecosystems(Wat			Can explain the agricultural, uurban ecosyst	he current state of forest , urban and auqtic ecosystems and tems.	
		8th	Ecosystem asses	sment(Watanabe)		methods.	ecosystem asses s ment using some	
	2nd Quarter	9th	Report assignme Environmental is	nt briefing sues and history		Set up and implement solutions to environmenta issues in one's life. Learn about the causes and history of modern environmental issues.		

			10th	Life and society in	the Edo period		Learn about life a		e today's	
			11th	Watch the "An Incabout it.	convenient Truth"	and think	Learn about climate change issues.			
	12th 13th		12th	Watch the "An Incabout it.	convenient Truth"	and think	Learn about climate change issues and recognize the challenges.			
			"Ancient Futures:	Learning from La	dakh"	Think about the t		roblems due to		
			14th	"Ancient Futures:	Learning from La	dakh"	Think about the t geographic inequ	time gap in the plailities.	roblems due to	
			15th	Return and amend	d report assignme	ents	Add opinions to t Teams about the	he faculty's comr assignment in w	ments sent via eek 9.	
			16th	About SDGs			Understand SDGs.			
Evaluation	on M	ethc	od and V	Veight (%)						
			cises(Wat	<u> </u>	Report(Hiraishi	Behavior	Portfolio	Other	Total	
Subtotal		50		0	50	0	0	0	100	
Basic Proficiency	/	0		0	0	0	0	0	0	
Specialized Proficiency		50		0	50	0	0	0	100	
Cross Area Proficiency		0		0	0	0	0	0	0	

А	kashi Co	llege		Year	2023		C	Course Title	Engineering Presentation II
Course	Informa	tion							
Course Co		5027				Course Categor	γ	Specializ	ed / Compulsory
Class Forr	mat	Seminar				Credits		School C	redit: 1
Departme	ent	Mechanic Engineeri		d Electronic	System	Student Grade		Adv. 2nd	1
Term		Second S		ster		Classes per We	ek	後期:2	
Textbook Teaching	and/or Materials								
Instructor			E Kar	nji,HIRAISHI	Toshihiro				
	<u>Objectiv</u>								
(1) Acquir	re knowled students f	lge in a wide om differen	e ran	ge of engine ecialties can i	ering-related field understand .	ls through prese	ntatio	ns of one'	s Research Studies presented in a
Rubric			_						
			Ideal Level			Standard Level			Unacceptable Level
Achievem	Achievement 1		Res stu spe	idents from decialties can decively dis	es in a way that different fully understand	Can present on Research Studi students from of specialties can discuss it with t	es in a differe under	n way that nt	students from different '
Assigne	d Depar	tment Obj	jecti	ves					
Teachin	g Metho	d							
Outline		presentat	tions,	oral present	res and exercises tations, etc. in ord eir impressions ar	der to enhance s	tuden	ts' abilitie:	written presentations, graphical s to express technical matters. the content.
Style		purposes	, and	their resear	ch plans, followed	by a question-a	and-ar	nswer sess	ions for their Research Studies, its sion. In the latter half of the give presentations using slides.
Notice		guarantee assignme have prep students'	ed in ent re pared pres	classes and ports. Emphal by themsel entations.	the standard self asis will be on pro	-study time requessenting and dis- termined time. S	iired fo cussin Studen	or pre-stu g the sum ts are exp	s include the learning time dy / review, and completing imaries and slides that students sected to be able to evaluate other
Charact	eristics o			sion in Lea		viii rioc be engibi	<u> </u>	· varaacioi ii	
☑ Active		5. Glass /		Aided by IC	<u> </u>	☑ Applicable to	o Rem	ote Class	☐ Instructor Professionally Experienced
Course	Plan								
			Them				Goals		
		1st C T T T T T T T T T	Creati Them Resea From	neme 3 (Introduction to the Research Studies): reating slides (Part 1, Hiraishi) neme 3 is to present the introduction to the esearch Studies in 10 minutes so that students orm different specialties can understand. After iefing on the assignment, prepare for the			Can explain what to be careful in communicating the background, research purposes, and research methods of one's own Research Studies to students from different specialties.		
		2nd C	Creati		ction to the Rese art 2, Hiraishi)	arch Studies):	Can make materials to communicate the background, purposes, and research method one's own Research Studies to students from different specialties.		
		3rd A	Kunin An 8- minut	nine) minute prese tes) and a 10	neme 3 (Part 1, H entation (a bell w D-minute Q&A wit e each other's pre	ill ring at 7 h everyone.	resea to stu	ate the background, purposes, and ad of one's own Research Studies on different specialties. Can also bout the presentations.	
2nd Semeste r	3rd Quarter			ntations (Pai as above	rt 2, Hiraishi and	Kunimine)	resea to stu	rch metho dents fror	ate the background, purposes, and add of one's own Research Studies on different specialties. Can also bout the presentations.
				ntations (Par as above	rt 3: Hiraishi and	Kunimine)	resea to stu	rch metho dents fror	ate the background, purposes, and of one's own Research Studies on different specialties. Can also bout the presentations.
				ntations (Par as above	rt 4: Hiraishi and	Kunimine)	resea to stu	rch metho dents fror	ate the background, purposes, and of one's own Research Studies on different specialties. Can also bout the presentations.
				ntations (Pai as above	rt 5: Hiraishi and	Kunimine)	resea to stu	rch metho dents fror	ate the background, purposes, and add of one's own Research Studies on different specialties. Can also bout the presentations.
				entations (Part 6: Hiraishi and Kunimine) e as above			Can communicate the background, purposes, and research method of one's own Research Studies to students from different specialties. Can also ask questions about the presentations.		

		9th	Theme 4 (Special slides preparation Prepare one's own review presentation	(Part 1: Kunimiń n Research Studie	e) '	Can prepare slid Studies review p	es and materials resentation.	for Research			
		10th	Each student show minutes and join everyone.	uld present Themin a 5-minute disc	e 4 within 10 cussion with	research method discussion of one	Can communicate the background, purposes, research method, experiment results, and discussion of one's own Research Studies. Can also ask questions about the presentations.				
		11th	Presentations (Pa Same as above	rt 2: Kuniminei ar	nd Hiraishi)	research method discussion of one	Can communicate the background, purposes, research method, experiment results, and discussion of one's own Research Studies. Can also ask questions about the presentations.				
	Quarter Same as above		rt 3: Kunimine an	d Hiraishi)	research method discussion of one	Can communicate the background, purposes, research method, experiment results, and discussion of one's own Research Studies. Can also ask guestions about the presentations.					
			Presentations (Part 4: Kunimine and Hiraishi) Same as above		d Hiraishi)	research method discussion of one	Can communicate the background, purposes, research method, experiment results, and discussion of one's own Research Studies. Can also ask questions about the presentations.				
	14th Presentations (Part 5: Kunir Same as above				d Hiraishi)	Can communicate the background, purposes, research method, experiment results, and discussion of one's own Research Studies. Can also ask questions about the presentations.					
		15th	Presentations (Pa Same as above	rt 6: Kunimine an	d Hiraishi)	research method discussion of one	te the background, experiment rese's own Research as about the pres	ults, and Studies. Can			
		16th	No final exam								
Evaluati	<u>ion Me</u>	thod and	Weight (%)	1							
	Presentation		Mutual Evaluations between students	Number of questions			Others	Total			
Subtotal	(50	30	10	0	0	0	100			
Basic Proficienc	y)	0	0	0	0	0	0			
Specialize Proficience		50	30	10	0	0	0	100			
Cross Are Proficienc)	0	0	0	0	0	0			

	kashi Co	ollege	Year	2023		Course Title	Research Studies
Course	Informa	tion					
Course Co	ode	5028			Course Category	/ Specializ	ed / Compulsory
Class For	mat	Seminar			Credits	School C	redit: 8
Departme	ent	Mechanica Engineerii	al and Electronic	System	Student Grade	Adv. 2nd	
Term		Year-roun			Classes per Wee	ek 8	
Textbook	and/or	お道教員が	「必要資料を配布」	する	'	1	
Teaching Instructo		16年秋癸//	が女質性で配け	<i>5</i> 0 °			
	Objectiv	 /AC					
(1)専門知 (2)自主的 (3)研究年	識の総合化 ・継続的に 報の英文ア	と深化を図り、 学習・研究に ブストラクト	取り組むことがて の作成により、英	できる。 「語による技術文を	論的、体系的、実践 書くことができる。 句上させることがで		考察できる。
Rubric			1				
			理想的な到達レ	ベルの目安	標準的な到達レベ	いいの目安	未到達レベルの目安
評価項目1			課題解決に向け	化と深化を図り、 て広い視野から理 実践的かつ独創的 できる。	専門知識の総合化 課題解決に向けて 論的、体系的、実 に考察できる。	広い視野から理	専門知識の総合化と深化を図り、 課題解決に向けて広い視野から理 論的、体系的、実践的かつ独創的 に考察できない。
評価項目2			自主的・継続的 極的に取り組む	に学習・研究に積 ことができる。	自主的・継続的に り組むことができ	学習・研究に取 る。	自主的・継続的に学習・研究に取り組むことができない。
評価項目3			研究年報の英文作成により、英	アブストラクトの 語による技術文を 、国際会議の論文	研究年報の英文ア 作成により、英語 書くことができる	による技術文を	研究年報の英文アブストラクトの 作成により、英語による技術文を 書くことができない。
評価項目4			一て、プレゼンテ	表することを通じ ーションの技術を することができる	審査発表会で発表 て、プレゼンテー 向上させることが	することを通じ ションの技術を できる。	審査発表会で発表することを通じて、プレゼンテーションの技術を 向上させることができない。
Assigne	d Depar	tment Obj	ectives				
Teachin	g Metho	od					
Outline		一また、丁学	研究の手法につい	を総合化し、各自が いても実践的に学ぶ)返しながら未知の	、研究課題には瀋智	習問題のように初	題解決にあたる実践的能力を養う。 めから答えが用意されているわけで い
Style					唄曵を切孔9る栄し	/こで于ん にほし	V 'o
JULYIC		各研究室に	分かれて、指導	教員から研究指導を		アニを子がてはり	V 10
Notice		本科目は、 360時間に 具体的には 判断によっ	授業で保証する 相当する学習内? は、与えられた問題 て自主的に行う。	教員から研究指導を 学習時間と、予習・ 等である。これまで 独点を探索し、アフ	受ける。 復習及び課題レポ- の学習で培われた素	- 卜作成に必要な 養を基礎にして	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の
Notice	eristics	本科目は、 360時間に 具体的には 判断によっ	授業で保証する。 相当する学習内容 は、与えられた問題	教員から研究指導を 学習時間と、予習・ 等である。これまで 独点を探索し、アフ	受ける。 復習及び課題レポ- の学習で培われた素	- 卜作成に必要な 養を基礎にして	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の
Notice Charact		本科目は、 360時間に 具体的には 判断によっ	授業で保証する 相当する学習内? は、与えられた問題 て自主的に行う。	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポ- の学習で培われた素	- 卜作成に必要な 養を基礎にして 発答に至るまでの	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。
Notice Charact Active	Learning	本科目は、 360時間に 具体的には 判断によっ	授業で保証する。 相当する学習内 は、与えられた問題 て自主的に行う。 Division in Le	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角	- 卜作成に必要な 養を基礎にして 発答に至るまでの	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の Instructor Professionally
Notice Charact ☑ Active	Learning	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。 相当する学習内程 は、与えられた問題 て自主的に行う。 Division in Le	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角 図 Applicable to	- ト作成に必要な 養を基礎にして Y答に至るまでの Remote Class	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の Instructor Professionally
Notice Charact Active	Learning	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。 相当する学習内名 は、与えられた問題 て自主的に行う。 Division in Le	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角 図 Applicable to	- ト作成に必要な 養を基礎にして Y答に至るまでの Remote Class Goals	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active	Learning	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。相当する学習内をは、与えられた問題で自主的に行う。 Division in Le	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class Goals 各指導教員の指詞	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の Instructor Professionally
Notice Charact Active	Learning	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。相当する学習内をは、与えられた問題で自主的に行う。Division in Leal Aided by Identification in Leal Identif	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 探答に至るまでの Remote Class Goals 各指導教員の指示 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active	Plan	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idan Aided	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、所	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class Goals 各指導教員の指示 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active	Plan	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class Goals 各指導教員の指示 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active	Plan	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角 図 Applicable to	- ト作成に必要な 養を基礎にして Y答に至るまでの Remote Class Soals 各指導教員の指示 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active	Plan	本科目は、 360時間に 具体的には 判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class Bati導教員の指示 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact ✓ Active Course	Plan	本科目は、 360時間に 具体的には 判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class Sals 各指導教員の指示 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active Course	Plan	本科目は、360時間に具体的には判断によっ of Class / I 1st 個 2nd 厚 3rd 厚 4th 厚 5th 厚 6th 厚 7th 厚 8th 厚	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。 Division in Lea	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポー の学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 経済に至るまでの Remote Class B 指導教員の指列 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
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Charact Charact Course Ist Semeste	Plan	本科目は、 360時間に 具体的には 判断によっ of Class / I	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。 Division in Le	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポーの学習で培われた素 の学習で持われた素 ローチ法を考え、解	- ト作成に必要な 養を基礎にして Y答に至るまでの Remote Class B指導教員の指示 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
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Charact Active Course	Plan 1st Quarter	本科目は、360時間に具体的には判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 陽 8th 同 9th 同 10th 同 11th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	教員から研究指導を 学習時間と、予習・ 学である。これまで 殖点を探索し、アフ earning	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして Y答に至るまでの Remote Class B指導教員の指示 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
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Charact Active Course	Plan 1st Quarter	本科目は、360時間に具体的には判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 同 8th 同 9th 同 10th 同 11th 同 12th 同 12th 同 13th 同 14th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。 Division in Lease and a second process and a second proce	数員から研究指導を 学習時間と、予習・ 学習時間と、これまで 関点を探索し、アブ earning CT	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角 ② Applicable to	ト作成に必要な 養を基礎にして 解答に至るまでの Remote Class 日本 日上 日上 日上 日上 日上 日上 日上 日上 日上 日上 日上 日上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Charact Active Course	Plan 1st Quarter	本科目は、360時間に具体的には判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 同 8th 同 9th 同 10th 同 11th 同 12th 同 13th 同 14th 同 15th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	数員から研究指導を 学習時間と、予習・ 学習時間と、これまで 関点を探索し、アブ earning CT	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、解	- ト作成に必要な 養を基礎にして Y答に至るまでの Remote Class B指導教員の指示 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active Course 1st Semeste r	Plan 1st Quarter	本科目は、360時間に具体的には判断によっ of Class / I 1st	授業で保証する。 相当する学習内容 は、与えられた問題 で自主的に行う。 Division in Le 国内の 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上	数員から研究指導を 学習時間と、予習・ 学習時間と、これまで 関点を探索し、アブ earning CT	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class Ba指導教員の指示 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active Course 1st Semeste r	Plan 1st Quarter 2nd Quarter	本科目は、360時間に見体的には判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 同 8th 同 9th 同 10th 同 11th 同 12th 同 13th 同 14th 同 15th 同 14th 同 13th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	数員から研究指導を 学習時間と、予習・ 学習時間と、これまで 関点を探索し、アブ earning CT	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class B 指導教員の指示 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice Charact Active Course 1st Semeste r	Plan 1st Quarter 2nd Quarter	本科目は、360時間に見体的には判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 同 8th 同 9th 同 10th 同 11th 同 12th 同 13th 同 14th 同 15th 同 14th 同 13th 同 14th 同 15th 同	授業で保証する。 相当する学習内容 は、与えられた問題 で自主的に行う。 Division in Le 国内の 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上 同上	数員から研究指導を 学習時間と、予習・ 学習時間と、これまで 関点を探索し、アブ earning CT	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角 Applicable to	ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class B 指導教員の指詞 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced
Notice	Plan 1st Quarter 2nd Quarter	本科目は、360時間に見体的には判断によっ of Class / I 1st 個 2nd 同 3rd 同 4th 同 5th 同 6th 同 7th 同 8th 同 9th 同 10th 同 11th 同 12th 同 13th 同 14th 同 15th 同 14th 同 15th 同	授業で保証する。相当する学習内容は、与えられた問題で自主的に行う。Division in Lease Aided by Idease Aided by	数員から研究指導を 学習時間と、予習・ 学習時間と、これまで 関点を探索し、アブ earning CT	受ける。 復習及び課題レポーの学習で培われた素 ローチ法を考え、角 Applicable to	- ト作成に必要な 養を基礎にして 発答に至るまでの Remote Class B 指導教員の指示 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上 司上	標準的な自己学習時間の総計が、 自主的、積極的に研究を進めること。 各研究プロセスを出来るだけ自己の □ Instructor Professionally Experienced

		7th	同上			同上				
		8th	同上			同上				
		9th	同上			同上	同上			
		10th	同上			同上	同上			
	4th	11th	同上			同上	同上			
		12th	同上			同上				
	Quarter	13th	同上			同上				
	Quarter	14th	同上			同上	同上			
		15th	審査発表会			研究ができ	研究成果を発表することができ、質問等に答えること ができる。			
		16th	期末試験実施·	せず						
Evaluati	ion Meth	od and	Weight (%)							
		研究論:	文	研究活動	研究年報		研究発表	Total		
Subtotal		40		20	20		20	100		
基礎的能力	0		0	0		0	0			
専門的能力	的能力 40		20	20		20	100			
分野横断的	能力	0		0	0		0	0		

А	kashi Co	ollege	Year		2023		(Course Title	Mechatro-system
Course 1	Informa	tion						_	
Course Co	ode	5029				Course Categor	ry	Specialize	ed / Elective
Class Forn	mat	Lecture				Credits		Academic	Credit: 2
Departme	ent	Engineerii	<u> </u>	nic	System	Student Grade		Adv. 2nd	
Term		First Sem	ester			Classes per We	ek	2	
Textbook Teaching									
Instructor		SEKIMOR	I Daisuke						
Course	Objectiv	es							
(1) Under (2) Under	stand the	basic knowle to fuse sen	edge and oper sors and actual intelligent by	ato	rs and can create	ensors and actua a basic system.	itors a	and can cor	ntrol them with a computer.
Rubric									
			Ideal Level	vel Standard					Unacceptable Level
Achievem	ent 1			se nd o	operating	Understand the knowledge and principles of se actuators and computer with a computer	oper nsor a can co	ating and	Do not understand the basic knowledge and operating principles of sensor and actuators and cannot control them with a computer.
Achievement 2			Understand and actuator accurately c system.	rs a		Understand how and actuators a basic system.			Do not understand how to fuse sensors and actuators and cannot create a basic system.
Achievem	ent 3		Can accurate system intel programmin	liģe	make the entire ent by	Can make the control intelligent by p			Cannot make the entire system intelligent by programming.
Assigne	d Depar	tment Obj	ectives						
	g Metho								
Outline		information machinery subsysten methods explained	on engineering	g n nt rs, ned	ecessary for mechis based on the su (2) actuators, and step-by-step star	natronics. In add object of autonor of (3) control system of ting with the ba	lition, mous tems. sics. l	there will t mobile rob The actual Finally, the	hanical, electrical, electronic and be exercises using the actual ots and focuses on their mechanisms and specific control idea of integrating these will be
Style		Lectures v materials.		tec	l in accordance wi	th the handouts	. The	course also	o includes exercises using robot as
Notice		guarantee	ed in classes a nt reports.	ınd	amount to 90 hou the standard self more of classes v	-study time requ	uired 1	for pre-stud	include the learning time ly / review, and completing
Charact	eristics (of Class /	Division in	Le	arning				1
□ Active	Learning		☐ Aided by	IC	T	☐ Applicable t	o Rer	note Class	☐ Instructor Professionally Experienced
Course I	Plan								
		Т	heme				Goals	5	
		1st A	n outline of m	nob	oile robots		robot	ts such as h faces. Can a	basic configurations for mobile nardware, software, and also operate an actual mobile ple program.
		2nd M	licrocomputer	· cc	ontrol		of mi syste meth	icrocomput ems. Also u	functions and basic configurations ers that control entire robot nderstand specific control microcomputer programming
		3rd S	ensor principl	es	and control metho	ods	devic	ces such as Il sensors, r	principles and control methods of optical sensors, force sensors, rotary encoders, which are widely for robots.
1st Semeste Qua	1st Quarter	4th I	nfrared proxin	nity	y sensor control		by do	oing infrare cises. Can ι	trol circuits and interface circuits d proximity sensors control use an actual infrared proximity about how to detect objects.
		5th R	otary encode	r co	ontrol		enco rotar rotat	der control y encoder t ion angle, a	trol circuits, etc. by doing rotary exercises. Can use an actual to learn how to measure a motor's angular speed, etc.
		6th A	ctuator princi	ple	s and control met	hods	of the stepp	e main type ping motors	r principles and control methods es of actuators of robots, such as and DC motors.
		7th D	C motor cont	rol	(1)		by do	oing DC mo	trol circuits and interface circuits tor control exercises. Can use an to learn driving methods for a -reverse, PWMs, etc.

		8th	DC motor co	ntrol (2)			contro	ol exercises. C	ntrol theory by Can use an actual of a motor's sp	doing DC motor ual DC motor to eed.	
		9th	DC motor co	ntrol (3)			Same as above				
		10th	Position cont	rol of a mobile	robot (1)		mobil	Understand the mechanisms and kinematics of mobile robots. Also understand position control methods that use feedforward and feedback.			
	2nd Quarter 12th		Position cont	rol of a mobile	robot (2)		Can measure position accuracy through feedforward and feedback, and discuss the results through a mobile robot's position control exercises.				
			Position estir	mation of a mo	bile robot		labout	rstand dead re ating a mobile position estir I mobile robot	nation method	actical method of on, and learn s that use an	
			Obstacle avo	Obstacle avoidance (1)				Learn how to guide the mobile robot to its destination while detecting and avoiding obstacles using the infrared proximity sensors mounted on it.			
		14th	Obstacle avo	Obstacle avoidance (2)				as above			
		15th	Obstacle avo	idance (3)			Same as above				
		16th	Final exam								
Evaluati	on Meth	nod and	Weight (%))							
	Exar	nination	Presentation	Mutual Evaluations between students	Behavior	Portfoli	0	Other	Exercise	Total	
Subtotal	50		0	0	0	0		0	50	100	
Basic Proficience			0	0	0	0		0	0	0	
Specialize Proficience			0		0	50	100				
Cross Are Proficience			0	0	0	0		0	0	0	

Д	kashi Co	ollege	Year	2023			Course Title	Computational Mechanics	
Course	Informa	tion							
Course Co	ode	5030				ırse Categor	y Specializ	zed / Elective	
Class For	mat	Lecture			Cre	dits	Academ	ic Credit: 2	
Departme	ent	Mechani Enginee	cal and Electror ring	ic System	Stu	dent Grade	Adv. 2nd	d	
Term		First Ser	nester		Clas	sses per We	ek 2		
Textbook Teaching	and/or Materials								
Instructo	r	KUNIMI	NE Kanji						
Course	Objectiv	es							
(2) Can d (3) Can d	letermine letermine	numerical s numerical s	ifferential methor olutions for two olutions for one olutions for mo	-dimensiona -dimensiona	I unsteady-s	state problen	ns.		
Rubric									
			Ideal Level	1.1 1 .		ndard Level		Unacceptable Level	
Achievem	nent 1		differential n	tand the basi nethods.		lerstand the erential metl		Do not understand the basics of differential methods.	
Achievem	schievement 2			ermine nume two-dimensi problems.	ional solι	determine utions for two ady-state pro	o-dimensional	Cannot determine numerical solutions for two-dimensional steady-state problems.	
Achievement 3 solution's for one-dimensional solutions for one-dimensional solutions for one-dimensional				Cannot determine numerical solutions for one-dimensional unsteady-state problems.					
				ermine nume moving bour	erical Can	determine	•	Cannot determine numerical	
Assiane	d Denar	tment Ob			Ibio			15.00.0	
	ig Metho		7,000.100						
Outline		assistand problem are typic coagulat	ce of computers s. The course w ca numerical sol ion.	s. In this cou vill explain the utions. It wil	rse, student e basic theo l also explai	s will be guion ry and specing how to app	ded through th fic ways to cald ply them to mo	resent physical phenomena with the e basic formula of heat conduction culate differential methods, which oving boundary problems, such as lected for year 5) at the Mechanica	
Style		Engineer	ring Departmen	t and Advand hem. Studen	ced Heat Tra	ansfer from t	the school's adv	vance courses, as the study nts to meet the Course Objectives	
Notice		guarante assignm In order The eval	eed in classes a ent renorts	nd the standa goals, studer ased on four	ard self-stud nts are advis assignment	ly time requ sed to thorous as and two q	ired for pre-stu ughly pre-study uizzes.	s include the learning time ldy / review, and completing and review each week's class.	
Charact	eristics	of Class /	Division in I	_earning					
□ Active	Learning		☑ Aided by	ICT	Ø,	Applicable to	Remote Class	☐ Instructor Professionally Experienced	
Course	Dlan								
Course	Piaii		Theme				Goals		
		1st	Heat conductio	n equations			Can derive a th	nermal conduction equation of a	
		2nd	Basics of the di	fference met	hod	1	Can derive the derivatives of t	dinate system. differential formula for the he first and second floors labeled mathematically.	
		3rd	Quiz on two-di	mensional ste	eady-state p	roblems	Understand the dimensional ste	e differential formula for two- eady-state problems and how to in do a quiz on content from Week	
1st Semeste	1st Quarter	4th	Exercise (1)				Can create a pr steady-state pr	rogram for two-dimensional roblems.	
r		5th	Exercise (2)				Can determine program create	numerical solutions using the ed in Week 4.	
		6th	One-dimension	al unsteady-	state proble	ms (1)	Understand the differential met	e solution by the forward thod and its algorithm.	
		7th	One-dimension	al unsteady-	state proble	ms (2)	Can understand	d the solution by reverse thod and its algorithm.	
		8th	Exercise (3)				Can create programs for one-dimensional unsteady-state problems.		
		. —	Exercise (4)				Can determine numerical solutions using the program created in Week 8.		

	10	th N	Moving boundary	/ problem		boundary co	nditions, and c	tions and initial and an find an approximate n problems with phase		
	11		Quiz on the hanc 1)	lling moving l	boundary surfaces	as a typical e surfaces that	Understand the fixed temperature point method as a typical example of handling boundary surfaces that may move over time. Can do a quiz on content from Week 10.			
	12	th H	Handling moving	boundary su	rfaces (2)	Understand to		of a fixed temperature		
	13	th E	Exercise (5)			Can create a point method	program using d.	g a fixed temperature		
	14	th E	Exercise (6)				Can create a program using a fixed temperature point method.			
	15	th E	Exercise (7)			Can determine program creations	Can determine numerical solutions using the program created in Weeks 13 and 14.			
	16	th N	No final exam			0				
Evaluation	n Method	and W	eight (%)							
	Report		Short Tests					Total		
Subtotal	70		30	0	0	0	0	100		
Basic Proficiency	0		0 0 0		0	0	0	0		
Specialized Proficiency	70		30 0 0		0	0	100			
Cross Area Proficiency	0		0	0	0	0	0	0		

							ourse		
А	kashi Co	llege	Year	2023			Title	Energy Technology II	
	<u>Informat</u>				I		I		
Class Form		5031			Crodita	ry	'	ed / Elective	
Class Forn Departme			cal and Electronic	System	Credits Student Grade		Adv. 2nd	c Credit: 2	
Term		Enginee First Ser			Classes per Week 2				
Textbook		First Sei	Hestel		Ciasses pei we	EEK			
Teaching I		TANIAKA	Cailabi						
Instructor	Objective	TANAKA	Selicili						
The course (1) Can re (2) Unders (3) Unders To achieve (a) Solve (b) Descri	e objective cognize fu stand and stand the let these go each week be the app	es are as fo ture problican explai basic issue als, studer 's exercise propriate e	ems and discuss on the principles of each thermonts will need to do questions and re	f structural and en- -fluid machine and the following self- esearch the relevan ts and consideration	ergy conversion plan, conduct, -study: It topics to enha	of the and ev ance un	rmal engi aluate pe iderstand	support livelihoods. nes and fluid machinery. rformance tests. ing. o prepare experimental reports for	
Rubric			ŀ						
			Ideal Level		Standard Leve			Unacceptable Level	
Achieveme	ent 1				Can recognize and discuss me energy convers that support liv	easures sion tec	for chnologies	for energy conversion	
Achieveme	ent 2		structural and	in the principles of energy thermal engines	Understand an principles of st energy convers engines and flu	ructura sion of	l and thermal	Do not understand and cannot explain the principles of structural and energy conversion of thermal engines and fluid machinery.	
Achieveme	ent 3		issues of each	can properly plan, evaluate	oach thormo fluid machine and			Issues of each thermo-fluid	
Assigned	d Depart	ment Ob	ojectives						
Teaching	g Method	d							
Outline		learn the specifica practical plan and	e approaches to pally, they will unde l use and learn th l implement perfo	performance calcula erstand the structu e approaches to pe ormance evaluation	ation and experi res and principl erformance eval ns through labs.	mental es of th uations	l evaluation nermal er s. To do t	n technologies and will practically on that designing requires. More igines and fluid machinery in hese things, students will actually	
Style		each un following student	it and two labs. I g the questions and is having difficult	In order to achieve nd answers and wo	the goals, stud ork in class as w nould go back to	ents sh ell as to the ba	nould ensi he exerci	re will be assignment exercises for ure their understanding by ses assigned in each class. If a ney don't understand, they should	
Notice		Heat Tranot mea students Students based or first clas This cou classes a Students	ansfer. Therefore, in that students we so should come and so submit in the results of the secondary so content will and the standard so who miss 1/3 on the standard so who who who who who who who who who wh	keep the textbook who have not taken d discuss it with th a lab report as par le planned experim amount to 90 hou self-study time recr more of classes w	ks for those sub- those courses e faculty as mu- t of a prerequisi- nent. Other deta rs in total. Thes	jects at are una ch as p ite for e illed ev	thand an able to tallossible. earning thalloation of sinclude	modynamics, Fluid Mechanics, and d review them. However, this does ke this course. In these cases, he credit. They will be evaluated criteria will be explained during the the learning time guaranteed in ad completing assignment reports.	
Characte	eristics o	of Class /	<u>' Division in Le</u>	earning	ı				
☐ Active	Learning		☐ Aided by I	СТ	☐ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced	
Course I	Dlan								
Course	iai i		Theme			Goals			
		1st	Energy conversion	on		Under	stand and rsions, es ication.	d explain types of energy pecially thermal engine	
1st Semeste	1st	2nd	Cycle and therma (1)	al efficiency of ther	mal engines	Understand an air theory cycle hyp calculate the thermal efficiency of a typical thermal engine.		ermal efficiency of a cycle for a	
Semeste 150	Quarter	3rd	Cycle and therma (2)	ycle and thermal efficiency of thermal engines			alculate the cal thermance ence betw	ne thermal efficiency of a cycle for al engine and explain the een the thermal efficiency required cycle, after comparing their	

		4th		Analysis and measurer performance (1)	ment of thermal engine	indicated power and dia	efficiency that are required		
		5th		Analysis and measurer performance (2)	ment of thermal engine	Understand and can app methods of measuring paccounting that are req thermal engine's perfor	uired to evaluate a		
		6th		Performance evaluatio 1)	n of thermal engines (Lab	engine that is in line wit members of the class in	ive performance or an internal combustion th objectives presented by order to gain a hands-on ems learned up to week 5.		
		7th		Performance evaluatio 1)	n of thermal engines (Lab	Can conduct the perform experiment for an interi was planned the previous into a report. (Report as	nal combustion engine that us week, and compile it		
	8th 9th		I	Energy conversion in f	luid machinery	Can introduce fluid mac water vehicles, windmil and explain their princip	ls, etc., and understand		
			ı	Performance and effici	ency of turbo machines (1	Understand and can apply types and their general			
		10th		Performance and effici	ency of turbo machines (2)	Understand and can exp specific phenomena of f	plain the operation and the luid machinery.		
		11th		Analysis and measurer performance	ment of fluid machinery	Understand and can app specific speed, performal laws that are required the engine's performance.	ply information such as the ance curve, and similarity o evaluate a thermal		
	2nd Quarter	12th		Performance evaluatio	n of fluid machinery (Lab 2	experiment that is in lin presented by members	Can plan a pump performance evaluation experiment that is in line with objectives presented by members of the class in order to gain a hands-on understanding of the items learned up to week 11.		
		13th	I	Performance evaluatio	n of fluid machinery (Lab 2		internal combustion engine that revious week, and compile it		
		14th		Principles and power g cells (1)	eneration systems of fuel	Understand and can ext types of fuel cells and the	plain the principles and neir systems.		
	15th			Principles and power g cells (2)	eneration systems of fuel	Understand fuel cells' the balance and can calcula efficiency of real ones. (te the theoretical		
		16th		Final exam					
Evaluati	on Meth	od ar	nd W	/eight (%)					
			Exer		Report	Final exam	Total		
Subtotal			20		40	40	100		
Basic Prof	iciency		0		0	0	0		
Specialize		icy	20		40	40	100		
Cross Area	a Proficien	,	0		0	0	0		
Cross Area Fronciency									

А	kashi Co	ollege	Year	2023		Course Title	Strength and Fracture of Materials	
Course 1	Informa	tion						
Course Co	ode	5032			Course Categor	y Specializ	zed / Elective	
Class Forn	mat	Lecture			Credits	Academ	ic Credit: 2	
Departme	ent	Mechanica Engineerir	al and Electronic ng	System	Student Grade	Adv. 2nd		
Term		Second Se	emester		Classes per We	ek 2		
Textbook Teaching								
Instructor		MORISHIT	A Tomohiro					
Course (Objectiv	es						
(2) Under	stand the	statistical pr	operties of mate	mechanic methodo erial strength and l material strength	learn about relia	bility engineerir	ng handling.	
Rubric								
			Ideal Level		Standard Level		Unacceptable Level	
Achievement 1			Can specifically appropriate ap fracture mecha for material strassessment.	plication of anic methodology	Can explain the application of fi methodology for strength assess	racture mechan or material	Cannot explain the appropriate application of fracture mechanic methodology for material strength assessment.	
Achievement 2			and can specifi	naterial strength	Understand the properties of m and can explair engineering ha	naterial strength n reliability	Understand the statistical properties of material strength and can explain reliability engineering handling.	
Achievement 3			Can specifically effects of vario material streng	us factors on	Can explain the various factors strength.		Cannot explain the effects of various factors on material strength.	
Assigne	d Depar	tment Obj	ectives					
Teachin	g Metho	d						
Outline		other field mechanics structures strength o	s, including eng s, and reliability and various fac lesign methods	ineering materials engineering. The tors on various sti for various machir	like metal struce aim of this cou rength propertie	ture, the streng rse is to unders s, and to learn	to solid materials. It is related to the of materials and continuum tand the effects of microscopic about material selection and	
Style			ill be held in a le					
Notice		Akashi Ko basics as include th review, ar	sen Mechanical I much as possible e learning time on nd completing as	Engineering Depar e. This course's co	rtment and other ontent will amou sses and the star	r related subjec nt to 90 hours on adard self-study	I Strength of Materials offered at ts, classes will be taught from the of study in total. These hours time required for pre-study /	
Characte	eristics o	of Class / I	Division in Le	arning				
☐ Active	Learning		☐ Aided by IC	T	☑ Applicable to	o Remote Class	☐ Instructor Professionally Experienced	
Course	Dlan							
Course	ridíl 	-	heme		ı	Goals		
		II 1st L	ntroduction to st earn about basic	rength and fracture concepts and corture of materials.	re of materials ntents of	Can explain the	e basic concepts and contents of acture of materials.	
		اا اد	ads (1)	ength, and fracture static strength and on of metal materi		Can explain the plastic deforma	e static strength and sliding and ation of metal materials.	
		3rd lo	ads (2)	ength, and fracture engthen metal ma		Can explain hor and how they v	w to strengthen metal materials work.	
2nd Semeste r	3rd Quarter	4th L	ads (3)	ength, and fracture s of fractures in m hanisms.		Can explain typ and fracture m	pes of fractures in metal materials echanisms.	
		5th L	earn about the s tress intensity fa		ck tips, and the	Can explain the stress intensity	e stress fields at crack tips, and the factor.	
		6th L	n overview of free	acture mechanics (2) crack tip's plastic zone and the		Can explain the crack tip's plastic zone and the energy release rate.		
			nergy release ra			chergy release	Tate:	
		e 7th A	nergy release ra n overview of fr		(3)	<u> </u>	ne strain fracture toughness.	

		9th	Fatigue (2) Learn about various fatigue test me fatigue characteristics.	ethods and	Can explain vario fatigue characteri	us fatigue test methods and stics.	
		10th	Fatigue (3) Learn about the characteristics of fapropagation.	atigue crack	Can explain the c propagation.	haracteristics of fatigue crack	
		11th	High temperature strength and env strength Learn about creep deformation, cre and corrosion.		Can explain creep deformation, creep fracture and corrosion.		
	4th Quarter	1201	Statistical properties of material str Learn about the become necessary considering the statistical propertie strength.	upon ` ´	Can explain the b considering the st strength.	ecome necessary upon tatistical properties of material	
		13th	Statistical properties of material str Learn about various types of proba and their uses.	ength (2) bility paper	Can explain vario their uses.	us types of probability paper and	
		14th	Statistical properties of material str Learn about the statistical propertie strength for metal materials, etc.	ength (3) es of the static	Can explain the s strength for meta	tatistical properties of the static Il materials, etc.	
		15th	Statistical properties of material str Learn about the statistical propertie fatigue strength for metal materials	es of the	Can explain the s strength for meta	tatistical properties of the fatigue Il materials, etc.	
		16th	Final exam				
Evaluati	on Meth	od and V	Veight (%)				
			Examination	Report		Total	
Subtotal			80	20		100	
Basic Prof	iciency		40	20		60	
Specialized Proficiency		ncy	40	0		40	
Cross Area Proficiency		су	0	0		0	

А	kashi Co	ollege	Year	2023			ourse Title	Optoelectronics Devices		
Course	Informa	tion								
Course Co	ode	5033			Course Catego	ry	Specializ	ed / Elective		
Class Forr	mat	Lecture			Credits		Academi	c Credit: 2		
Departme	ent	Engineeri		c System	Student Grade					
Term		First Sem	nester		Classes per We	Classes per Week 2				
Textbook Teaching										
Instructor	•	SUYAMA	Taikei							
1) Can ex the basis 2) Unders display de	for optical stand the devices and	basics of qual devices. operating prican explain	inciples and cha	aracteristics of var properties system	ious light emitting	g device	es, photo	n optical waves and electrons as sensitive devices, and solid-state inology from one's field of		
Rubric										
			Ideal Level		Standard Level	l		Unacceptable Level		
Achievement 1				nd can apply the eristics of light, chanics, and ors.	Understand the characteristics mechanics, and semiconductors	of light d	, quantui	Do not understand the basic characteristics of light, quantum mechanics, and semiconductors.		
Achievem	ent 2		Understand to between light electrons and problems.		Understand the between light velectrons.			Do not understand the interaction between light waves and electrons.		
Achievement 3			and application		Understand the of optical device optical wavegulasers.	es such	i as	Do not understand the basic principles of optical devices such as optical waveguides, LEDs, and lasers.		
			detail photose display device optical comm measurement applications, applications,	es, optical fibers, unication, optical t and medical optical power	Understand ph display devices optical commu measurement a applications, of applications, et	s, optica nicatior and me ptical po	ll fibers, n, optical dical	Do not understand photosensitive and display devices, optical fibers, optical communication, optical measurement and medical applications, optical power applications, etc.		
Assigne	d Depar	tment Ob	jectives							
Teachin	g Metho	od								
Outline		engineeri a wide ra advanced second h	ng. It has helpe nge of content. I significantly. I alf will explain v	ed diversify and in Optical devices m n this course, the	nprove the performake up the core of first half will focu- vices used for opti	mance devices s on the ical info	of electro within the basics a	engineering, and electronics onic engineering functions and has his, and this technology has and theory of optical devices. The transmission, optical recording,		
Style		I The over	rall evaluation v	or more of classes vill be based 100% ssess students' lev	6 on periodic exar	ms. The	e minimu	m score for a pass will be 60%.		
Notice		This cou guarante	rse's content wi ed in classes an	ill amount to 90 h	ours of study in to elf-study time requal at students have	otal. Th uired fo master	ese hour r pre-stu ed subie	s include the learning time dy / review, and completing cts related to electronic properties.		
Charact	eristics	-	Division in L		- 5					
☐ Active		<u> </u>	☑ Aided by I	<u> </u>	☑ Applicable t	o Remo	te Class	☐ Instructor Professionally Experienced		
Course	Plan									
			Гһете			Goals				
		1st (Optical electroni characteristic ha Felecommunica	tions engineering, d light energy. Ba m of optical device	whose imaging	Optica Unders	l electron stand the	nics and optical devices form of optical electronics.		
1st Semeste r	1st Quarter	2nd F	Review the basi reflection, interf	operties of light c properties of ligh erence, diffraction been learned so fa	n, polarization,	Unders	stand the	fundamental properties of light.		
		3rd &	Basics of quanto Describe the bardevelopment, the Waves of matter Waves of matter Make up the the Machanics requ	um mechanics ckground of quant ne dual nature of p r, the wave equati action, and wave f ecretical backgrou	chanics nd of quantum mechanics nature of particles and vave equation of the and wave functions, which al background of quantum understand the basics of quantum understand the interaction			basics of quantum mechanics.		

	4th	Optical properties Materials absorb a to interactions bet Think phenomenol and emission in se	nd emit light. Thi ween electrons ir ogically about lig	is is mainly due substances.	Understand light semiconductors.	absorption and	emission in	
	5th	Electrical propertie Describe the electr semiconductors, w devices.	ical properties of	:	Understand the esemiconductors.	electrical propert	ies of	
	6th	Quantum theory of waves and electron. Think about a met representation of the and electrons. Der material (the real paccumulation of er that represents abemission) by the sapproximation usin	ns hod of quantum he interaction be ive the polarizati oart that indicate nergy and the ima sorption and stin econd-order syst	mechanical tween light on factor of a s the aginary part nulated em	Understand the obetween light wa	quantum theory oves and electron	of the interaction ns.	
	7th	Quantum theory of waves and electron stimulated emission Derive the rate equipercentage of tem electron density betweek. Think about level system, base	ns (electron trans n) uation representi poral changes in ssed on the analy process from th the polarization	ng the photon and risk of the light e previous	Understand elect emission.	ronic transitions	and stimulated	
	8th	Photoelectric wave Using mainly light of photoelectric wa as an optical wave reflection, wavegu index, containmen light propagation, power matching of loss, power match propagation, mode bluster angle and l	approximation for aveguide, describ guide's basic pro ide mode, equiva t coefficient, pow light gathering and i light propagation to matching conditions for the matching conditions for the matching conditions for the same the matching conditions for the same the s	e topics such perties (total slent refractive ver matching of nd emission), n and bending right	Photoelectric waveguides Using mainly light approximation for the analysis of photoelectric waveguide, understand topics such as an optical waveguide's basic properties (total reflection, waveguide mode, equivalent refractive index, containment coefficient, power matching of light propagation, light gathering an emission), power matching of light propagation and bending loss, power matching conditions for light propagation, mode matching conditions, and bluster angle and bending loss.			
	9th	Periodic structures projection Explain periodic str Understand light co	and light concer	tonic crystals.	Understand peric concentration an	odic structures, I d projection, pe		
	10th	Optical simulator			Understand how	to use the Optic	al simulator	
	11th	Light emitting diod Describe the struct materials of light e the important light light emitting char- think about its curr	ture, production in mitting diodes (Los emitting devices acteristics and fe	.EDs), one of s. Explain its	Understand the principles of light emitting diodes.			
2nd Quartei	12th	Semiconductor lass Explain the proper a light sources and threshold, optical of amplification gain, structure, type, en semiconductor lass	ers ties of semicondu I determine an os output, oscillatior and so on. Desci nission characteri	scillation n wavelength, ribe the	Understand the principles of semiconductor lasers. Understand the structure, properties, and features of photodetectors, photodiodes, solar cells, etc.			
	13th	Photosensitive and Describe the struct photosensitive dev photodiodes, solar devices with a focu	ture, properties, ices such as photocells, etc. Descri	todetectors,				
	14th	Optical fiber lines a Describe optical fib circuit elements, o	er and device bo	nding, optical	Understand optical fiber and device bonding, optical circuit elements, optical polarizers, etc.			
	15th	Applications of opt Describe topics wit communications, of medical application etc.	:h a focus on opti optical measurem	ent and	Understand the a	applications of o	ptical devices.	
		Final exam			Final exam			
Evaluation Me	thod and V	Veight (%)						
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Exercise	Total	
Subtotal 1	100	0	0	0	0	0	100	
Basic Proficiency)	0	0	0	0	0	0	
Specialized Proficiency	100	0	0	0	0	0	100	
Cross Area Proficiency 0 0 0 0 0 0						0		

А	kashi Co	ollege	Year	2023		С	Course Title	Algorithms	
Course 1	Informa	tion		•					
Course Co	de	5034			Course Categor	ry	Specialize	d / Elective	
Class Forn	nat	Lecture			Credits		Academic	Credit: 2	
Departme	nt	Mechanic Engineeri	al and Electron ng	ic System	Student Grade	e Adv. 2nd			
Term		Second S	emester		Classes per We	eek	2		
Textbook Teaching I									
Instructor		HAMADA	Yukihiro						
Course (Objectiv	es							
[2] Can Underst [3] Algo [4] Algo [5] Algo [6] Algo	formulate and the all prithms the prithms to prithms for the p	real probler gorithms list at constitute explore grap solving sho solving max	ms on graphs. ted below and a minimum sp	olem					
Rubric									
			Ideal Level		Standard Level	l		Unacceptable Level	
Achieveme	ent 1			al complexity, stacks, queues,	Can explain con complexity, ord queues, graphs	ders, li	sts, stacks,	Cannot explain computational complexity, orders, lists, stacks, queues, graphs, and trees.	
Achieveme	ent 2		Can accurate problem for a meeting date committees.	ly formulate a determining the es of various	Can formulate determining the of various com	ie meet	ting dates	Cannot formulate a problem for determining the meeting dates of various committees.	
Achieveme	ent 3			ly explain Kruskal's gorithms and their kities.	Can explain Kru algorithms and complexities.	uskal's I their	and Prim's time	Cannot explain Kruskal's and Prim's algorithms and their time complexities.	
Achieveme	ent 4		first search a	ly explain depth- nd breadth-first thms and their kities.	and breadth-first search algorithms and their time		-first search search and breadth-fir and their time algorithms and their t		
Achieveme	ent 5		Can accurate Dijkstra's, Be Floyd's algori time complex	ellman-Ford, and ithms and their	Can explain Dijkstra's, Bellman- Ford, and Floyd's algorithms and their time complexities.		órithms	Cannot explain Dijkstra's, Bellman-Ford, and Floyd's algorithms and their time complexities.	
Achieveme	ent 6		Fulkerson, Ed	ly explain the Ford- dmonds-Karp, and algorithms and mplexities.	Edmonds-Karp, and Push- relabel algorithms and their			Cannot explain the Ford- Fulkerson, Edmonds-Karp, and Push-relabel algorithms and their time complexities.	
Achieveme	ent 7		Knuth-Morris		Can explain the Knuth-Morris- Pratt and Boyer-Moore algorithms and their time complexities.			Cannot explain the Knuth- Morris-Pratt and Boyer-Moore algorithms and their time complexities.	
Assigned	d Depar	tment Ob	jectives						
Teaching	g Metho	d							
Outline		binomial s between get the so computer	sets of vertex a "things" in real plution for it by	and edge sets, and a -world problems. It solving it on a grap Il learn about algorit	are often used to is possible to fo oh. Strings are o	o repre ormulat one of t	esent the "i te a real pr the most in	ms. Graphs are defined as elationships" or "connections" oblem as a graph problem and nportant kinds of data handled by ed strings in string data, such as	
Style		Classes w Japanese		lecture style. All slid	des are written i	in Engl	ish. The te	acher speaks English mainly and	
Notice		This cours guarantee assignme taking thi	se's content wi ed in classes ar nt reports. It is s course.	nd the standard self	-study time requ students to have	uired for e mast	or pre-stud ered progr	include the learning time y / review, and completing amming in C language before	
Characte	eristics o		Division in L						
□ Active		,	☑ Aided by I		☑ Applicable to	o Rem	ote Class	☐ Instructor Professionally Experienced	
Course I	Plan								
Course I	iuii	П	heme			Goals			
				e of algorithms	Can explain algorit			orithms, computational	
2nd	3rd		Basic knowledg				lexity, and		
Semeste Quarter Range Ra				ulate real-world problems as graph			Can explain lists, stacks, queues, and heaps. Can explain graphs and trees. Can formulate a problem for determining the meeting dates of various committees as a problem on a graph.		

			Algorithms that co	nnstitute a minim	um snanning	Can explain Kru	skal's algorithm	set operation	
		4th	tree algorithm 1/		атт эратті	algorithms and	their time comp	lexities.	
		5th	Algorithms that co tree 2/2	onstitute a minim	um spanning	Can explain Prir complexity.	n's algorithm ar	nd its time	
		6th	Algorithms to exp	lore graphs		Can explain depth-first search and breadth-first search algorithms and their time complexities.			
		7th	Algorithms for sol 1/2	ving shortest pat	h problems	Can explain Dijk shortest path fromplexity.	stra's algorithm om a single vert	for finding the ex and its time	
		8th	Midterm exam The exam's scope 6.	e will be content f	rom weeks 1 to				
		9th	Algorithms for sol 2/2	ving shortest pat	h problems	Can explain the Bellman-Ford algorithm for the shortest path from a single vertex and the Floyd algorithm for the shortest path between all vertices. Can also explain their time complexities.			
	10th 11th		Algorithms for sol 1/2	ving maximum fl	ow problems	Can explain the Karp algorithms	Ford-Fulkerson and their time	and Edmonds- complexities.	
			Algorithms for sol 2/2	hms for solving maximum flow problems			Can explain the Push-relabel algorithm and its time complexity.		
	4th Ouarte	12th	Algorithms for str	hms for string pattern matching 1/3			Knuth-Morris-P kity.	ratt algorithm and	
	~	13th	Algorithms for str	Algorithms for string pattern matching 2/3			Boyer-Moore al ea 1) and its tim	gorithm ne complexity.	
		14th	Algorithms for str	ing pattern matcl	ning 3/3	Can explain the Boyer-Moore algorithm (acceleration idea 2) and its time complexity.			
		15th	From algorithm th	neory to engineer	ing	Can explain "algorithm engineering," which bridges the gap between algorithm theory and reality.			
		16th	Final exam			· ouncy:			
Evaluati	on Me	thod and	Weight (%)						
	1	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	
Subtotal		100	0	0	0	0	0	100	
Basic Proficiency			0	0	0	0	0	0	
Specialize Proficiency		100	0	0	0	0	0	100	
Cross Area			0	0	0	0	0		

Akashi College		Year 2023		Course Title	Advanced Electronic Circuit				
Course	Informa	tion							
Course Co	ode	5035			Course Categor	y Special	ized / Elective		
Class Forr	mat	Lecture			Credits	Acaden	nic Credit: 2		
Departme	ent	Mechanic Engineer	cal and Electronic ing	c System	Student Grade	Adv. 2r	nd		
Term		First Sen			Classes per We	ek 2			
Textbook									
Teaching Instructor		INOUE K	azunari						
	Objectiv		uzunun						
This cours understar	se will tead nd the CMO nd the road n taken in	ch VLSI dev OS logic circ	uit, apply it to co	omputer and controcher	ol circuits, learn more the aim is	the features of	. The objective is to correctly f various memory LSIs, and I the challenges and measures that nsumption and reliability		
Rubric					1				
			Ideal Level		Standard Level		Unacceptable Level		
Achievem	ent 1		Fully understa and operation techniques.	and circuit design verification	Understand circ operation verifi techniques.		Do not understand circuit design and operation verification techniques.		
Achievem	ent 2		Fully understa for low power high speed.	and technologies consumption and	Understand tec power consump speed.	thnologies for lotion and high	•		
Achievem	ent 3			and high-density it technologies I, DRAM, and	Understand hig memory circuit such as SRAM, Flash.	technológies	Do not understand high-density memory circuit technologies such as SRAM, DRAM, and Flash.		
Assigne	d Depar	tment Ob	jectives						
Teachin	g Metho	d							
Outline		consump high-perf In this co performa	tion, and higher formance design ourse, lessons wi ince design elect	integration. The contention integration in the conducted in the conducted in	ourse will lecture nieving them. a lecture style fo	e on circuit and ormat. Student	nigher speed, lower power architecture technologies regarding s will be introduced to the highwith practical experience in		
Style		exams, a 1) Under 2) Under	nd evaluation w stand circuit des stand technoloa	lecture and exercis ill be based on the sign and operationa ies for low power c ity memory circuit	submitted assig al verification tec consumption and	nment. hnologies. high speed.	nbers 1) to 3). There will be no		
Notice		This cour guarante assignme	rse's content will ed in classes and ent reports.	amount to 90 hou	rs of study in to -study time requ	tal. These hou iired for pre-st	rs include the learning time udy / review, and completing		
Charact	aristics (•	Division in Le		viii flot be eligible	e ioi evaluatio	11.		
		Ji Class /		•			☐ Instructor Professionally		
☐ Active	Learning		☑ Aided by I	СТ	☑ Applicable to	o Remote Clas	Experienced		
Course	Plan	T.							
		1st	performance VLS	ire overview for Ad		performance \ Understand th	ne lecture overview for Advanced		
		2nd	nMOS/pMOS trai	nsistors and CMOS MOS transistor and	CMOS inverter	Electronic Circuits. MOS/pMOS transistors and CMOS inverters Jnderstand nMOS/pMOS transistor and CMOS nverter operation.			
		2rd	CMOS logic circu	iits ous CMOS logic circ		CMOS logic circuits Understand CMOS logic circuits.			
1st		4th	Explain the coml	ircuits using CMOS binational circuits t IOS logic circuits.		Combinational circuits using CMOS Understand the combinational circuits that are composed of CMOS logic circuits.			
Semeste r	1st Quarter	(CMOS-based sec Explain the sequ	nposed of CMOS logic circuits. DS-based sequential circuits lain the sequential circuits that are composed			CMOS-based sequential circuits. Understand the sequential circuits that are composed of CMOS logic circuits.		
r			of CMOS logic cit			composed of (ci 105 logic cii cuits.		
r		6th	LSI manufacturii Explain topics su	rcuits.	rates, gate ion.	LSI manufactu Understand to	uring process		
r		6th	LSI manufacturii Explain topics su oxide film forma VLSI design Explain functiona	rcuits. ng process Ich as silicon substi	e description	LSI manufactu Understand to oxide film forr VLSI design Understand fu	uring process		

			Non-volatile mem Explain non-volat and operation.	ory circuits ile memory circuit	configuration	Non-volatile memory circuits Understand non-volatile memory circuit configuration and operation.			
		10th	Circuit design exe Explain circuit inp		E 1	Circuit design exc Understand circu			
		11th	Circuit design exe Explain circuit inp using SPICE.	rcises using SPIC uts and operation	E 2 verification	Circuit design exercises using SPICE 2 Understand circuit inputs and operation verification using SPICE.			
	2nd	12th	Circuit design using submission 1 Solve the problem operation verification.	ns regarding circu		Circuit design using SPICE; Assignment submission 1 Solve the problems regarding circuit inputs and operation verification using SPICE.			
	Quarter	13th	Circuit design using submission 2 Solve and submitinguts and operations.	the problems rea	arding circuit	Circuit design using SPICE; Assignment submission 2 Solve the problems regarding circuit inputs and operation verification using SPICE.			
		14th	Testing and reliab Explain coverage		stability.	Testing and reliability design Understand coverage and design for testability.			
		Summary and future trends Explain topics such as more than Moore, IoT sensor nodes, and other future development trends in VLSI technology.				Summary and future trends Understand topics such as more than Moore, IoT sensor nodes and other future development trends in VLSI technology.			
		16th	No final exam						
Evaluati	on Me	thod and	Weight (%)						
		Assignments	;					Total	
Subtotal		100	0	0	0	0	0	100	
Basic Proficiency	o O		0	0	0	0	0	0	
Specialize Proficiency			0	0	0	0	0	100	
Cross Area)	0	0	0	0	0	0	

Akashi College		Year	Year 2023		Course Title	Mathematical Informatics	
Course	Informa					г	
Course Co		5036			Course Category	<u> </u>	ed / Elective
Class For	mat	Lecture	land Flore 1	Custour-	Credits	Academi	Credit: 2
Departme	ent	Engineerin	l and Electronic g	System	Student Grade	Adv. 2nd	
Term		First Seme	ster		Classes per Wee	ek 2	
Textbook	and/or Materials	Materials v	vritten in Englis	h are distributed.			
Instructo		HAMADA Y	′ukihiro				
[1] Can r [2] Can e [3] Can e [4] Can e	explain the explain the explain the	nical book wr fundamental fundamental fundamental	s of algorithms. s of trees.				
	explain gra	ph traversal a	ilgorithms.				
Rubric			7-1111		C+		llan anneala la cont
			Ideal Level Can read a tec	hnical book	Standard Level Can read a tech	nical book	Unacceptable Level
Achievem	nent 1			ish with little use	written in Englis dictionary.		Cannot read a technical book written in English.
Achievem	nent 2		graphs sufficie		graphs.		fundamentals of graphs.
Achievem	nent 3		Can explain th of algorithms s	e fundamentals ufficiently.	Can explain the algorithms.	tundamentals (of Cannot explain the fundamentals of algorithms.
Achievem	nent 4		_	e fundamentals	Can explain the fundamentals of trees.		f Cannot explain the fundamentals of trees.
Achievem	nent 5		Can explain graph traversal algorithms sufficiently.		Can explain grapal algorithms.	oh traversal	Cannot explain graph traversal algorithms.
Assiane	ed Depar	tment Obje		icicirci y i	aigoriaiiiisi		argoritaniioi
	ng Metho						
Outline			fundamentals of	f graphs and grap	h algorithms usin	g a technical b	ook written in English.
Style		Read a tec	hnical book writ	ten in English in t	urns. Each page	is translated in	Japanese alternatively by teacher asks the student if necessary.
Notice Charact	teristics	(1) Read s (2) Write t Students v	these goals, st everal pages of wo assignment	more of classes w	k before each cla	SS.	
☑ Active	Learning		☐ Aided by IC				
<u></u>	Dlan			T	☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced
Course	Pian			T.T	☑ Applicable to	Remote Class	
			nomo	T			
			neme			Goals Can explain the	definition of a graph. Also, can
			neme hat is a graph		(Goals Can explain the explain what a	definition of a graph. Also, can graph models.
		1st W	hat is a graph	vertex, isomorphic		Goals Can explain the explain what a	definition of a graph. Also, can graph models.
		1st W 2nd Th	hat is a graph ne degree of a v		graphs (Goals Can explain the explain what a Can explain thir vertex and isom	definition of a graph. Also, can graph models. gs related to the degree of a corphic graphs. gs related to subgraphs and
	1st Quarter	1st W 2nd Th 3rd Su	hat is a graph ne degree of a v ubgraphs and de	vertex, isomorphic	graphs (Goals Can explain the explain what a can explain thir vertex and isom Can explain thir degree sequences and vertices and vertices and	definition of a graph. Also, can graph models. gs related to the degree of a lorphic graphs. gs related to subgraphs and les. gs related to connected graphs, bridges.
	1st Quarter	1st W 2nd Th 3rd St 4th Co	hat is a graph ne degree of a v ubgraphs and de	vertex, isomorphic egree sequences	graphs (Goals Can explain the explain what a can explain thir vertex and isom Can explain thir degree sequence can explain thir cut vertices and can explain con can explain con can explain con explain con explain con explain con	definition of a graph. Also, can graph models. gs related to the degree of a corphic graphs. gs related to subgraphs and es. gs related to connected graphs, bridges. pplete graphs, bipartite graphs
		1st W 2nd Th 3rd St 4th Co 5th Sp	hat is a graph ne degree of a v ubgraphs and de	vertex, isomorphic egree sequences	graphs (Goals Can explain the explain what a can explain thir vertex and isom Can explain thir degree sequence an explain thir cut vertices and hypercubes	definition of a graph. Also, can graph models. gs related to the degree of a corphic graphs. gs related to subgraphs and es. gs related to connected graphs, bridges. pplete graphs, bipartite graphs
		1st W 2nd Th 3rd St 4th Co 5th Sp 6th Di	hat is a graph ne degree of a v ubgraphs and de ponnected graphs pecial graphs	vertex, isomorphic egree sequences s, cut vertices and	graphs (Goals Can explain the explain what a can explain thir vertex and isom Can explain thir degree sequence an explain thir cut vertices and hypercubes Can explain thir Can explain thir Can explain thir Can explain algorithms	definition of a graph. Also, can graph models. gs related to the degree of a lorphic graphs. gs related to subgraphs and les. gs related to connected graphs, bridges. pplete graphs, bipartite graphs
		1st W 2nd Th 3rd St 4th Cc 5th Sp 6th Di 7th Al	hat is a graph ne degree of a v ubgraphs and de onnected graphs pecial graphs graphs gorithmic comp	vertex, isomorphic egree sequences s, cut vertices and	graphs (G	Goals Can explain the explain what a can explain thir vertex and isom Can explain thir degree sequence can explain thir cut vertices and hypercubes Can explain thir Can explain algorithms. Can explain algorithms can explain the can explain algorithms. Can explain the	definition of a graph. Also, can graph models. gs related to the degree of a lorphic graphs. gs related to subgraphs and les. gs related to connected graphs, bridges. pplete graphs, bipartite graphs gs related to digraphs. prithmic complexity and order binary search algorithm and
		1st W 2nd Th 3rd Su 4th Co 5th Sp 6th Di 7th Al 8th Se	hat is a graph ne degree of a v ubgraphs and de onnected graphs pecial graphs graphs gorithmic comp	vertex, isomorphic egree sequences s, cut vertices and elexity s and sorting algor	graphs (Graphs	Goals Can explain the explain what a can explain thir vertex and isom Can explain thir degree sequence and explain con and hypercubes Can explain thir Can explain thir Can explain thir Can explain algoritation.	definition of a graph. Also, can graph models. gs related to the degree of a orphic graphs. gs related to subgraphs and es. gs related to connected graphs, bridges. plete graphs, bipartite graphs gs related to digraphs. prithmic complexity and order binary search algorithm and rithm.
1st Semeste r		1st W 2nd Th 3rd St 4th Cc 5th Sp 6th Di 7th Al 8th Se 9th In	hat is a graph ne degree of a v ubgraphs and de onnected graphs pecial graphs graphs gorithmic comp earch algorithms troducing NP-co	vertex, isomorphic egree sequences s, cut vertices and elexity s and sorting algor	graphs (Control of the control of th	Goals Can explain the explain what a can explain what a can explain thir ertex and isom Can explain thir explain con explain thir cut vertices and hypercubes Can explain thir Can explain algoration. Can explain the pubblesort algo Can explain NP-Can explain greater the adjacency of the adjacency of the explain greater the ex	definition of a graph. Also, can graph models. ags related to the degree of a corphic graphs. ags related to subgraphs and es. ags related to connected graphs, bridges. applete graphs, bipartite graphs bigs related to digraphs. crithmic complexity and order binary search algorithm and ithm. completeness. edy algorithms. Also, can explain natrix of a graph, the adjacency
1st Semeste r	Quarter	1st W 2nd Th 3rd Su 4th Co 5th Sp 6th Di 7th Al 8th Se 9th In	hat is a graph ne degree of a valubgraphs and deconnected graphs pecial graphs graphs gorithmic compearch algorithms troducing NP-coreedy algorithms	vertex, isomorphic egree sequences s, cut vertices and elexity s and sorting algorompleteness s and representing	graphs (graphs (bridges (interpretation of the second of the secon	Goals Can explain the explain what a can explain what a can explain thireferex and isom can explain thireferex explain thireferex explain con explain con explain algoration. Can explain algoration and hypercubes can explain the cubblesort algoration. Can explain the cubblesort algoration explain NP-Can explain NP-Can explain greater adjacency mist of a graph, see the explain see the explain greater and explain greater and explain see the explain see the explain see the explain greater and explain see the explain greater and explain see the explain s	definition of a graph. Also, can graph models. gs related to the degree of a orphic graphs. gs related to subgraphs and es. gs related to connected graphs, bridges. plete graphs, bipartite graphs. gs related to digraphs. prithmic complexity and order binary search algorithm and rithm. completeness.
		1st W 2nd Th 3rd St 4th Cc 5th Sp 6th Di 7th Al 8th Se 9th In 10th Gc 11th Pr 12th Re	hat is a graph ne degree of a v ubgraphs and de ponnected graphs pecial graphs graphs gorithmic comp earch algorithms troducing NP-correctly algorithm imputer operties of tree poted trees	vertex, isomorphic egree sequences s, cut vertices and lexity s and sorting algorompleteness s and representing s	graphs (Graphs	Goals Can explain the explain what a can explain what a can explain thirdegree sequence can explain thirdegree sequence can explain con explain thirdegree sequence can explain con explain thirdegree can explain the coublesort algoing can explain NP-Can explain NP-Can explain greation. Can explain sequence can explain the can explain thirdegree can explain the can explain thirdegree can explain thirdegree can explain the can explain thirdegree can explain thirde	definition of a graph. Also, can graph models. gs related to the degree of a corphic graphs. gs related to subgraphs and es. gs related to connected graphs, bridges. plete graphs, bipartite graphs. gs related to digraphs. prithmic complexity and order binary search algorithm and rithm. completeness. edy algorithms. Also, can explain atrix of a graph, the adjacency stack and queue. fundamental properties of trees. gs related to rooted trees.
	Quarter	1st W 2nd Th 3rd St 4th Cc 5th Sp 6th Di 7th Al 8th Se 9th In 10th Gc 11th Pr 12th Re	hat is a graph ne degree of a v ubgraphs and de ponnected graphs pecial graphs graphs gorithmic comp earch algorithms troducing NP-co reedy algorithm omputer operties of tree	vertex, isomorphic egree sequences s, cut vertices and lexity s and sorting algorompleteness s and representing s	graphs (Control of the control of th	Goals Can explain the explain what a explain what a explain thin vertex and isom Can explain thin can explain con and hypercubes Can explain thin Can explain algoration. Can explain the pubblesort algorate explain NP-Can explain greathe adjacency nist of a graph, so Can explain the Can	definition of a graph. Also, can graph models. Igs related to the degree of a corphic graphs. Igs related to subgraphs and es. Igs related to connected graphs, bridges. Inplete graphs, bipartite graphs Igs related to digraphs. Igs related to digraphs and order Igs related to digraphs. Igs related to digraphs and order Igs related to digraphs. Igs related to digraphs and order Igs related to digraphs. Igs related to digraphs and order Igs related to digraphs. Igs related to digraphs and order Igs related to digraphs. Igs related to digraphs.
	Quarter	1st W 2nd Th 3rd Su 4th Co 5th Sp 6th Di 7th Al 8th Se 9th In 10th Gc 11th Pr 12th Re 13th De	hat is a graph ne degree of a v ubgraphs and de ponnected graphs pecial graphs graphs gorithmic comp earch algorithms troducing NP-correctly algorithm imputer operties of tree poted trees	vertex, isomorphic egree sequences s, cut vertices and lexity s and sorting algorompleteness s and representing s	graphs (Graphs	Goals Can explain the explain what a explain what a explain thin vertex and isom Can explain thin can explain con and hypercubes Can explain thin Can explain algoration. Can explain the pubblesort algorate explain NP-Can explain greathe adjacency nist of a graph, so Can explain the Can	definition of a graph. Also, can graph models. gs related to the degree of a corphic graphs. gs related to subgraphs and es. gs related to connected graphs, bridges. plete graphs, bipartite graphs gs related to digraphs. prithmic complexity and order binary search algorithm and rithm. completeness. edy algorithms. Also, can explain atrix of a graph, the adjacency stack and queue. fundamental properties of trees. gs related to rooted trees.

	16th	No final exam									
Evaluation Method and Weight (%)											
	Explanation when reading in turns	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total				
Subtotal	60	40	0	0	0	0	100				
Basic Proficiency	0	0	0	0	0	0	0				
Specialized Proficiency	60	40	0	0	0	0	100				
Cross Area Proficiency	0	0	0	0	0	0	0				

Akashi College			Year	2023			ourse Title	Optimization Design	
Informat	ion								
ode	5037			Course Catego	rv	Specialized / Elective			
	Lecture					,	Academic Credit: 2		
ent	Mechani		and Electronic S	System	Student Grade		Adv. 2nd		
	Second	Seme	ester		Classes per We	eek	2		
and/or Materials									
•	SHI Fen	ghui							
Obiective	es								
stand and stand and stand the explain and	learn abou can calcul concepts a practice th	ut the ate b and m ne prosign f	e knowledge a basic mathema nathematical e inciples of opti for a helical ge	nd methods for o tical formulas for xpressions of mu imal design for ge ar reducer as an	ptimization and linear and nonli lti-objective opt enetic algorithm example of opti	optima inear pi imizatio s. mal des	il design. rogrammii on. sign, and a	ng optimization techniques. apply the optimization.	
		Ic	deal Level		Standard Level			Unacceptable Level	
ent 1		U al m	Inderstand and bout the knownethods for opt	ledge and	Understand and knowledge and	d learn I metho	ds for	Do not understand and learn about the knowledge and	
ent 2		U ca m lir pı	Inderstand and alculate the ba hathematical for near and nonling or gramming o	sic ormulas for near	basic mathema linear and nonl	atical fo inear	rmulas for	Do not understand and cannot	
ent 3		ar	nd mathematic	mathematical e	express	ions of	Do not understand the concepts and mathematical expressions of multi-objective optimization		
		ge	Fully understand the idea of genetic algorithms and mathematical expressions		Fully understand the idea of genetic algorithms and mathematical expressions		d	Fully understand the idea of genetic algorithms and mathematical expressions	
		O	Can program and calculate the optimal design for a helical gear reducer Can program and optimal design for reducer		nd calculate the for a helical gear		Can program and calculate the optimal design for a helical gear reducer		
d Depart	ment Ol	oiec	ectives						
		- ,							
<u> </u>	Optimize actively As comp in the fu optimize	used outer iture. ition	d in a variety or s continue to countinue to	f fields in respons develop, the imporse, students will timization technic	se to the deman ortance of optim learn about the ques. They will a	d for hi ization concep also lea	gher perfo and optim ots and pro rn specific	ormance in mechanical systems. all design is expected to increase ocesses of optimization and	
	1		•	_				ate.	
	This cou guarante assignm	rse's eed i	s content will a in classes and reports.	mount to 90 hou the standard self-	rs of study in to study time requ	tal. The uired fo	ese hours r pre-stud	include the learning time	
eristics c	of Class /	′ Div	vision in Lea	arning					
Learning			Aided by IC	Γ	☐ Applicable to Remote Class		te Class	☐ Instructor Professionally Experienced	
Plan									
		Ther	me			Goals			
	1st	Coui	rse guidance					se content in accordance with the	
	2nd	Opti	imization conce	epts and terminol	ogy	Explair optimiz and op	n concepts zation thro timization	s, terminology, and techniques of ough examples of optimal design, and optimal design problems.	
3rd Quarter	3rd	(Mat Lear	tlab) rn the basic on	erations of Matla	h/Simulink and	olbox How to use MATI		LAB/Simulink and Optimization	
-	4th	Line	ear programmii	ng optimization (1)	An out	line of line ms and fo	ear programming optimization rmulation methods.	
	5th	Line	ar programmii	ng optimization (2)	·		and examples of its application.	
	6th				•	metho Linear	ds. ^{· ·} programn	tions of linear programming ning optimization using Matlab's	
	Information de mat materials objective stand and stand and stand and stand the complain and eate the objective of the materials objective obj	Information Information Inde 5037 Inat Lecture Int Mechanic Second Information Second Information Second Information Second Information Second Information Second Information SHI Fen Information SH	Information ode 5037 mat Lecture nt Mechanical at Engineering Second Sem and/or Materials SHI Fenghui Objectives stand and learn about the stand and can calculate the stand the concepts and replain and practice the preate the optimal design in the future of the futu	Information Information Int	Information Information Int	Information Information Index Source Catego Int Mechanical and Electronic System Student Grade Engineening Second Semester Classes per We Int Mechanical and Electronic System Student Grade Engineening Second Semester Classes per We Int Mechanical and Electronic System Students Grade Engineening Second Semester Classes per We Interest Mechanical and Electronic System Students Who Interest Mechanical Interest Mechanical Second Semester Classes per We Interest Mechanical and Electronic System Students Who Interest Mechanical Interest Mechanical Students Who Interest Mechanical	Information Information Information Information Information Information Information Information Information Into Social	Information Information Information Inde	

An overview of non-linear optimization problems and optimization techniques. Explain application examples of nonlinear programming optimization (2) 8th Nonlinear programming optimization (3) 8th Nonlinear programming optimization (2) 8th Nonlinear programming optimization (3) 8th Report 2: Multi-objective optimization of new bus produced in the contents of an optimal solution search program. Take design examples and compare them with other optimization techniques, and Powell's conjugation in the exercise. 8th Report 1: Multi-objective optimization of new bus routes (1) 1th Report 2: Optimal designs for helical gear reducers (1) 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical gear reducers. 1th Report 2: Optimal designs for helical g								
Sth Nonlinear programming optimization (2) preprocessing, optimization calculation programs, and examination of optimization results. Genetic algorithms (GA) Learn an overview for genetic algorithms and the contents of an optimal solution search program. Take design examples and compare them with other optimization techniques and learn SUMT, linear minimization techniques, and Powell's conjugate direction method. Take application examples to learn how to do multi-objective optimization of new bus routes (1) In the Report 1: Multi-objective optimization of new bus routes (2) In the Report 2: Optimal designs for helical gear reducers (1) In the Report 2: Optimal designs for helical gear reducers (1) In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 2: Optimal designs for helical gear reducer. In the Report 3: Optimal designs for helical gear reducer. In the Report 3: Optimal designs for helical gear reducer. In the Report 3: Optimal designs for helical gear reducer. In the Report 3: Optimal designs for helical gear reducer. In the Report 3: Optimal designs for helical gear reducer. In the Report 3: Optimal designs for h			7th	Nonlinear programming optimizatio	n (1)	and optimization techniques. Explain application examples of nonlinear programming in engineering and unconstrained		
Path Nonlinear programming optimization (3) Learn an overview for genetic algorithms and the contents of an optimal solution search program. Take design examples and compare them with other optimization techniques and learn SUMT, linear minimization techniques, and Powell's conjugate direction method. 10th Multi-objective optimization Report 1: Multi-objective optimization of new bus routes (1) Multi-objective optimization of new bus routes (2) Learn about the weighted method for the multi-objective optimization in the exercise. Plan a new bus route to maximize customer satisfaction and profit for the bus operator using multi-objective optimization in the exercise. Plan a new bus route to maximize customer satisfaction and profit for the bus operator using multi-objective optimization using Matlab's Optimization Toolbox. Use the gear design knowledge learned in Engineering Design and Desi			8th	Nonlinear programming optimizatio	n (2)	preprocessing, optimization calculation programs,		
10th Report 1: Multi-objective optimization of new bus routes (1) Nulti-objective optimization of new bus routes (1) Nulti-objective optimization method. Take application examples to learn how to do multi-objective optimization in the exercise.			9th	Nonlinear programming optimizatio	n (3)	Learn an overview for genetic algorithms and the contents of an optimal solution search program. Take design examples and compare them with other optimization techniques. Explain constrained optimization techniques and learn SUMT. linear minimization techniques, and		
Ath Quarter			10th	Report 1: Multi-objective optimizati	on of new bus	objective optimization method. Take application examples to learn how to do multi-objective		
12th Report 2: Optimal designs for helical gear reducers (1) Examination Exercise&Report Total			11th		on of new bus	satisfaction and profit for the bus operator using multi-objective optimization. Multi-objective		
reducers (2) Report 2: Optimal designs for helical gear reducers (3) Summary and evaluation Final exam Evaluation Method and Weight (%) Examination Examination Exercise&Report Subtotal Basic Proficiency 30 Sumination Fromote Matlab programming creation (M-files). Study the optimization results, compare them with the computation results done in this course, and recognize the importance of optimal design. Summarize and review the content learned on this course. Final exam Evaluation Method and Weight (%) Examination Exercise&Report Total 100 Basic Proficiency 30 30 60 Specialized Proficiency 10 20 30			12th	Report 2: Optimal designs for helical reducers (1)	al gear	Engineering Design and Design and Drawing, and create the optimal design for a helical gear		
14th Report 2: Optimal designs for helical gear reducers (3) Study the optimization results, compare them with the computation results done in this course, and recognize the importance of optimal design. 15th Summary and evaluation Summarize and review the content learned on this course. 16th Final exam			13th	Report 2: Optimal designs for helica reducers (2)	al gear			
Evaluation Method and Weight (%) Examination Examination Exercise&Report Subtotal Basic Proficiency 30 Specialized Proficiency 15th Summary and evaluation this course. Total Final exam 60 100 60 30 30 30 30 30 30 30 30			14th		al gear	Study the optimization results, compare them with the computation results done in this course.		
Evaluation Method and Weight (%) Examination Exercise&Report Total Subtotal 40 60 100 Basic Proficiency 30 30 60 Specialized Proficiency 10 20 30			15th	Summary and evaluation				
Examination Exercise&Report Total Subtotal 40 60 100 Basic Proficiency 30 30 60 Specialized Proficiency 10 20 30			1					
Subtotal 40 60 100 Basic Proficiency 30 30 60 Specialized Proficiency 10 20 30	Evaluat	ion Meth	od and '	Weight (%)				
Basic Proficiency 30 30 60 Specialized Proficiency 10 20 30					· ·	ort		
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	Cross Are	a Proficier	ncy	[0	10		10	

Akashi College			Year 2023			Course Title		Micromachine		
Course	Informa	tion	'		•		•			
Course Co		5038				Course Categor Credits	У	ed / Elective		
Class Forr	mat	Lecture	Mechanical and Electronic System						c Credit: 2	
Departme	ent	Engineer	ring		System	Student Grade		Adv. 2nd		
Term	and/or	Second 9	Semes	ter		Classes per We	ek	2		
Textbook Teaching										
Instructor		MATSUZ	UKA N	laoki						
(1) Under (2) Under (3) Can e. (4) Under	stand and xplain mic stand and	characteris can explair romachines can explair	n the p s from n detec	orinciples of their struct ction princip	materials and car typical semicondure to the fabricat ples of sensors and iniques. (F) and (H	uctor micromach ion process. (F) d driving principl	ińing	technique:		
Rubric										
				al Level		Standard Level			Unacceptable Level	
Achievem	ent 1		cha mat calc	terial and ca culate the p	nd the of anisotropic an accurately hysical property al orientation.	Understand the of anisotropic m calculate the ph values of crysta	nateria nysica	als and ca I property	Do not understand the characteristics of anisotropic materials and cannot calculate the physical property values of crystal orientation.	
Achievem	ent 2		acci of t	úrately exp vpical semi	and can lain the principles conductor g techniques.	Understand an the principles of semiconductor techniques.	f typic	cal [·]	Do not understand and cannot explain the principles of typical semiconductor micromachining techniques.	
Achievem	ent 3		deta			Can explain micromachines from their structure to the fabrication process.			Cannot explain micromachines detail from their structure to the fabrication process.	
				Fully understand and can accurately explain detection principles of sensors and driving principles of actuators.		Understand and can explain detection principles of sensors and driving principles of actuators.		f sensors	Do not understand and cannot explain detection principles of sensors and driving principles of actuators.	
				accurately uator design	Can apply sensor and actuator design techniques.			Cannot apply sensor and actuator design techniques.		
Assigne	d Depar	tment Ob	ojectiv	ves						
Teachin	g Metho									
Outline		sensors, in a wide techniqu	actuat e range ies and	tors, and el e of fields. I micromac	ectronic circuits us The first half of thi hine fabrication m	sing semiconduct s course will exp ethods. The seco	tor mi lain to ond h	icromachir ypical sem alf will exp	at integrate micro structures, ing technology. They are applied iconductor micromachining lain the principles of sensors used tor design techniques.	
Style					ecture-style format					
Notice		guarante assignme strength knowled	eed in o ent rep of ma ae will	classes and ports. It is r terials, and be explain	the standard self recommended tha l electronic circuits	-study time requ t students have a s. However, this	iired fo a basi courso	or pre-stu c knowled e is open t	include the learning time dy / review, and completing ge of engineering materials, o all students as the necessary	
Charact	eristics of	of Class /	Divis	sion in Le	arning	T				
☐ Active	Learning			Aided by IC	T	☐ Applicable to	o Rem	note Class	☐ Instructor Professionally Experienced	
Course	Plan									
<u> </u>	. 1011		Theme	e			Goals			
		1st			nicromachines				romachine development history	
					es of single-crystal	silicon (1)	and scaling laws. Understand the comethods and anisorystal silicon.		s. crystal structure, manufacturing nisotropic properties of single-	
	24	3rd	Physic	al propertie	es of single-crystal	silicon (2)	Unde physi	rstand the	calculation method for the ties in arbitrary crystal orientation I silicon.	
2nd	3rd Quarter	4th	Photol	ithography			Understand the principles of photolithography.			
Semeste r		5th	Film d	eposition (1)		Under chem	rstand the ical vapor	sputter, vapor deposition, and deposition methods.	
		6th	Film d	eposition (2	2)			rstand the	rmal oxidation and impurity	
		7th	Etchin	g (1)			Unde etchir	rstand liqu ng of singl	id-based isotropic and anisotropic e-crystal silicon.	
		8th	Etchin	g (2)			Understand gas-based dry-etching.			
	4th Quarter	9th	Micron	nachine fab	prication technolog	У	Unde using	rstand mic semicond	romachine fabrication processes uctor micromachining techniques.	

		10th	Sensor design	technology (1))	Understand principles.	Understand typical micro-sensors and sensing principles.			
		11th	Sensor design				Understand how to design piezoresistive pressure sensors.			
		12th	Sensor design	technology (3))	Design a p	iezoresistive pres	ssure sensor.		
		13th	Actuator desig	Actuator design technology (1)			Understand typical micro actuators and their driving principles.			
		14th Actuator design		n technology (chnology (2)		Understand how to design an electrostatic drive actuator.			
		15th	Actuator desig	n technology (3)	Design a e	Design a electrostatic drive actuator.			
		16th	Final exam							
Evaluati	on M	ethod and	Weight (%)							
		Attendance	Report					Total		
Subtotal		30	70	0	0	0	0	100		
Basic Proficienc	Basic Proficiency 0		0	0	0	0	0	0		
Specialize Proficience	Specialized Proficiency 30		70	0	0	0	0	100		
	Cross Area Proficiency 0		0	0	0	0	0	0		