Ak	ash	i College		Mecha Syste	anical a m Eng	and El ineeri	lectron ng	nic	Year		2021	L			
De	par	tment Goals													
						Class	Hours n	er Week	,					1	
Cou e	ırs	C Tul	Cours	Credit	Credit	Adv.		CI TTCCI	`	Adv.	2nd Y			Instru	Divisio n in
Cat	eg	Course Title	e Code	Туре	S	1st		2nd		1st		2nd		ctor	Learni
ory						1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		ng
Ge ne ral	Co m pu Iso	Ethics for Engineers	0001	Acade mic Credit	2			2						ITOH Hitoshi	
Ge ne ral	ry El ec tiv	Management Sciences	0002	Acade mic Credit	2	2								NAKA O Mitsuh	
Ge ne ral	e El ec tiv	Global Studies	0003	Acade mic Credit	2	2								ARAK AWA Hirono	
Ge ne ral	e El ec tiv e	Introduction to Nano Materials Design	0005	Acade mic Credit	2	2								ri NAKA NISHI Hirosh i	
Ge ne ral	El ec tiv e	Geophysics	0006	Acade mic Credit	2			2						YOKO YAMA Masah iko	
Ge ne ral	El ec tiv e	Culture and Communication	0006	Acade mic Credit	2	2								INOUE Hideto shi	
Ge ne ral	El ec tiv e	Oral English	0007	School Credit	2	2		2						HERBE RT John C.	
Ge ne ral	El ec tiv e	Overseas Training	0008	School Credit	2	2		2							
Sp eci ali ze d	Co m pu lso ry	Creative Faculty Development	0009	School Credit	2			4						NAKA NISHI Hirosh i	
Sp eci ali ze d	Co m pu lso ry	Engineering Topics for Advanced Course Students	0010	Acade mic Credit	2			2						KAND A Keiichi ,HIRAI SHI Toshih iro,NA KANIS HI Hirosh i,NOM	
Sp	Co													ÚRA Hayat o,ONI SHI Shosa ku NAKAI	
eci ali ze d	m pu lso ry	Engineering Presentation I	0011	School Credit	1	2								Yuichi, TAKED A Naho SAKAI	
Sp eci ali ze d	Co m pu lso ry	Industrial Materials	0012	Acade mic Credit	2	2								SAKAI DA Akiyos hi,KAJ IMURA Yoshih iro,TA KEDA Naho, HIRAI SHI Toshih iro	

Sp eci ali ze d		Information Processing	0013	Acade mic Credit	2	2	INOUE Kazun ari
Sp eci ali ze d	El ec tiv e	Analytical Mechanics	0014	Acade mic Credit	2	2	OGAS AWAR A Hiromi chi
Sp eci ali ze d	El ec tiv e	Inclusive Design	0015	Acade mic Credit	2	2	OTSU KA Takehi ko,AKI TA Naoshi ge,AS AO Hiroya su,IW ATA Naoki, HIRAI Yasuy uki
Sp eci ali ze d	Co m pu Iso ry	Off-Campus Practical Training	0016	School Credit	2	2 2	
Sp eci ali ze d	Co m pu lso ry	Preliminary Research Studies	0017	School Credit	4	4 4	
Sp eci ali ze d	El ec tiv e	System Control Engineering	0018	Acade mic Credit	2	2	KAMI Yasus hi
Sp eci ali ze d	El ec tiv e	Advanced Instrumentation Engineering	0019	Acade mic Credit	2	2	IWAN O Yuki
Sp eci ali ze d	El ec tiv e	Random Signal Analysis	0020	Acade mic Credit	2	2	INOUE Kazun ari
Sp eci ali ze d	El ec tiv e	Advanced Electromagnetics	0021	Acade mic Credit	2	2	KAJIM URA Yoshih iro
Sp eci ali ze d	El ec tiv e	Advanced Strength of Materials	0022	Acade mic Credit	2	2	MORIS HITA Tomo hiro
Sp eci ali ze d	El ec tiv e	Production Systems	0023	Acade mic Credit	2	2	ONISH I Shosa ku
Sp eci ali ze d	El ec tiv e	Energy Technology I	0024	Acade mic Credit	2	2	KANE DA Masay uki
Sp eci ali ze d	El ec tiv e	Information Communication Systems	0025	Acade mic Credit	2	2	TAKIT A Makot o
Sp eci ali ze d	El ec tiv e	Tribology	0026	Acade mic Credit	2	2	ABO Masay oshi
Sp eci ali ze d	El ec tiv e	Advanced Electrical Circuits	0027	Acade mic Credit	2	2	HOSO KAWA Atsuis hi

Sp eci ali ze d	El ec tiv e	Advanced Heat Transfer	0028	Acade mic Credit	2	2		KUNI MINE Kanji
Ge ne ral	El ec tiv e	Cross-Cultural Understanding	0031	School Credit	2		2	MATS UDA Yasuta ka,HE RBERT John C.
Ge ne ral	El ec tiv e	Japanese Language and Communication	0032	Acade mic Credit	2	2		KURO DA Hiden ori
Ge ne ral	El ec tiv e	Environmental Science	0047	Acade mic Credit	2	2		WATA NABE Moriyo shi,HI RAISH I Toshih
Sp eci ali ze d	Co m pu Iso ry	Engineering Presentation II	0032	School Credit	1		2	HIRAI SHI Toshih iro,ON ISHI Shosa ku
Sp eci ali ze d	Co m pu lso ry	Research Studies	0033	School Credit	8		8	
Sp eci ali ze d	El ec tiv e	Mechatro-system	0034	Acade mic Credit	2	2		SEKIM ORI Daisuk e
Sp eci ali ze d	El ec tiv e	Computational Mechanics	0035	Acade mic Credit	2	2		KUNI MINE Kanji
Sp eci ali ze d	El ec tiv e	Energy Technology II	0036	Acade mic Credit	2	2		TANA KA Seiichi
Sp eci ali ze d	El ec tiv e	Strength and Fracture of Materials	0037	Acade mic Credit	2		2	SAKAI DA Akiyos hi
Sp eci ali ze d	El ec tiv e	Optoelectronics Devices	0038	Acade mic Credit	2	2		SUYA MA Taikei
Sp eci ali ze d	El ec tiv e	Algorithms	0039	Acade mic Credit	2		2	HAMA DA Yukihir o
Sp eci ali ze d	El ec tiv e	Advanced Electronic Circuit	0040	Acade mic Credit	2	2		INOUE Kazun ari
Sp eci ali ze d	El ec tiv e	Mathematical Informatics	0041	Acade mic Credit	2	2		TSUC HIDA Shuhei
Sp eci ali ze d	El ec tiv e	Digital Circuit Design	0042	Acade mic Credit	2	2		IWAM OTO Hisash i
Sp eci ali ze d	El ec tiv e	Optimization Design	0043	Acade mic Credit	2		2	SHI Fengh ui

Sp	El			Acade			MATS	
ali	ec	Micromachine	0044	mic	2	2	UZUK A	
ze d	e			Credit			Naoki	

А	kashi Co	ollege	Year	2021			ourse Fitle	Ethics for Engineers
Course	Informa	tion						
Course Co	ode	0001			Course Catego	ry	General /	Compulsory
Class Forr	mat	Lecture			Credits		Academic	Credit: 2
Departme	ent	Mechanio Engineer	cal and Electronic ring	System	Student Grade		Adv. 1st	
Term		Second 9	Semester		Classes per We	eek	2	
Textbook								
Teaching Instructor		ITOH Hit	oshi					
Course	Objectiv	es						
(2) Under (3) Have (4) Devel understar	stand wha sufficient k op the abil nding and l	it ethical iss knowledge (ity to devis knowledge	sues engineers mof the important e effective solution of (1) to (3).	nay face in their da social systems rela ons for typical ethi	y-to-day work. ated to engineer: cal issues that e	s when ngineer	dealing wis	ineers have in response to them. Ith the above-mentioned issues. Inunter, based on the d education goal (A).
Rubric								
			Ideal Level		Standard Level			Unacceptable Level
Achievem	ent 1		Fully understa characteristics job and their responsibilities	s of an engineer's ethical	Understand the of an engineer' ethical respons	e charac s job ar	nd their	Do not fully understand the characteristics of an engineer's job and their ethical responsibilities.
Achievem	ent 2		Fully understa	and what ethical ers may face.	Understand whengineers may		al issues	Do not understand what ethical issues engineers may face.
Achievem	ent 3		Have sufficien the important related to eng	t knowledge of social systems ineers.	Have knowledg important socia to engineers.			Do not have knowledge of the important social systems related to engineers.
			Fully have the effective solut issues that en encounter.	ability to devise ions 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.
Assiane	d Depar	tment Ob	iectives					
		学習・教育目						
	g Metho		,					
Outline	<u>, </u>	The daily technolo their exp course w	gy is used by hig pertise. This resp	phly trained engine onsibility is now be pecific details of th	ers who have a ecoming more in	respons	sibility to s t, and soci	chnology. This science and ociety to use it properly based on al interest is growing, too. This ear, what problems may arise in
Style		of the cla	ill be held in a lecture style. At the end of each class, students should write and submit a summary ss content, their opinions, etc. and this will be evaluated as a small report. In for this course is Omota.					
Notice		guarante assignme accidents the class	urse's content will amount to 90 hours of study in total. These hours include the learning timed in classes and the standard self-study time required for pre-study / review, and completent reports. The class will use videos, newspaper articles. etc., and take many examples frow and corporate morals. Reference materials and other materials are introduced as approprises. Therefore, we would like students to show interest in areas other than their specialty fields who miss 1/3 or more of classes will not be eligible for a passing grade.					
Charact	eristics o	•	Division in Le					
	Learning	/	☐ Aided by I		☐ Applicable t	o Domo	to Class	☐ Instructor Professionally
Active	Learning		□ Alded by I		П Арріісавіе (.o Remo	ne class	Experienced
Course	Plan							
200.00			Theme			Goals		
		1st	Why engineering Why is it necessa engineers to lear between engineer social backgroun by the engineeri	g ethics? ary for those who a rn ethics? Clarify the ers and ethics throud, the codes of eth ng academic societ n their significance	ne links ugh today's nics established ties, etc., and	Unders	stand the I based on t f ethics.	inks between engineers and oday's social background and the
2nd Semeste r	3rd Quarter	2nd	Deal with the spathe most famous discuss the decise executives in the		nger accident, ng ethics, and engineers and		characteristics and relationships made by the engineers and	
		3rd	Following the pro Challenger accid responsibilities e	e Challenger disast evious class, use th ent as a guide and ngineers have for i management fund	ne case of the consider what making	Understand the responsibilities and abilities required of engineers for organization risk management.		

Cross Area	Proficiend	СУ	0	0		0	
Specialized		•	0	0		0	
Basic Profici			60	40	100		
Subtotal			60	40	100		
0.1			Final Report		rts & Presentation Total		
Evaluation	n Meth	od and V	Veight (%)				
		-	No final exam				
		15th	The scope of engineering ethics New technology developments by e had a variety of impacts in sectors of information society and medical car Consider the sort of relation that en have to ethics in these other areas.	such as e.	Understand the reand modern socies should be.	elationship between engineers ety and what their place in it	
		14th	Universal design Confirm that there is a political aspetechnology development that gives power struggles and discrimination, universal design is an attempt to describe a position of the confirmation.	birth to new whereas		oncept of universal design and ssary for achieving it.	
		13th	The Roppongi Hills revolving door a Based on the previous class, discus engineers also have their own cultu engineers, and that it is important t knowledge to overcome the probler from this.	how re as to pass down	technology effect	n order to understand and use ively, it is necessary to properly ommunicate technology ideas.	
I I	th uarter	12th	The Roppongi Hills revolving door a Introduces the activities of the Door which took place after the revolving accident, and discuss the ideas and failure studies and topics such as Herisk management.	r Project, door significance of	Acquire knowledge of failure studies and Heinrich's law.		
	11th a		The Bhopal disaster 2 Based on the previous class, examine that there is a need for engineers to account that technology developme related to the interaction between social conditions, culture, history, a etc., that surround it.	take into nt is deeply	Deepen understanding of the previous class and learn effective methods for overseas industrial activities.		
		10th	The Bhopal disaster 1 Use the agricultural chemicals facto Bhopal, India—the biggest industria history—as an example to discuss t increasing problems associated with industrial activities as globalization	l accident in he further n overseas	Acquire knowledgindustrial activitie	ge of the issues faced in overseas is.	
		9th	Intellectual properties Confirm the significance of the pate and other systems for technology d and examine the issues, etc., facing accompany information technology etc.	evelopment, them that	Acquire knowledge of intellectual property rights and understand their significance in manufacturing.		
		8th	Product Liability Act Review the details of the Product Li Act—which is said to be the most re engineers—and discuss that it is im engineers to establish it as a manuf belief.	knowledge of the Product secome able to use it as a slief.			
	7th ()		Whistleblowing 2 Following the previous class, deal we whistleblowing. An increasing number companies have established help depart of their efforts to enhance their systems. Examine this trend's signiful relationship between organizations individuals.	eer of esks, etc. as r compliance ficance in the		needs to be kept in mind to ganizational behavior.	
		6th	Whistleblowing 1 Discuss the purpose of the recently whistleblower protection system, cr current laws, and the relationship b system and engineers.	iticisms of the	Acquire knowledg protection system	ge of the whistleblower n, and understand its issues.	
		5th	The Tokaimura JCO criticality accide Following the previous class, use th criticality accident to discuss group which collective organizations are p how technicians should deal with it safety and quality.	e JCO thinking, rone to, and	Learn the characteristics of group thinking and the abilities needed to deal with it and secure safety.		
		4th	The Tokaimura JCO criticality accide Use the JCO criticality accident as a consider the significance of improve that have supported the Japanese r industry, the challenges facing then engineers should engage with them	n example to ement activities nanufacturing n, and how	Understand the s improvement acti		

Α	kashi Co	olleae	Year	2021			urse	Global Studies	
Course							itle		
Course Co		0003			Course Categor	v (General	/ Elective	
Class Forr		Lecture			Credits			c Credit: 2	
Departme	ent	Mechanica Engineerir	and Electronic	System	Student Grade		dv. 1st		
Term		First Seme				Classes per Week 2			
Textbook Teaching		教科書:渋 一他編『グ	谷淳一・本田量/ ローバル・コミ <u>-</u>	ス編『21世紀国際や ユニケーション―キ・	社会を考える 多層 - ワードで読み解・	的な世界く生命・	を読み解 文化・社	军く38章』旬報社/参考図書 伊藤陽 会』ミネルヴァ書房	
Instructor	-	ARAKAWA	Hironori						
Course									
(2)流動化 (3)21世紀 (4)民族そ (5)越境す (6) 国際関 ゼンテーシ	する現在の と新しい国 して国家の る社会の基 M係に関する ションや論な	国際情勢が理り 関際社会の行方 概念が理解でる 礎的な理解が ら自らの学びを との作成を行う	解できる(学習・ についての理解・ き、説明ができる できる (学習・寿 経て、興味を持っ ことができる(**	持つことができる 教育到達目標(A) 考察ができる(学習 (学習・教育到達目 (方門遺を深く振り) うた間・教育到達目を深くない。 学習・教育の ができる(学習) できる(学習)	(B))。 習・教育到達目標 目標(A)(B))。 (B))。 下げ、フィールド「 (B)(E)(H)	(A) (B ア ワークも;)。)).	究を遂行し、その結果に基づき、プレ	
Rubiic			理想的な到達レ	ベルの日安	標準的な到達レイ	ベルの日5			
				・ マンジニアとして	世界で活躍するコ			世界で活躍するエンジニアとして	
評価項目1			の国際的資質を	持つことができる 	の国際的資質を排 きる。	寺つことだ	がほぼで	の国際的資質を持つことができな い。	
評価項目2			できる。	の国際情勢が理解	流動化する現在の 理解できる。	の国際情勢	勢がほぼ	流動化する現在の国際情勢が理解 できない。	
評価項目3			21世紀と新しいついての理解・	国際社会の行方に 考察が十分できる	21世紀と新しい ついての理解・ [‡] 。			21世紀と新しい国際社会の行方についての理解・考察ができない。	
Assigne	d Depar	tment Obj	ectives						
			票 (B) 学習・教育	目標 (C) 学習・教育	育目標 (E) 学習・勃	教育目標	(H)		
Teachin	g Metho				A 51111				
Outline		が国際社会者として必	に関するトピック 要なグローバル~	フを選んで、主体的 <i>(</i>	こ調査・発表し、 印識を身につけ、	討論する	ことを中	考え方について理解したのち、学生 心とした授業である。技術者、研究 らの将来を踏まえた上での考え方や	
Style		関する講義 ワーク・調 には論文作 評価の対象	参考書を使うが、その都度起こる世界の諸問題もテーマとして発表を主体とした授業とする。国際社会情勢 義のあと、各学生が興味を持った教科書・参考書に沿ったテーマを選び、深く掘り下げ、できればフィール 調査(オンラインでも構わない)も含めた研究を行う。その研究の結果をプレゼンテーション発表し、最終 作成を義務づける。ブレゼンテーションにおいては、自らの調査とともに、教科書や授業で出た言説の解釈 象となるため、各書籍を読み込む予習が必須である。						
Notice			、授業で保証する学習時間と予習・復習及び、プレゼンテーション・課題論文作成に必要な標準的な計が、90時間に相当する学習内容である。グローバルスタディーズはまさに社会情勢によって刻々である。日頃から時事問題への関心を持ちながら授業に臨むこと。各発表者は担当するトピックのレミを要があり、聴衆はそのプレンションに対する質問が評価の対象となる。そのため各発表に関するには必ず目を通しておくこと。主体的な参加態度が必須となる。 1象としない欠席条件(割合) 1/3以上の欠課					論文作成に必要な標準的な自己学習 に社会情勢によって刻々と変化する は担当するトピックのレジュメを作 。そのため各発表に関する教科書の	
Charact	eristics		Division in Le		7 19-11				
☑ Active			☑ Aided by IC		☑ Applicable to	o Remot	e Class	☐ Instructor Professionally Experienced	
Course	Plan	T T							
		2	heme ブローバルスタディ 『際社会はいかに	ィーズとは して作られるのか、	〒1981日 15 TE-A 14	Goals 普段学習	している		
		t _c	ば必要なのかを DG s とSDG s			新たな国	 際的な持		
			際協調について 代国際政治経済 済学と国際会融		学び、市場や法	工業と密	接に関連	会における役割についても理解する。 重する国際政治・国際経済の基本的な	
	1st Quarter	第 安	度を踏まえ検討 全保障・国際協	する。				理解する。 ――――――――――――――――――――――――――――――――――――	
r	2.3.30	C	ド、国家と国際と(国際社会学(移民)	の関係について検討	、考察する。	ケ、表現アメリカ]ッパにおける移民の現状を理解し、	
		7	、事例に基づい 認識を深める。	て各学生が発表し、 				こついて、自らの考えが持てる。	
		6th 原	際社会学(移民 ソ連・ドイツ・- に向けての討論	イギリスにおける移 生が発表する。その	民の諸問題を各 問題点、これか	難民問題も含め、諸国で起きている諸問題の 、国家と国民の関係について考察ができる。		諸国で起きている諸問題の理解をし 関係について考察ができる。	

Part									
おいけらい 中国・台湾・朝鮮半島 における政治 地理的に日本に近い東アジアの諸問題を地政学的にも理解する。 地理的にも近い、日本との関係についても名学生が考察 を行い、対論を実施する。 地理的にも近い、東南アジアにおける諸問題② 東南アジア・オセアニアを全の調査なども含めて各学生が発表する。 でジアの民族問題や、「幸せの国ブータン」おける幸福 東京ジア・ストリーター・アンストリーター・アンストリーター・カンボジアの事例を握り下げて各学 東京ジアでありの現状について、実施教育 東京ジアでありの現状について、実施教育 東京ジアでありの現状について、実施教育 東京 東京 東京 東京 東京 東京 東京 東			7th	グローバルスタディ 題に関する諸学生の わる課題レポートの	ーズにおける言説の 理解度を問う。各	学生の発表に関	を知り、それを文章	こおいて、まず何に 章によって表現をす	興味があるのか る大切さを理解
Standard				東アジア地域(中国・歴史・経済的な諸 理的にも近い、日本	・台湾・朝鮮半島 問題に関して学生 との関係について	が発表する。地		い東アジアの諸問題	を地政学的にも
Pubmin			9th	東南アジア・オセア	ニアにおける諸問題	題に関し、実際	本校の学術交流も多般的に理解する。	多い、東南アジア・	オセアニアを全
11th ネパール・タイ・カンボジアの事例を掘り下げて各学 上生が発表し、開発の是非について討論する。			10th	沖縄から考える国際 ジアの民族問題や、 度調査の現状につい	社会についての考り 「幸せの国ブータ) て、実施教員が実施	ン」おける幸福 施した実地調査	理解する。ブータン	ンを含めた南アジア	
2nd Quarter 12th 南アジアにおけるジェンダー・アフリカ・ラテンアメリカにおける開発の最新事例から、国際的な開発はどのようなものであるべきかを考察する。実際に日本の政府開発組織である、JICAについての理解も深める。 SDGsの中でも貧困の解消は喫緊の事案であることを理解し、その問題解決のために各学生が工業人として何ができるのかということを考えることができる。 13th 21世紀と新しい国際社会の行方① プローバリズム・ローカリズム・プローカリズムについて、最新の言説を提示し、その検討を発表・討論を通じて行う。 グローバリズム・ローカリズム・グローカリズムについての理解をし、具体的な企業の動き、社会運動に関する知識を有することができる。 14th 21世紀と新しい国際社会の行方② 現代の国際社会の行方② 現代の国際社会の行方③ 環境配慮行動の現実を環境先進国の現状から知り、国際的なテロの実態、現状についての理解ができる。その抑止のために諸国がどのような対策を実施しているのかについての理解ができる。 国際的なテロの実態、現状についての理解ができる。その抑止のために諸国がどのような対策を実施しているのかについての理解ができる。これまでに出た、グローバルスタディーズの諸言説を理解する。工業人として国際的諸問題にどう対処するのかについての意見を持つことができる。 15th 21世紀と新しい国際社会の行方③ 環境完進国の現状から知り、国際的に取り巻く環境の問題と工業人との関わりを考察する。工業人として国際的諸問題にどう対処するのかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。 本れまでに出た、グローバルスタディーズの諸言説を理解する。工業人として国際的諸問題にどう対処するのかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての運解ができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての意見を持つことができる。のかについての理解ができる。これまでに出た、グローバルスタディーズの諸に関係を表しているのがについての理解ができる。これまでに出た。グローバルスタディーズの関係ができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出たができる。これまでに出ている。これまでに出ている。これまでに出ている。これまでに出ている。これまでに出ている。これまでに出ている。これまではいるのでは、これまではいるのではいるのではいるのではいるのではいるのではいるのではいるのではいるの			11th	ネパール・タイ・カ	ンボジアの事例を	掘り下げて各学 する。	南アジアであった		
13th グローパル化とその逆説について、最新の言説を提示し、その検討を発表・討論を通じて行う。			12th	南アジアにおけるジ リカにおける開発の のようなものである	エンダー・アフリア 最新事例から、国際 べきかを考察する。	。実際に日本の	理解し、その問題的	解決のために各学生	が工業人として
14th 現代の国際社会におけるテロリズムの論点について、			13th	グローバル化とその	逆説について、最		いての理解をし、具	具体的な企業の動き	
15th 環境配慮行動の現実を環境先進国の現状から知り、国際的に取り巻く環境の問題と工業人との関わりを考察 短解する。工業人として国際的諸問題にどう対処する 加末			14th	現代の国際社会にお	けるテロリズムの	論点について、 察を行う。	その抑止のために話	者国がどのような対	
Evaluation Method and Weight (%) 課題・試験 発表 相互評価 態度(出席点および授業での質問) ポートフォリオ その他・小テスト Total Subtotal 50 20 0 20 0 10 100 基礎的能力 25 10 0 20 0 0 55 専門的能力 15 0 0 0 0 10 25			15th	環境配慮行動の現実 際的に取り巻く環境	を環境先進国の現	の問わりた老家	理解する。工業人と	として国際的諸問題	にどう対処する
課題・試験 発表 相互評価 態度(出席点および授業での質問) ポートフォリオ ト その他・小テスト Total Subtotal 50 20 0 20 0 10 100 基礎的能力 25 10 0 20 0 0 55 専門的能力 15 0 0 0 0 10 25							期末レポートととも	5に期末試験を課す	-
Subtotal 50 20 0 20 0 10 基礎的能力 25 10 0 20 0 0 0 専門的能力 15 0 0 0 0 10 25	Evaluati	on Met	thod and V	Veight (%)	1	T	1	T	
基礎的能力 25 10 0 20 0 0 55 専門的能力 15 0 0 0 0 10 25		慧	果題・試験	発表	相互評価	態度(出席点およ び授業での質問)	ポートフォリオ	その他・小テス ト	Total
専門的能力 15 0 0 0 0 0 10 25	Subtotal		-	20	0	-	0	10	
· · · · · · · · · · · · · · · · · · ·								0	
分野横断的能力 10 10 0 0 0 20 20					1				
	分野横断的	能力 1	0	10	0	0	0	0	20

Д	Akashi Co	ollege	Year	2021			Introduction to Nano Materials Design	
Course	Informa	tion						
Course Co		0005			Course Category	,		
Class For	mat	Lecture		Contain	Credits	Academic	Credit: 2	
Departme	ent	Mechanica Engineerir	al and Electronic ng	System	Student Grade	Adv. 1st		
Term		First Seme	ester		Classes per Wee	ek 2		
Textbook Teaching	and/or Materials	配布プリン	/ 					
Instructo		NAKANISI	HI Hiroshi					
Course	Objectiv	es						
(評価項目 (評価項目 (評価項目	コク) 湢習を	を诵して量子ナ	1学の埋解を深め、	/マテリアルデザイ) 演義を通して他者(fインを応用・展開	にわかりやすく伝え	ぇるブレゼンテー・	ションスキルを養う。(D、E)	
Rubric								
<u> </u>			理想的な到達レイ		標準的な到達レベ		未到達レベルの目安	
評価項目1	_		を説明できる。	デザインの方法論 	マテリアルの特性 づいていることを		マテリアルの特性が量子力学に基づいていることを説明できない。	
評価項目2	2		量子力学に必要が を他者に教える。 意味するところ	な基礎的演算方法 ことができ、その を説明できる。	量子力学に必要な 力で行うことがで	量子力学に必要な基礎的演算を独 力で行うことができない。		
評価項目3	3		ナノマテリアルラらの専門分野へが	デザイン手法を自 応用展開できる。	自らの専門分野^ ルデザイン手法応 え、提示すること	ナノマテリアルデザイン手法応用 の可能性を考えることができない 。		
		tment Obj						
		学習・教育目標	票 (E)					
Teachin	ng Metho							
Outline		それを用い	ハてマテリアルの成	さえるマテリアルな さする。マテリアルなり立ち、性質(物 対料をデザインする 対料をデザインする	生)か如何に解きり	別かされるかを学ん	インを学ぶことを通して科学的思考 を記述する量子力学の概要を学び、 ぶ。最後に、様々な工学分野におい まについて学ぶ。	
Style		講義により目を学習す	、全体の概要説明 る。さらに自らの	と必要な前提知識な 解法を他者に説明で	を取得する。その役 することにより、野	後、自ら考え、手を 理解度を深化させる	を動かし計算する演習を通して各項 る。質疑応答を通じて取得した知識 リアルデザイン手法を習得する。	
Notice		本科目は、90時間に相		・	复習及び課題レポー		票準的な自己学習時間の総計が、	
Charact	teristics (Division in Le		> \pu/\			
☑ Active			☐ Aided by IC		☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced	
Cauras	Dlan							
Course	Pian	-	heme		1,	Goals		
		1st 量		 ⊭) ニュートンカ学と比!	並しわがころの		トン力学における運動の捉え方の違ができる	
			i異を学ぶ。 ii子力学概論(後)	半) 5動の記述された学		量子力学における運動状態の表現方法を説明す		
ı		2rd =	 量子力学の基礎 1	重動の記述方法を学 L (オペレーター代数に オペレーター代数に	数)	ができる。 演算子の基本ルー る。	ルを習得し、演算を行うことができ	
	1st	量 4th 量	量子力学の基礎 2		ンガー方程式)		関係を説明できる。	
	Quarter		- 力柱以で手か。 量子力学の基礎 3) / / 				
		5th		3 (父揆関係I:座 6関係を学ぶ	≦標と運動量) │	座標と運動量の演	 算子を含む交換関係を計算できる。	
1st		Stri 国	整標と運動量の交換 量子力学の基礎 4	対関係を学ぶ。 A (交換関係II:角		角運動量演算子を	算子を含む交換関係を計算できる。 知り、角運動量演算子を含む交換関	
1st Semeste r		Stri 内容 Carter And	E標と運動量の交換	対 4 (交換関係II:允 で換関係を学ぶ。 5 (エルミート演	角運動量) (第子) (角運動量演算子を 係を計算できる。	知り、角運動量演算子を含む交換関の性質を知り、物理量の期待値の時	
Semeste		6th	整標と運動量の交換量子力学の基礎 4 計運動量に関するな量子力学の基礎 5 上ルミート演算子に 量子力学の基礎 6	換関係を学ぶ。	角運動量) (第子) (第子) (第子) (第一条子) (第一条子) (第一条子) (第一条子子) (第一条子) (第一条子子) (第一条子) (第一条子子) (第一条子) (第一条子子) (第一条子)	角運動量演算子を 係を計算できる。 エルミート演算子 間発展(変化)を	知り、角運動量演算子を含む交換関の性質を知り、物理量の期待値の時	
Semeste		Stri 四	整標と運動量の交換量子力学の基礎 4 負運動量に関する多量子力学の基礎 5 ニルミート演算子に 量子力学の基礎 6 サ戸型ポテンシャルズ。 量子力学の基礎 7	製関係を学ぶ。 4 (交換関係II: f 交換関係を学ぶ。 5 (エルミート演 こついて学ぶ。 6 (井戸型ポテン しに束縛された粒子の 7 (一次元散乱問題	角運動量) 算子) シャル) の量子状態を学 、トンネル効果	角運動量演算子を係を計算できる。 エルミート演算子間発展(変化)を サ戸型ポテンシャを計算できる。	知り、角運動量演算子を含む交換関 の性質を知り、物理量の期待値の時 計算できる。	
Semeste	2nd	Stri	整標と運動量の交換量子力学の基礎 4 計運動量に関するを 量子力学の基礎 5 エルミート演算子に 量子力学の基礎 6 計戸型ポテンシャル である。 量子力学の基礎 7 対乱問題について等 量子力学の基礎 8	製関係を学ぶ。 は (交換関係II: f を換関係を学ぶ。 は (エルミート演 こついて学ぶ。 ら (井戸型ポテン しに束縛された粒子の で (一次元散乱問題 で (一次元散乱問題 で (一次元散乱問題 で (調和振動子)	角運動量) () () () () () () () () () (角運動量演算子を係を計算できる。 エルミート演算子間発展 (変化)を計算できる。 井戸型ポテンシャを計算できる。 矩形ポテンシャルる。	知り、角運動量演算子を含む交換関の性質を知り、物理量の期待値の時計算できる。 ルに閉じ込められた粒子の量子状態	
Semeste	2nd Quarter	Stri	整標と運動量の交換量子力学の基礎 4 負運動量に関するな量子力学の基礎 5 上ルミート演算子に量子力学の基礎 6 サ戸型ポテンシャルで。 量子力学の基礎 7 量子力学の基礎 7	製関係を学ぶ。 4 (交換関係II: for the part of the	角運動量) 算子) シャル) の量子状態を学 、トンネル効果 を知る。	角運動量演算子を係を計算できる。 エルミート演算子間発展(変化)を 井戸型ポテンシャ を計算できる。 矩形ポテンシャル る。 調和ポテンシャル 計算できる。	知り、角運動量演算子を含む交換関の性質を知り、物理量の期待値の時計算できる。 ルに閉じ込められた粒子の量子状態を透過するトンネル確率を計算でき	

		13th	原ス期	子の電子配置 〈ピンの存在おより 引律を学ぶ。	2 (スピン、量子 び量子統計の概論を	子統計) ビ学び、元素の周	 元素の周期律を量子力学に基づいて説明できる。 				
		14th	物 物	別質の凝集機構(別質の凝集機構を	イオン結合、共有絹 学ぶ。	告合、金属結合)	物質の凝集機構を量子力学に基づいて説明できる。				
		15th	密密	密度汎関数理論、 密度汎関数理論お 3よびそれを用い	計算機マテリアルラ よびそれを基にした たナノマテリアルラ	デザイン -第一原理計算、 デザインを学ぶ。	ナノマテリアルデ	ザイン手法の原理な	を説明できる。		
		16th	其	末試験			演習を独力で解くる 領域への応用展開	ことができる事をG を考えることができ	確認する。自らの きる。		
Evaluati	ion M	ethod a	nd W	eight (%)							
		試験		演習・発表	相互評価	態度	ポートフォリオ	その他	Total		
Subtotal		70		30	0	0	0	0	100		
基礎的能力]	0		0	0	0	0	0	0		
専門的能力					0	0	0	80			
分野横断的]能力	10		10	0	0	0	0	20		

А	kashi Co	ollege	,	Year	2021			ourse Title	Geophysics	
Course	Informat	tion								
Course Co	ode	0006				Course Categor	ry	General /	Elective	
Class Forr	mat	Lecture				Credits		Academic	Credit: 2	
Departme	ent	Enginee	ring	Electronic	System	Student Grade		Adv. 1st		
Term		Second 9	Semester	<u>r</u>		Classes per We	ek	2		
Textbook Teaching	Matérials									
Instructor			MA Masa	hiko						
Course	Objectiv	es								
seismic wobservation (2) Learn described (3) Under topograph volcanic e	vaves, geore on equipm about how in (1). By rstand the ny. By doire eruptions. (nagnetism ent. (D) v the Earth doing this, concept of ng so, learn (A)	thermal 's internal comprel plate tec the basi	flow, etc al structur hensively ctonics and ic knowled	e.) and understand re, surface phenor understand the s d the relationship dge for considerin	I their meaning. mena, and histo olid Earth syster between them g the global env	Also un ry have m. (D) and the vironme	nderstand been inte moveme nt and dis	elated to the solid Earth (gravity, the basic principles of erpreted using the observations of the Earth's layers and easters such as earthquakes and chieve these goals.	
Rubric										
			Ideal I	Level		Standard Level			Unacceptable Level	
Achievem	ent 1		mećha physic	cal proper	nd the estimating the ties of objects vation results.	Understand the estimating the properties of olobservation res	physica bjects fi	ıl	Do not understand the mechanism for estimating the physical properties of objects from the observation results.	
Achievem	ent 2		obsérv modei	vation evi	d what kinds of dence the tanding of the ted on.	Understand whobservation evi modern unders Earth is estima	idence t standing	he	Do not understand what kinds of observation evidence the modern understanding of the Earth is estimated on.	
Achievem	ent 3		pheno eartho erupti	earthquakes and volcanic volcani			uakes a	ough the	Do not understand natural phenomena such as earthquakes and volcanic eruptions through the concept called plate tectonics.	
Assigne	d Depart	tment Ob	jective	:S						
		学習・教育目	_							
	g Metho		, ,							
Outline	<u>,</u>	The courcurrently quantities of the many physical equipme	urse will have lectures on how the structure and properties of the Earth (mainly the solid Earth) are thy understood. Since the purpose of geophysics is to capture the Earth quantitatively using physical cies such as gravity and heat, the main purpose of this course is to understand the physical properties materials that make up the Earth, and explain the basic properties and observation techniques of each all quantity. It will also explain the laws of physics and basic structures used in the observation nent. It will be taught by a faculty member who is investigating the magnetic properties of deep-sea and obtained in core drilling at Academia Sinica in Taiwan.							
Style		Classes	are held i	in a lectui						
Notice		guarante	burse's content will amount to 90 hours of study in total. These hours include the learning time nated in classes and the standard self-study time required for pre-study / review, and completing ment reports. The course plan may change. Lessons are serial, not standalone. Into who miss 1/3 or more of classes will not be eligible for a passing grade.							
Charact	eristics o	of Class /	Divisio	n in Lea	arning					
□ Active	Learning		□ Aio	ded by IC	Т	☐ Applicable t	o Remo	te Class	☐ Instructor Professionally Experienced	
Course	Dlan									
Course	i iai i		Theme				Goals			
		130	Course g Earth (1) Explain, overview Introduc) as guidar v.	The shape and s nce, the course po ption of the Earth les.	licy and	Unders of "geo develo	physics" a	role played by the academic field and the role that physics lys in understanding the Earth's e.	
2nd Semeste r	3rd Quarter	ZIIU	Explain t shapes for and also	the definit or the Ear	re of the Earth (2) ions of the currer rth (Earth ellipsoid the basics of posi	itly recognized d and geoid),	Understand the basics of positioning using geometry.		basics of positioning using	
		3rd	Earth's n	nass and	ity means, by sho density obtained neaning of gravity	by using it.	structu		to estimate the Earth's internal ne laws and observed values of on it.	
		4th	with grav	the conce	pt of isostasy and introduce exampl		Understand the concept of isostasy and the characteristics of the Earth's gravity that is relate to it.			

6th interior, which has been estimated mainly using seismic wave analysis. Survey and the method for estimating the Einterior structure that uses it.	n		
6th Introduce the larger structure of the Earth's interior, which has been estimated mainly using seismic wave analysis. Onderstand the principles of a seismic rena survey and the method for estimating the interior structure that uses it.	1		
The interior structure of the Forth (2)	Understand the principles of a seismic refraction survey and the method for estimating the Earth's interior structure that uses it.		
7th The interior structure of the Earth (2) Introduce the subterranean structure of the Earth's surface layer, which has been estimated mainly using seismic wave analysis. Understand the principles of a seismic reflesurvey and the method for estimating the subterranean part's structure that uses it.			
8th Earth heat Explain what is the source of heat inside the Earth, and show the calorimetric distribution on the surface layer of the Earth. Understand the meaning of heat in physics the state of the Earth's interior that can be estimated from the calorimetric distribution the its surface.			
9th Geomagnetism Explain the magnetic distribution on the Earth's surface and how geomagnetism was created. Furthermore, explain magnetic anomalies. Understand the causes of geomagnetism meaning and the cause and the cau	n?"		
Rock magnetism and paleomagnetism Explain the mechanism for rocks becoming magnetized and introduce the magnetism shifts from the past that have been investigated using it. Understand the mechanism that records pageomagnetic information in rocks.	st		
Continental drift 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. Understand the original information for "continental drift theory," its interpretations how to estimate the continental drift using observation data.	, and current		
4th Quarter 12th The spreading of the seafloor Explain seafloor's topography and underground structure and the relationship between magnetic anomaly distribution in the ocean and the theory of seafloor spreading. The spreading of the seafloor Explain seafloor topography and underground structure and the relationship between magnetic anomaly distribution in the ocean and the theory of seafloor spreading.			
Plate tectonics (1) Explain the concept and movement of plates and the shape their boundaries as the basis for plate tectonics. Understand the original meaning of the concalled plate tectonics and its difference from continental drift theory.	cept 1		
Plate tectonics (2) Use plate tectonics to explain the movement of the Earth's layers (earthquakes, volcanic activity, orogeny, etc.) Understand how natural phenomena such a earthquakes and volcanic activities can be explained with plate motions.	S		
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.	the		
16th Final exam			
Evaluation Method and Weight (%)			
Exercise Examination Total			
Subtotal 30 70 100			
Basic Proficiency 30 70 100			
Specialized Proficiency 0 0			
Cross Area Proficiency 0 0			

А	kashi Co	llege		Year	2021			ourse Title	Culture and Communication
Course	Informat	tion			•		•		
Course Co	ode	0006				Course Catego	ry	General	/ Elective
Class Forr	mat	Lectur	e			Credits		Academi	c Credit: 2
Departme	ent	Mecha Engine		and Electronic	System	Student Grade		Adv. 1st	
Term		First S	emes	ster		Classes per We	ek	2	
Textbook Teaching									
Instructor		INOUE	Hide	etoshi					
	Objectiv								
(1) Deepe (2) Impro (3) Becon	en underst ove one's a ne proficie	anding of bility to f nt with T	f diffe follow OEIC	erent cultures. English pronu format questi	inciation and rhythons.	nm.			
Rubric									
]	Ideal Level		Standard Level			Unacceptable Level
Achievem	ent 1		I	Fully deepened of different cul	d understanding tures.	Deepened unde different cultur	erstand es.	ing of	Did not deepen understanding of different cultures.
Achievem	ent 2			Fully gained Er pronunciation	and rhythm.	Gained English and rhythm.	pronur	nciation	Did not gain English pronunciation or rhythm.
Achievem	ent 3		<u>!</u>	Fully became p TOEIC format	proficient with questions.	Became profici format question	ent witl ns.	h TOEIC	Did not become proficient with TOEIC format questions.
	d Depart								
学習・教育	舒目標 (A) 🖺	学習・教育	目標	(B) 学習・教育	目標 (E)				
Teachin	g Metho	<u>d</u>							
Outline		thougl comm skills t	nts ar unica oy uno	nd values of th tion. Taking th derstanding th	e people who spea ne UK and busines:	ak it. Therefore, s English as an e commonalities v	these e example vith Jap	exercises e, the goa an. The l	ral learning aspects, such as the will cover language, culture, and al is to improve students' English level of English to be used in this
Style - Look up imp				nportant word	pals, students will is in advance and o gs learned in the c	understand then	n in End	glish.	mpanying CD until able to recite it.
- Ensure a - Reasses presentat			sessn	nents will not ns without rea	ration time for assi be permitted if stu sons such as abse more of classes v	idents are late o ince due to susp	ension,	etc.	ne class and unable to work or give
Charact	eristics o	of Class	s / Division in Learning						
□ Active	Learning			☐ Aided by IO	CT CT	☐ Applicable t	o Remo	ote Class	☐ Instructor Professionally Experienced
Course	Plan								
			The	eme			Goals		
		1st	Exp	st semester cla plain an overvi	ass guidance ew of the first sen d evaluation metho	nester classes,			
		2nd	Che List cor	eck In and Wo	ork Out oding comprehensi the counter		Unders	stand con	oversations at the counter.
		3rd	List		eather Be Like? Iding comprehensi	on about the	Unders	stand the	weather.
1st Quarter	4th	List	ondon withou tening and rea ndon buses apter 3: Groce	iding comprehensi	on about	Unders	stand Lor	ndon buses.	
1st Semeste r	Semeste - -	5th	List rail	ck to the Futur tening and rea lways apter 4: Cooki	iding comprehensi	on about	Unders	stand rail	ways.
		6th	List	op-'n'-Chat tening and rea opping apter 5: Eating	nding comprehensi	on about	Unders	stand sho	opping.
		7th	Firs	st semester ov	erall review		Reviev	v the topi	ics covered in the first semester.
		8th	_	dterm exam					
	2nd	9th	List	re Than Just a tening and rea ncept of post o apter 6: Shopp	idina comprehensi	on about the	Unders	stand the	concept of post offices.
Quarter	10th	Off	concept of post offices Chapter 6: Shopping for Clothing Off the Beaten Path Listening and reading about tourism Chapter 7: Housing				Understand tourism.		

		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 Method and Weight (%)			l Weight (%)			
	Examination			Short Tests	Other	Total
Subtotal	Subtotal 80		20	0	100	
Basic Proficiency 80		20	0	100		
Specialized Proficiency 0 0			<u> </u>	0	0	0
Cross Area Proficiency 0				0	0	0

А	kashi Co	llege	Year	2021		Course Title	Overseas Training		
Course	Informa	tion							
Course Co	ode	0008			Course Categor	General ,	/ Elective		
Class Forr	Durse Information Durse Code ass Format Practical training Mechanical and Electronic System Engineering Practical training P				Credits	School C	redit: 2		
Departme	Mechanical and Electronic System Engineering ferm Year-round fextbook and/or eaching Materials Instructor Course Objectives 1) 海外における研修への積極的な参加を通じて、教養をより高め2) 異文化の中での研修に参加することで、広い視野持つことがで3) 現地で関わる人々と英語などを用いてコミュニケーションがでRubric 理想的な到達レベルの目安 神価項目1 知を通じて、教養をより高めの取り組みが良くできる 異文化の中での研修に参加すとで、広い視野持つことが良きる 現地で関わる人々と英語など 現立の中での研修に参加すとで、広い視野持つことが良きる 現地で関わる人々と英語など はてコミュニケーションが良きる Assigned Department Objectives			c System	Student Grade	Adv. 1st			
Course Information Course Code 0008 Class Format Practical training Department Mechanical and Electronic System Engineering Term Year-round Textbook and/or Teaching Materials Instructor Course Objectives (1) 海外における研修への積極的な参加を通じて、教養をより高めるため(2) 異文化の中での研修に参加することで、広い視野持つことができる(3) 現地で関わる人々と英語などを用いてコミュニケーションができる(3) 現地で関わる人々と英語などを用いてコミュニケーションができる(Rubric 理想的な到達レベルの目を 海外における研修への積極的な参加を通じて、教養をより高めるための取り組みが良くできる					Classes per Wee	ek 2			
		なし							
Instructor	-								
Course	Objectiv	es							
(1) 海外に (2) 異文化 (3) 現地で	おける研修 の中での研 関わる人々	への積極的な 修に参加する と英語などな	な参加を通じて、 ることで、広い視 を用いてコミュニ	教養をより高めるた 野持つことができる ケーションができる	めの取り組みができ (B)。 (E)。	5る(A)。			
Rubric									
	extbook and/or eaching Materials structor Ourse Objectives) 海外における研修への積極的 異文化の中での研修に参加で 別地で関わる人々と英語なる ubric 価項目1 価項目2 価項目3 ssigned Department C 習・教育目標 (A) 学習・教育 eaching Method utline		理想的な到達し	ノベルの目安	標準的な到達レベ	の目安	未到達レベルの目安		
Class Format Practical in Mechanic Engineeri Term Year-rour Textbook and/or Teaching Materials Instructor Course Objectives (1) 海外における研修への積極的た(2) 異文化の中での研修に参加する(3) 現地で関わる人々と英語などをRubric 評価項目1 評価項目1 評価項目2 評価項目3 Assigned Department Obj学習・教育目標 (A) 学習・教育目標 (A) 学習・教育 (A) 学習・教育目標 (A) 学習・教育 (加を通じて、	效養をより高めるた	海外における研修 加を通じて、教養 めの取り組みがで	をより高めるた	海外における研修への積極的な参加を通じて、教養をより高めるための取り組みができない		
(1) 海外における研修への積極的(2) 異文化の中での研修に参加す(3) 現地で関わる人々と英語などRubric 評価項目1 評価項目2 評価項目3 Assigned Department Ot学習・教育目標(A)学習・教育目標の合いであるとの研修に参加するとの研修に参加であるとの研修を計で判断す Style Notice 専攻主任コンをと合格の対 Characteristics of Class /			異文化の中ではとで、広い視野	 D研修に参加するこ	異文化の中での研とで、広い視野技	H修に参加するこ	異文化の中での研修に参加することで、広い視野持つことができない		
評価項目1 評価項目2 評価項目3 Assigned Department Obje 学習・教育目標 (A) 学習・教育目標 Teaching Method Outline			いてコミュニケーションが良くで きる いてコミュニケー				現地で関わる人々と英語などを用いてコミュニケーションができない		
Assigne	d Depar	ment Ob	jectives						
学習・教育	計標 (A)	学習・教育目	- 標 (B) 学習・教i	9目標 (E)					
Teachin	g Metho	d							
Outline の研修と、 間の合計 て判断する			・サデ指導(マナー ず、90時間以上に	3各種の研修体験を通じて、多面的に物事を考える能力やコミュニケーション能力を身に付けることが本科である。研修期間は、夏季休業期間などとしてもよい。研修日数は、10日間以上とする。本科目は、海外で 事前指導(マナー教育、研修先の下調べ)、事後の報告会、関係機関に配布する報告書の作成などの自己学習 90時間以上に相当する学習内容である。参加する研修が、本科目に該当するかどうかは、専攻科委員会に					
Style									
Notice		専攻主任を	スは指導教員と緊るように努めると るように努めると	密に連絡を取り合う ともに、服装・言葉 件(割合)、その他	こと。研修期間中に 遣い等、研修生とし	は、積極的に現地 レて相応しい態度	の人たちと関わり、コミュニケーシ で取り組むこと。		
Charact	aristics (
		n Class /			☐ Applicable to	Remote Class	☐ Instructor Professionally Experienced		
					l		Ехрененеей		
Course	Plan								
Course	i idii	-	Theme		1	Goals			
		t - t							
							いて個別の技術体験を行う。		
		1				<u>- 177 (</u>			
	1ct								
						· <u>) 工</u> 司上			
		1	_ 司上			 司上			
		1	 司上						
1st			 司上			 司上			
Semeste		 	 司上			 司上			
l l		<u> </u>	 司上			 司上			
		1	_ 司上			 司上			
	2nd	<u> </u>	_ 司上			 司上			
	Quarter	1	_ 司上			 司上			
			 司上						
		-	_ 司上			 司上			
		<u> </u>	 期末試験実施せす	v					
					l ₁	 司上			
		H	 司上			 司上			
			司上			司上			
2nd	3rd		司上			司上			
Semeste	Quarter	—	司上			司上			
		—	司上			司上			
		7th I	司上			司上			
		8th	司上			同上			

		Ot-l-	Tel L								
	4th Quarter	9th	同上			同上					
		10th	同上			同上	同上				
		11th	同上			同上	同上				
	4th	12th	同上			同上	同上				
	Quarter	13th	同上			同上					
		14th	同上			同上					
		15th	発表会			実習成果の総合的	実習成果の総合的な発表を行う。				
		16th	期末試験実施t								
Evaluati	ion Met	hod and	Weight (%)								
	試	験	発表	相互評価	態度	ポートフォリオ	その他	Total			
Subtotal	0		0	0	0	0	0	0			
基礎的能力	0		0	0	0	0	0	0			
専門的能力	厚門的能力 0		0	0	0	0	0	0			
分野横断的	ずらり能力 0 ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・		0	0	0	0	0	0			

Δ	Akashi Co	ollege	Year	2021		Course Title	Creative Faculty Development			
Course	Informa	tion								
Course Co	ode	0009			Course Categor	ry Specializ	ed / Compulsory			
Class For	mat	Experime	ent		Credits	School C	redit: 2			
Departme	ent	Mechanic Engineer	al and Electronic	System	Student Grade	Adv. 1st				
Term		Second S			Classes per Week 4					
Textbook	and/or				топосос рог то	<u>'</u>				
	Materials									
Instructo			HI Hiroshi							
	Objectiv									
effectively (2) Can a	y. Ipply multi	ple knowled	ge and present n	nultiple problem s	olution plans.		rogress and work results on in group work.			
Rubric										
			Ideal Level		Standard Level		Unacceptable Level			
Achievement 1		a group basis,	d report on work	Can set goals a a group basis, voluntarily, and progress and w	ind plan work or perform work I report on work vork results.	Cannot set goals and plan work on a group basis, perform work voluntarily, and report on work progress and work results.				
Achievem	nent 2		Can apply multand present m solution plans.	tiple knowledge ultiple problem	Can apply know present a probl	vledge and lem solution pla	Cannot apply knowledge and present a problem solution plan.			
Achievement 3			Can effectively distribute work demonstrate of skills and team group work.	c, and ommunication	and demonstra communication		work, and demonstrate communication skills and			
Assigne	d Depar	tment Ob	jectives							
学習・教育	育目標 (B) :	学習・教育目	標 (F) 学習・教育	目標 (G) 学習・教育	育目標 (H)					
Teachin	ng Metho	od								
In this course, students will experience cooperation, work distribution, and adwork, and will foster their ability to solve problems in engineering design in a of working on a task, they will widely develop the relevant knowledge throug handling devices, and investigating performance, etc. to foster creativity thro assignments.						a practical manner. In the process igh assembling equipment,				
Style		and exer- from diffe explanati groups w	cises for assignm erent Advanced C ons on basic kno	uply their knowledge of the fields of their Advanced Course study and conduct creative experimes for assignments under the faculty in charge. Students will form groups of around 4 members and the second work on the assignment. After the assignment theme is presented as on basic knowledge, etc. are given, students will conduct all of the Plan-Do-See activities in the given time and submit a report. Results will be presented verbally in the discussion and a session.						
Notice		guarante	ed in classes and ent reports. Stude	amount to 90 hou the standard self ents will be divided more of classes w	-study time requ d into groups du	ıired for pre-stu ring guidance.	include the learning time dy / review, and completing			
Charact	eristics		Division in Le		viii flot be eligibl	c for a passing s	grade.			
	Learning	or class y	☐ Aided by IC		☐ Applicable to Remote Class ☐ Instructor Professional Experienced					
Course	Plan									
			Theme			Goals				
		1st	Receive class guid schedule, activity	eam division, and dance and check t conditions, and e into teams and do	the overall evaluation	Understand the content.	course aims and assignment			
		2nd a	Create problem s and formulate an groups.	olution plans for t d implement an a	he assignment ction plan in	contribute to th	arily in group activities and e team by demonstrating skills and teamwork.			
		3rd	Same as week 2			Same as week	2			
2nd			Same as week 2			Same as week				
Semeste			Same as week 2			Same as week	2			
r Semeste		6th	problem solution	and presentations plans for the assign entation of an imp	gnment and		others how effective and plans are.			
			Can reconsider in	groups the activi	ty plans and a based on the Same as week 2		2			
		7th 1	make a better im esults of the plai	plementation plar nning discussion.	based on the	Same as week	2			
		7th	make a better im results of the plai Same as week 7	plementation plar nning discussion.	based on the	Same as week Same as week				
	4th Quarter	7th 1 8th 9	esults of the plai	plementation plar nning discussion.	n based on the		2			

		1								
	11th 12th 13th 14th 15th	Same as week 7			Same as week	2				
	12th	Same as week 7			Same as week	Same as week 2				
	13th	Same as week 7			Same as week	2				
	14th	14th Same as week 7 Results presentation: Present the implemented				Same as week 2				
	15th	Results presentat problem solution presentation of the	plan and give a	n oral	Can explain to others how reasonable the implemented solution plan was and the outcome of implementing it.					
	16th	No final exam								
Evaluation I	Method and	Weight (%)								
	Examination	Presentation	Report	Behavior	Portfolio	Other	Total			
Subtotal	0	20	40	40	0	0	100			
Basic Proficiency	0	0	0	0	0	0	0			
Specialized Proficiency	0	0	40	40	0	0	80			
Cross Area Proficiency	0	20	0	0	0	0	20			

A	kashi Co	llege		Year	2021			ourse Title	Engineering Topics for Advanced Course Students	
Course	Informat	tion								
Course Co	ode	0010				Course Catego	ry	Specialize	ed / Compulsory	
Class Forr	mat	Lecture				Credits		Academi	c Credit: 2	
Departme	ent	Mechanic Engineer		nd Electronic	System	Student Grade		Adv. 1st		
Term		Second S	Seme	ester		Classes per We	eek	2		
Textbook Teaching										
Instructor	-	KANDA I	Keiicl	hi,HIRAISHI T	oshihiro,NAKANIS	SHI Hiroshi,NOM	1URA H	ayato,ON	ISHI Shosaku	
Course	Objectiv	es								
(1) Und (2) Lea	erstand th	e latest ted ne latest iss	sues	in areas differ	rent from one's ov	of specialty, their solutions and the status of their efforts (H). wn area of specialty (H). ch that are co-existence friendly in each area of specialty (A).				
Rubric										
			Ic	leal Level		Standard Level			Unacceptable Level	
Achievem	Achievement 1 Achievement 2		te ov so	Understand the latest technological issues in one's own area of specialty, their		Understand the technological is own area of sp solutions and t efforts.	ssues in ecialty,	one's their	Do not understand the latest technological issues in one's own area of expertise, their	
Achievem	ent 2		ar		e latest issues in from one's own y.	Learn about th areas different area of special	from o			
Achievem	ent 3		al re fr	Learn and understand topics about technologies and research that are co-existence friendly in each area of specialty.		Learn and und about technolo research that a friendly in each specialty.	gies an are co-e	d existence	Do not learn and understand topics about technologies and research that are co-existence friendly in each area of specialty.	
Assigne	d Depart	tment Ob	ject	tives						
		学習・教育目	_							
	g Metho			•						
Outline		their own expertise inside an Nakanish Onishi: N Nomura: Kanda: U Hiraishi:	n are e will nd ou ni: G Mech : Elec Jrbai Buile	eas of specialt give knowled ut of this cours uidance and sanical system ctronic and in systems (the ding systems)	y but learn other ige of the trends i se. Classes will co shared fields (thre s (three classes) formation system: ree classes) three classes) By	areas, too. In the technological over various topic e classes) s (three classes learning about the topic about the tearning abo	nis cour develop cs and) various	rse, facult pment in take place developr	for them to actively learn not only by members from different areas of an interdisciplinary manner both e in a relay form: ment and research processes, s beyond their respective technical	
Style		Of the 1! Onishi w Nomura Kanda w Hiraishi	ill te will te vill te will t s 14	ach classes fro teach classes ach classes fro each classes f	in a lecture-style 7 in a lecture-st) in a lecture-st 13 in a lecture-	e forma yle forn yle form style fo	at. nat. nat. ormat.	ture-style format. and in the form of off-campus		
Notice		guarante assignme explaine	eed ii ent r d in i	n classes and eports. Althou a wav that is	the standard self- ugh there will be r	-study time requestions out many topics out ad, so students s	uired fo side of should	r pre-students' be able to	include the learning time dy / review, and completing own specialties, they will be properly learn them. grade.	
Charact	eristics o	of Class /	Div	ision in Lea	arning					
□ Active	Learning			Aided by IC	T	☐ Applicable t	o Remo	ote Class	☐ Instructor Professionally Experienced	
Course Plan										
			Ther	me			Goals			
2nd Semeste r 3rd Quarter	1st	Explanda Adva metl impo know	anced Course hods and othe ortance of acti wledge throug	anishi) se of Engineering Students. Inform er details. Explain ively learning a w ih self-experience ology topics, etc.	the evaluation the ide range of		stand an earning pla	overview of this class and create a in.		
		2nd	and mate mea	on the metho erial's represe	sics of mechanica d of tensile testinentative properties aterial properties	g to obtain a and the	as crys	stal struct	basics of materials science, such ture and dislocation. In tensile testing and properties.	

		3rd Softh	ecture on fracture roperties of metal nachinery and equ ophisticated in recaeir fracture behavacture toughness ecture on the basised in machinery	materials. Requipment are beco tent years, and a viors that have to and fatigue are ic knowledge of t	irements for ming s a result, o do with increasing. the metals	Can explain the u toughness and fa		of fracture	
		Lenn n 4th a v p	ecture on the con- nachinery and equ- on-ferrous) and p nd structures, and iewpoints when se urpose. Lecture o iewpoints. (Onishi	cept of material sipment. Metals (lastic are used in done must have electing materials the vital points	selection for ferrous and machinery various s that fit the	Can explain the r selection for the equipment (include structures.	design of machin	ery and	
		5th d	nformation visualiz earn about systen nalysis and applic atabase of gather elationship betwee roducts.	ns and concepts ations, with the s ed information o	for data subject of a n the	Can explain struc	turing for visuali:	zation.	
		6th L	nformation visualiz earn about mecha nd organization ba ormatting.	nical infòrmatior	Can implement m formatting the de amount of data.	nethods for extra esired information	cting and n from a large		
		7th S	nformation visualize elect a field from l lements and do vi	the database of ϵ	engineering	Can extract and value database according			
		8th E a	slobal environment nvironmental dete nd comfort of peo egions. Through g egional and interg nvironmental dete	erioration can aff ple in the future roup discussions enerational dispa	ect the health and in other , discuss	Can fully underst intergenerational deterioration to o	disparities of en	vironmental	
		9th co	slobal environment outline the mechar npact on the ecos urrent status of gr nd their sources, o orms.	nism of global wa ystem, and exan reenhouse gas co	arming and its nine the oncentrations	Fully understand and can explain to others the mechanism of global warming, its impact on the ecosystem, and the current status of greenhouse gas concentrations and their sources, distribution and migration forms.			
		10th a th	ilobal environment outline the mechar nd its impact on the locations and d redictions and courowth.	nism of ozone lay he ecosystem, an istribution of ozo	ver depletion nd think about one holes and	Fully understand mechanism of oz- impact on the eco distribution of ozo countermeasures	one layer depletionsystem, the locations in the locations and places, and places.	on and its ations and redictions and	
		a G 11th co p	ssistance for devereas (Hiraishi) iive an introductio ometries and disas rovided so far, an echnologies can be the global comm	n on assistance f ster areas that ha d consider the w e applied to local	for developing ave been ay in which	Can recognize the importance of local characteristics also in a globalized society.			
4th Qua	arter	12th d	ppropriate techno live an introductio echnology, examp eveloping countrie neasures in Japan echnology should	les of its applicat es and those in e to think about th	tion in nvironmental	Can explain the definition of appropriate technology and give examples of it.			
		13th (I E si a	ecycling and bene Hiraishi) xplain how to trea uch as fallen leave nd human waste, ecycling-based soo	at biological orga es, weeds, woods and how the sys	nic materials s, food waste, stem for a	Can explain exam recycling-based s		recycling in a	
		14th ir	hared fields 1 (Na is a summary of the lange of the latest icluding shipbuildi ommunicating, po in exercise on boa laritime Sciences'	nis course, learn science and tech ng, navigating, ort and city plann	inology, ina. throuah	Can organize and explain the knowledge gained through the on-board exercise.			
		S A rain 15th coa A M T	Shared fields 2 (Nakanishi) Shared fields 2 (Nakanishi) As a summary of this course, learn about a wide range of the latest science and technology, including shipbuilding, navigating, communicating, port and city planning, through an exercise on board Kobe University's Faculty of Maritime Sciences' training ship, "Fukae Maru." The will be an intensive course combined with week 14.			Can organize and explain the knowledge gained			
			lo final exam						
Evaluation	Meth	od and W	eight (%)						
	Rep	oort	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	

Subtotal	90	0	0	10	0	0	100
Basic Proficiency	20	0	0	10	0	0	30
Specialized Proficiency	30	0	0	0	0	0	30
Cross Area Proficiency	40	0	0	0	0	0	40

Akashi	Colleg	je	Year	2021			ourse Title	Engineering Presentation
Course Inforr	nation	 	1	1		-1		ı -
Course Code		011			Course Categor	У	Specialize	ed / Compulsory
Class Format	Se	eminar			Credits		School C	redit: 1
Department		echanical	and Electronio	System	Student Grade		Adv. 1st	
Term		rst Seme			Classes per Wee	ek	2	
Textbook and/o Teaching Materia								
Instructor		AKAI Yuic	chi,TAKEDA Na	iho				
discuss them ora (2) Can set a the discuss them ora (3) Understand of Theme 2 and pro (4) Understand t	oblem fo ally (E). eme on ally (E). engineer esentation	one's own ring ethic ons of its	n in Theme 1, s through rese results (C).	prepare materials	(e.g., summary a	and sli	ides) for t	presentation, and present and the presentation, and present and trademic societies covered in
Rubric		<u> </u>	- I I I I I I I I I I I I I I I I I I I		lo			
Achievement 1			theme, prepare summary and		Can set a proble theme, prepare summary and s presentations, a discuss them or	mate lides) and pr	rials (e.g., for the	given theme, prepare materials (e.g., summary and slides) for
Achievement 2			Can set a ther prepare mater summary and	me on one's own, rials (e.g., slides) for the and present and orally in a	Can set a theme materials (e.g., slides) for the p present and dis- orally.			Cannot set a theme, prepare materials (e.g., summary and slides) for the presentation, and present and discuss them orally.
Achievement 3			Fully understa explain engine through resea codes, etc. of academic soci presentations	eering ethics rch of the ethics the professional eties and	Understand engine through research o codes, etc. of the p academic societies presentations of its		he ethics fessional d	Do not understand engineering ethics through research of the ethics codes, etc. of the professional academic societies and presentations of its results.
			Understand are the importance through team	nd can practice e of role sharing work.	Understand the role sharing throwork.			Do not understand the importance of role sharing through team work.
Assigned Dep	artme	nt Obje	ectives					
学習・教育目標 (日	•	・教育目標	(C) 学習・教育	î目標 (E)				
Teaching Met	:hod_							
Outline	This cours graphical matters. S viewpoint their impri importan			e will have lectures and exercises on fundamental approaches such as written presentations, or seventations, or or or or or or order to enhance students' ability to express technical students will be given a variety of assignments, and asked to evaluate each other based on the sof (1) subject clarity, (2) content clarity, (3) appeal, etc. In addition, the teaching staff will offect or				
Style	Af	fter Nakai resentatio	i and Takeda h ons on their the	lave given their lec emes. Lessons will	tures on the fund then be taught b	damer ov Nak	ntal topics ai and Ta	, etc., students will give keda together.
Notice	Th gu as pr st	nis course uaranteed ssignment repared b tudents' p	bons on their themes. Lessons will then be taught by Nakai and Takeda together. e's content will amount to 90 hours of study in total. These hours include the learning time d in classes and the standard self-study time required for pre-study / review, and completing to the summary and slides students have by themselves within the determined time. Students are expected to be able to evaluate other oresentations. Who miss 1/5 or more of classes will not be eligible for a passing grade.					
Characteristic	s of C	lass / D	ivision in Le	earning				
☐ Active Learning		☐ Aided by I	СТ	☐ Applicable to	Rem	ote Class	☐ Instructor Professionally Experienced	
Course Plan								
Course Flail		Th	ieme		I	Goals		
1st Semeste r 1st Quarter	1st	Ho Ex pro wr	ow to write a replain how to we esentation. Led it it it is not to be a report baseme for writing	eport (Part 1: Take vrite a report as a v arn how to express sed on specific sar g a 1- or 2-page re	eda) written s sentences in a nples. Set a		stand the	basics of writing a report.
	2nd	l Ex	Daper. How to write a report (Part 2: Takeda) Exchange and correct reports written on the given theme and exchange opinions either by everyone ndividually or by group. Understand the basic write practice.					basic writing of a report in

		3rd T	resentation rules here are several i nind when creatin hey are explained	mportant points g materials for p	resentations.	Understand the k	xey points for cre	ating materials.	
		4th T	resentation rules here are several i nind when giving hey are explained	important points presentations in	public. [·]	Understand the opresentations.	do's and don'ts w	hen giving	
		5th P	resentation rules ractice the key po with actual exampl	pints of public pre	esentations	Learn the key points for public presentations.			
		6th S	heme 1 (Free cho lides (Nakai and T repare a report w nd prepare a 10-r	ākéda) rith an individuall	y set theme	Can create a repo	ort with an indivi o-minute presenta	dually set theme ation.	
		7th E	heme 1 presental ach individual will bout Theme 2 foll vith everyone.	l givè a 10-minut	e presentation	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with everyone.	
	8th		heme 1 presentat ame as above	tion (Part 2: Nak	ai and Takeda)	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with everyone.	
	9th		heme 1 presentat ame as above	tion (Part 3: Nak	ai and Takeda)	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with everyone.	
		10th	heme 1 presentat ame as above	tion (Part 4: Nak	ai and Takeda)	Give a 10-minute presentation about Theme 1 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.			
			heme 1 presental ame as above	tion (Part 5: Nak	ai and Takeda)	Give a 10-minute and have a 10-m Also, evaluate ea	inute discussion	with evervone.	
2nd Qua		12th s	heme 2 (Code of lides (Part 1: Nak n teams of two to thics of respective ocieties. Prepare to 0-minute present	ai and Takeda) four, research the professional act to compile report	ne code of ademic	In teams of two ethics of the prof they belong to.			
		13th s	heme 2 (Code of lides (Part 2: Nak jame as above	ethics): Preparin ai and Takeda)	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 T	heme 2 presental n teams, give a 10 heme 1 and have veryone.	0-minute present	tation about	In teams, give a 10-minute presentation about Theme 2 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.			
			heme 2 presental ame as above	tion (Part 2: Take	eda and Nakai)	In teams, give a 10-minute presentation about Theme 2 and have a 10-minute discussion with everyone. Also, evaluate each other's presentations.			
			lo final exam						
Evaluation 1	Metho	od and W	eight (%)	I	T		1		
	Res	ume	Presentation&D iscussion	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	
Subtotal	30		70	0	0	0	0	100	
Basic Proficiency	0		0	0	0	0	0	0	
Specialized Proficiency	30		70	0	0	0	0	100	
Cross Area Proficiency 0 0 0 0 0 0				0					

Akashi Col	lege	Yea	ar	2021		(Course Title	Industrial Materials	
Course Informati	on								
Course Code	0012				Course Categor	ry	Specializ	ed / Compulsory	
Class Format	Lecture				Credits		Academi	c Credit: 2	
Department	Mechanic Engineeri	al and Electing	tronic	System	Student Grade Adv. 1st				
Term	First Sem	nester			Classes per Week 2				
Textbook and/or Teaching Materials									
Instructor	SAKAIDA	Akiyoshi,K	AJIMU	JRA Yoshihiro,TAk	EDA Naho,HIRA	ISHI	Toshihiro		
Course Objective	S								
(taught by Sakaida). (2) Become able to the control of concrete standing the failuridually studying	nink about ructures (I actors to co and explain hysical qua	technologion, H) (tauglonsider when ing materiantities rela	cal inr ht by en ma als of ited to	novation through t Takeda). king environment interest to each c magnetism along	the fusion of diffe ally friendly chointher (D. H.) (tau	erent ices fo	fields for to or materials or Hiraishi).	to test the strength. (D, H) he construction, maintenance, and s, and deepen understanding by and and explain the properties of	
Rubric									
		Ideal Lev	el		Standard Level			Unacceptable Level	
Achievement 1	related to can expla	meta nin speristics	e basic issues al materials and ecifically their and how to test	Understand the related to meta can explain the and how to tes	al mat eir cha	erials and racteristics	Do not understand the basic issues related to metal materials and cannot explain their characteristics and how to test the strength.		
Achievement 2		between	their engin	e relationship own specialty and eering, and make				Cannot explain the relationship between their own specialty and concrete engineering.	
Achievement 3	nievement 3 making environmentally friendly consider for making meling meling				Do not understand the need to make environmentally friendly choices for industrial materials.				
		quantities magnetis and unde the prope of various	s relat m, ale erstan erties	ona with units,	quantities related to magnetism, along with units, and understand and can explain the properties of 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.	
Assigned Departr									
学習・教育目標 (D) 学		標 (H)							
Teaching Method	1								
Outline	strengthe Sakaida.) urban coi hours, ta environm Understa cases. (8	ening them (2) Explair nstruction), ught by Tak nental impao nd the char hours, tau	toget n the main keda.) ct and acter ght by	her with breakdov mechanical prope itenance and cont (3) Deepen unde I the properties of istics and properti / Kajimura.)	vn phenomena u rties and reinfor rol techniques, a rrstanding by ind various industri es of various ma	under cemer and co dividua ial ma agnetia	various cont methods on sideration ally studyin terials. (8 c materials	metal materials, and methods for nditions. (8 hours, taught by s of concrete (a typical material for n for environmental issues. (6 ng and explaining materials' hours, taught by Hiraishi.) (4) and explain their application	
The class will be held in an omnibus format by four faculty members. Weeks 1-4: Sakaida will teach classes in a lecture-style format. Weeks 5-7 (Takeda): Students will learn about the mechanical properties of concrete, reinforcement methods, maintenance and control techniques, and consideration for environmental issues. Weeks 8-11 (Hiraishi): After explaining choices of industrial materials and the difference in their environmental impact according to a Life Cycle Assessment (LCA), students will select one industrial materials and the difference in their environmental impact according to a Life Cycle Assessment (LCA), students will select one industrial materials advantages, and environmental impact. Weeks 12-15 (Kajimura): Students will learn the physical quantities related to magnetism along with unit and become able to understand and explain the properties of various magnetic materials. Students will alinvestigate application cases.							nmental issues. ne difference in their will select one industrial material esent its advantages, to magnetism along with units,		
Notice	guarante assignme Students	ed in classe ent reports. who miss 1	es and L/3 or	the standard self more of classes v	-study time requ	uired f	or pre-stu	include the learning time dy / review, and completing grade.	
Characteristics of	Class /	Division i	ın Le	arning	1			T	
☐ Active Learning		□ Aided	by IC	T	☐ Applicable t	o Ren	note Class	☐ Instructor Professionally Experienced	
Course Plan						1			
	1	Theme				Goals	5		
1st lat				etal materials (Sa		1			

Study a material's properties (Hiraishi) Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Create presentation of industrial material of interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Also learn about specific cases that are widely used in many fields today. 2nd									
Methods for strengthening metal materials (Sakaida) Learn about heat treatment, strengthening metalization of the control of the properties of metal materials (Sakaida) Learn about the mechanical properties of metal materials (Sakaida) Learn about the mechanical properties of metal materials and the mechanical properties of metal materials and how to test the strength. Introduction to concrete (Takeda) Turoduction construction), its constituent materials for urban construction properties. Turoduction for concrete structures (Takeda) Turoduction construction materials (Takeda) Turoduction materials (Takeda) Turoductio			2nd (l	Sakaida) Learn about the ty naterials that are	pes and characte used as material	eristics of metal	materials that ar	e used as mate	
### Caskaida of the mechanical properties of metal materials and how to test the strength. ### Can explain the mechanical properties of metal materials and how to test the strength. ### Can explain the mechanical properties of metal materials and how to test the strength. ### Can explain the mechanical properties of metal materials and how to test the strength. ### Can explain concrete sconstituent materials and its mechanical properties. ### Durability, maintenance and control techniques for concrete structures (Takeda) Learn how to reinforce concrete structures, and to to deal with deterioration that affects is strong to the provision materials (Takeda) Learn about techniques for reducing experimental impact constituent materials and usage. #### Techniques for reducing the environmental impact disconstituent materials and usage. #### Materials and environmental impact (Hiraishi) Bit Materials and environmental impact cut constituent materials and usage. ### Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Create presentation for the materials. ### Study a material's properties (Hiraishi) Give a presentation of the characteristics of an industrial material of interest. Create presentation and the characteristics of an industrial material of interest. Create presentation of the characteristics of an industrial material of interest. Create presentation of the characteristics of an industrial material of interest. ### An outline of magnetic materials (Kajimura) Outline the development history of magnetic materials and their characteristics. Also learn industrial material of interest. ### An outline of magnetic materials as the physical properties of magnetic materials and their characteristics. Also learn industrial material related properties of magnetic materials and their characteristics. Also learn industrial material related properties of magnetic materials and the physical properties of magnetic materials and their characte			3rd L	Methods for streng Sakaida) Learn about heat t methods, and rein	gthening metal m	gthening	methods, and re		
Sth Learn about concrete (a typical material for urban construction), its constituent materials, and its mechanical properties.			4th	Mechanical proper Sakaida) Learn about the m	nechanical proper	ties of metal	Can explain the materials and ho	mechanical propow to test the st	perties of metal rength.
Subtotal 100 Subt			5th	Learn about concrete (a typical material for urban construction), its constituent materials, and its					nt materials and
of construction materials (Takeda) Learn about techniques for reducing environmental impact caused by concrete's constituent materials and usage. Materials and environmental impact (Hiraishi) Learn about the results of analyzing various industrial materials environmental impact (Hiraishi) Learn about the results of analyzing various industrial materials properties of analyzing various industrial materials properties (Hiraishi) Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material or interest. Create presentation materials. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material or interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material or interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material or interest. An outline of magnetic materials (Kajimura) Colline the other properties of magnetic materials and their characteristics. Can also adisadvantages of an industrial material related special research. An outline of magnetic materials (Kajimura) Colline the other properties of magnetic materials and their characteristics. Can also explain the applications, advantages, and disadvantages of an industrial material related special research. An outline of magnetic materials (Kajimura) Learn about the basics of magnetic materials and their characteristics. Can also explain the specific cases that are widely used in many fields today. Physical properties of magnetic materials and their characteristics. Can also explain the properties of magnetic materials and their characteristics. An outline of magnetic materials (Kajimura) Introduce			6th f	or concrete struct Learn how to reinf now to deal with c	tures (Takeda) force concrete sti	ructures, and			
Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material's representation on the characteristics of an industrial material of interest.			7th	Techniques for reducing the environmental impact of construction materials (Takeda) Learn about techniques for reducing environmental impact caused by concrete's			Can explain the	techniques for r npact of constru	educing the action materials.
Study a material's properties (Hiraishi) Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material on the characteristics of an industrial material or on the characteristics of an industrial material of interest. Create presentation Can explain the applications, advantages, and disadvantages of an industrial material of interest. Study a material's properties (Hiraishi) Give a presentation on the characteristics of an industrial material of interest. Can explain the applications, advantages, and disadvantages of an industrial material of interest. Can explain the applications, advantages, and disadvantages of an industrial material of interest. Can explain the applications, advantages, and disadvantages of an industrial material related special research. Can explain the applications, advantages, and disadvantages of an industrial material related special research. Can explain the applications, advantages, and disadvantages of an industrial material related special research. Can explain the applications, advantages, and disadvantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications, advantages of an industrial material related special research. Can explain the applications application and the properties of magnetic materials and intelligent magnetic materials and intelligent magnetic materials. Can explain the principles and application applic			8th l	earn about the rendustrial materials	esults of analyzin s' environmental	g various ´ impact using	industrial materi	als by means of	
10th Give a presentation on the characteristics of an industrial material of interest. Create presentation materials.		9th		Give a presentation on the characteristics of an			Can explain the applications, advantages, and disadvantages of an industrial material related to special research.		
11th Give a presentation on the characteristics of an industrial material of interest.		10th		Give a presentation dustrial material	n on the charact	eristics of an	disadvantages of	f an industrial m	vantages, and laterial related to
Outline the development history of magnetic materials and their characteristics. Also learn about specific cases that are widely used in many fields today. Physical properties of magnetic materials (Kajimura) Learn about the basics of magnetism and the physical properties of magnetic materials as learned in the field of electricity, etc. Investigate use and application cases of interest in the respective areas of specialty and deepen understanding of their principles. Principles and application examples of magnetic materials, and also introduce principles and application examples of magnetic materials, and also introduce intelligent magnetic materials and intelligent magnetic materials and intelligent magnetic materials in one's own area of specialty. Applications examples in various fields (Kajimura) Compile into a report the results of an investigation into magnetic materials in one's own area of specialty. Evaluation Method and Weight (%) Examination Presentation O			11th (Give a presentatio	n on the characte	ishi) eristics of an	disadvantages of	f an industrial m	vantages, and laterial related to
Quarter 13th			12th r	Outline the develo materials and thei about specific case	pment history of r characteristics.	magnetic Also learn	materials and the explain the speci	eir characteristic ific cases that ar	cs. Can also
Sensors that use magnetic materials (Kajimura) Introduce principles and application examples of magnetic sensors that use magnetic materials, and also introduce intelligent materials and intelligent magnetic materials. Applications examples in various fields (Kajimura) Can compile into a report and explain intelligent magnetic materials.	2 Q	nd uarter	13th	Physical properties Kajimura) Learn about the bashysical properties end application espective areas o	asics of magnetis s of magnetic ma d of electricity, et n cases of interes f specialty and d	om and the outerials as one of the contract of	physical properties of magnetic materials as learned in the field of electricity, etc. Can investigate use and application cases of interest it 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		
Applications examples in various fields (Kajimura) Compile into a report and explain the results of an investigation into magnetic materials in one's own area of specialty. 15th Final exam Evaluation Method and Weight (%) Examination Presentation Mutual Evaluations between students Subtotal 100 0 0 0 0 0 0 0 0 0 0 0			14th	Principles and app sensors that use n ntroduce principle nagnetic sensors and also introduce	lication examples nagnetic materia es and application that use magnet intelligent mate	ls (Kajimura) n examples of ic materials,			
Evaluation Method and Weight (%) Examination Presentation Mutual Evaluations between students Subtotal 100 0 0 0 0 0 0 0 100 Basic Proficiency 50 0 0 0 0 0 0 0 50 Specialized		15th		Applications exam Compile into a rep nvestigation into i	ples in various fic	an `	of an investigation into magnetic materials in		
Examination Presentation Mutual Evaluations between students Behavior Portfolio Other Total Subtotal 100 0 0 0 0 0 0 0 100 Basic Proficiency 50 0 0 0 0 0 0 0 50									
Subtotal 100 0 0 0 0 100 Basic Proficiency 50 0 0 0 0 0 50	Evaluatio				Evaluations between	Behavior	Portfolio	Other	Total
Basic Proficiency 50 0 0 0 0 50	Subtotal	100	າ	0		0	0	0	100
Capitalized	Basic		<u>-</u>						
Specialized 50 0 0 0 0 50 50 0 0	Specialized	50		0	0	0	0	0	50
Cross Area Proficiency 0 0 0 0 0 0	Cross Area			0	0	0	0	0	0

А	kashi Co	ollege	Year	2021		Course Title	Information Processing	
Course	Informa	tion	-	•		•	•	
Course Co	ode	0013			Course Categor	ry Special	ized / Elective	
Class For	mat	Lecture			Credits	Acader	nic Credit: 2	
Departme	ent	Mechani Enginee	ical and Electron ring	ic System	Student Grade	Adv. 19	st	
Term		First Ser			Classes per We	eek 2		
Textbook								
Teaching Instructor		INOUE k	/azunari					
	Objectiv		<u>Cazariari</u>					
(1) Have (2) Under tools (D).	knowledge stand the	of the var characteris	stics of data forn	ts that a computer nats, and can conve ers in a way that is e	ert them to requi	red formats ar	riate choices (H). nd process them using appropriate	
Kubiic			Ideal Level		Standard Level		Unacceptable Level	
Achievem	nent 1		Fully underst formats that	and the data computers handle, nagement and	Understand the that computers their managem protection.	e data formats handle, and		
Achievem	Fully understand how to prepare technical documentation and presentation materials, as various techniques.			nical on and materials, and	Understand hor technical docur presentation m various techniq	mentation and aterials, and	Do not understand how to prepare technical documentation and presentation materials, and various techniques.	
Achievem	Achievement 3 calcula using E			and statistical and processing nd ipyson.	Understand sta calculations and using Excel and	d processing	Do not understand statistical calculations and processing using Excel or ipyson.	
Assigned Department Objectives 学習・教育目標 (D) 学習・教育目標 (E) 学習・教育目標 (H)								
			31宗 (L) 于自" <u>教</u>	月口(示 (11)				
Outline create the includes powerious ap provide ex			he materials use papers, posters applications, the explanations ain	d in various types on the control of the course of this course ned at boosting skill that the computer of the	of presenting is a . From the data is to learn advar s.	in important ta handled by co nced informatio	f specialty. Improving the ability to ask for conveying technology. This imputers to material creation using on application technology and and and protection in weeks 1 and 2	
Style		From we Office ar exercise	eek 3 to week 1! nd statistical cald formats.	ek 3 to week 15, lessons on creating technical documentation and presentation materials using MS d statistical calculations and processing using Excel and ipyson, will be taught in lecture-style and				
Notice		guaranto assignm take the	eed in classes ar	udy / review, and completing udents from all departments can				
Charact	eristics		Division in L				, 5.0.00	
☐ Active			☐ Aided by		☐ Applicable t	o Remote Clas	s ☐ Instructor Professionally Experienced	
Course	Dlan							
course	riali 		Theme			Goals		
		1st		a formats that comp cteristics.	outers handle	Understand th	ne data formats that computers eir characteristics.	
		2nd	Explain the inte networks of cor	rnal structure, stora nputers.	age, and	networks of co	•	
		3rd	Explain styles, of fonts, and inder	chapters, sections, parts found in docume	paragraphs, ent creation.	Understand st paragraphs, for creation.	yles, chapters, sections, onts, and indents found in document	
1st		4th	and tables, and	nk and paste metafi cross-reference.		pictures and t	aste link and paste metafile for ables, and cross-reference.	
1st Semeste	1st Quarter	5th	Word	mit technical docum		Word	bmit technical documentation using	
r			Describe how to	l documentation us create different di slides / masters.	ng PowerPoint. agrams,	Understand he	cal documentation using PowerPoint bw to create different diagrams, d slides / masters.	
		7th	including image	e techniques and plant, audio, and video o	lata.	including imag	ffective techniques and playback, ge, audio, and video data.	
		8th	Create technica using PowerPoin	l presentation docu nt	mentation	Create technic using PowerPo	cal presentation documentation pint	
	254	9th			analysis.		arious functions and data analysis.	
	2nd Quarter 10th Explain various functions and data and Quarter 10th Explain macro functions and how to ru			o run them.	Understand macro functions and how to run them.			

	11th	Submit statistical using Excel	calculations a	and processing	Submit sta using Exce		ns and processing		
	12th	Explain file protec	explain file protection, encryption, and security.			Can protect, encrypt, and secure files.			
	13th	Explain a cloud-as development envi	Explain a cloud-assisted interactive program development environment.			Understand a cloud-assisted interactive program development environment.			
	14th	Explain database execution.	cplain database analysis that used interactive Understand data			d database analy execution.	sis that used		
	15th S		Summary			Understand the summary.			
	16th No final exam				No final ex	am			
Evaluation	Method and	Weight (%)							
		Assignments					Total		
Subtotal	0	100	0	0	0	0	100		
Basic Proficiency	0	0	0	0	0	0	0		
Specialized Proficiency			0	0	0	0	100		
Cross Area O		0	0	0	0	0	0		

Δ	kashi Co	ماامم	Year	2021			ourse	Analytical Mechanics
			I Cai	2021			Title	, analytical Piccilarites
Course Co	<u>Informa</u>	0014			Course Categor	· · · · · · · · · · · · · · · · · · ·	Specializ	ed / Elective
Class For		Lecture			Credits	У	1 -	c Credit: 2
Departme		Mechan	ical and Electroni	c System	Student Grade		Adv. 1st	
<u> </u>		Enginee First Se			Classes per Wee	ol.	2	
Term Textbook	and/or	FIRST Sei	mester		Classes per we	eĸ	2	
Teaching								
Instructor		<u> </u>	WARA Hiromichi					
	Objectiv		un machanica ara	formulated by day	volening Nowtonia	.n. m.o.	chanica w	ith a focus on the handling of
constraint (2) Under degrees of (3) Learn (H) (4) Under	ts. (D) Testand the If freedom The calcul Testand that	basic conc system), v us of varia : Hamiltoni	epts of vibration with a focus on n tions, and unders an mechanics (a	in multi-degree of ormal vibration. (D stand that the basic canonical transforr	freedom systems), (F) c laws of mechan	ics cai	uding cont n be form	tinuum, which is an infinite ulated as variation principles. (D), erting a motor equation, a second
Rubric	erentiai eq	uation, int	o a first order on	e. (D), (H)				
Rubiic			Ideal Level		Standard Level			Unacceptable Level
			Fully understa		Understand the	formi	ılation of	Do not understand the
Achievem	ent 1		formulation o mechanics.	f Lagrangian	Lagrangian med			formulation of Lagrangian mechanics.
Achievem	Fully understand the basic concepts of multi-degree of freedom vibration systems. Understand the basic of multi-degree of of multi-degree of vibration systems.			concepts edom	Do not understand the basic concepts of multi-degree of freedom vibration systems.			
Achievem	Fully understand the vement 3 Fully understand the formulation of mechanics by variation principles. Understand the formulation mechanics by the variation principles.				Do not understand the formulation of mechanics by the variation principles.			
formulation of Hamiltonian Understand the formulation of Hamiltonian Hamiltonian mochanics for						Do not understand the formulation of Hamiltonian mechanics.		
Assigne	d Depar	tment Ol	ojectives					
			目標 (F) 学習・教育	育目標 (H)				
Teachin	g Metho							
Outline		fundam compos students mechan	ental department ed of the Lagrand s will mainly stud	s involved in the w gian and Hamiltonia y the Lagrangian. handle them well.	vide area of engir an mechanics (a The Lagrangian r	eering canon necha	 The the ical transface nics is des 	chanics and is one of the important cory of analytical mechanics is formation). In this course, signed to foresee various the Hamiltonian mechanics, which
Style			es are held in a le					
Notice		This of guarant assignmentime, ar Student	ourse's content weed in classes an eent reports. Be a nd students are a s who miss 1/3 c	will amount to 90 h d the standard self aware that class tin dvised to thorough or more of classes v	ours of study in t -study time requ ne makes up a sr ly pre-study or re vill not be eligible	otal. Tired for nall personal	These hou or pre-stu- ercentage passing o	ars include the learning time dy / review, and completing of the overall expected learning grade.
Charact	eristics		Division in L					
□ Active	Learning		☐ Aided by I	СТ	☐ Applicable to	Rem	ote Class	☐ Instructor Professionally Experienced
Course	Plan							
300.00			Theme			Goals		
		1st	The principle of principle	virtual work and d'		Learn	the basic	s about the principle of virtual mbert's principle.
		2nd		agrange multiplier			the basic	s of the method of Lagrange
		3rd	Lagrange's moti	on equations of the			the basic first kind	s of Lagrange's motion equations
	1st Quarter	4th	Generalized coo	rdinates and gener	alizeu speeu	gener	alized spe	
1st Semeste	Qua. co.	5th	Lagrange's moti	on equations (the s	second kind)	Learn of the	the basic second k	s of Lagrange's motion equations ind.
r		6th	Normal coordina system	ites in a coupled os	scillation	Learn	the basic	s of coupled oscillation systems.
	7th	7th	Normal coordina system	ites in a coupled os	scillation	Learn	the basic	s of coupled oscillation systems.
		8th	Waves			Learn	the basic	s of waves.
		9th	Lagrangian cont	inuum				s of Lagrangian continuum.
	2nd Quarter	10th	Calculus of varia	tions and Euler's d				s of the calculus of variations and cial equations.
	Quarter lequations				Euler's differential equations. Learn the basics of Hamilton's principle.			

	12th	Hamilton's canonical equ	uations	Learn the basics equations.	of Hamilton's canonical
	13th	Hamilton's canonical equ	uations	Learn the basics equations.	of Hamilton's canonical
	14th	Variation principles in Ha	amiltonian mechanics	Learn the basics Hamiltonian med	of variation principles in hanics.
	15th	Summary and suppleme	entary notes	Understand the rand Hamiltonian	elationship between Lagrangian mechanics.
	16th	Final exam	Final exam		
Evaluation Me	thod and	d Weight (%)			
		Examination	Exercise		Total
Subtotal		70	30		100
Basic Proficiency		0	0		0
Specialized Proficiency		70	30		100
Cross Area Profic	iency	0	lo		0

А	kashi Co	llege	e Year 2021 Course Title Inclusive Desi				Inclusive Design		
Course	Informa	tion							
Course Co	ode	0015				Course Catego	ry	Specializ	ed / Elective
Class For	mat	Lecture				Credits		Academi	c Credit: 2
Departme	ent	Mechani Enginee		and Electronic	System	Student Grade		Adv. 1st	
Term		First Ser	nest	er		Classes per We	eek	2	
Textbook									
Teaching Instructor		OTCLIVA	Tal	robileo AIZITA N	Naoshige,ASAO Hi	rovacu TM/ATA	Naaki L	JIDAI Vac	na dzi
		•	lak	KEHIKU,AKITA I	Nausilige, ASAO ni	ioyasu,iwa ia i	inauki,r	IIRAI Tasi	uyuki
The goals (1) Under (2) Under	rstand inclurstand user rstand user ate solid k	usive desig	ion r	Japan and Eur methods practical ability	•	o comprehensiv	ely sup	port the l	ives of diverse people with
Rubric									
			I	deal Level		Standard Leve			Unacceptable Level
Achievem	ent 1		Fully understand and can Understand and can explain explain inclusive design inclusive design					Do not understand or can explain inclusive design.	
Achievem	ent 2		k		multiple kinds of present multiple f a single	Can apply mult knowledge and ideas instead of solution.	prese	nt multiple	Cannot apply multiple kinds of knowledge and present multiple ideas instead of a single solution .
Achievem	ent 3		le	fully understan explain various haracteristics		Understand an various user ch			Do not understand and cannot explain various user characteristics.
Assiane	d Depar	tment Ol	nent Objectives						•
		学習・教育目							
	g Metho								
Outline		excluded as an ef fields su participa for 14 y designer	d unt fective ch a stion ears for	til now, and m ve method of l s medical and method as the and is current seven years a	akes good busine JX (user experien welfare, and disc at process. It ain ly a professor at t nd is currently an	ss sense. Recer ce) and innoval usses inclusive s to understand the Graduate So assistant profe	ntly, in tion. Th design I this th chool of ssor at	particular, nis course in Europe nrough WS f Kyushu l the Gradi	nat includes users who have been, it has been attracting attention focuses on case studies in specific and Japan, and the user-5, etc. Hirai has been a designer University. Akita has worked as a uate School of Kyushu University. In the nursing care and barrier-fiences.
Style		The class classes no Kada	ses a will b i o K	are taught in v oe distributed i	vays including lec	tures and exerc	ises su	ch as wor e Books: H	kshops. The materials required for Hirai et al. Inclusive Design: Shakai Design to Solve Social Problems)
Notice		guarant assignm possible	eed i ent i , and	in classes and reports. The co d group worksl	amount to 90 hou the standard self- ourse is open to s hops will also be h more of classes w	study time reque tudents from ar neld.	uired fo	or pre-stud artment. (include the learning time dy / review, and completing Classes will be taught as simply as grade.
Charact	eristics o	of Class /	Div Div	vision in Lea	arning				
□ Active	Learning			Aided by IC	Т	☐ Applicable t	to Rem	ote Class	☐ Instructor Professionally Experienced
Course	Plan								
			The	me			Goals		
	What is an inclusive design? 1) (Yasuyuki Hirai, professor at Kyushu University) Understand accessible design around the world. 1st What is the difference between conventional and inclusive design? Think together to discover why there is a need for this using specific cases as a subject.		stand univ r-free des	versal design from accessible and ign around the world.					
1st Semeste r	neste 1st Quarter 2nd 2nd What is an inclusive design? 2) (Hirai) Using specific cases in the medical and pharmaceutical fields to think together of including the background behind inclusive and the differences between it and othe concepts such as universal and barrier-fidesign.		and her on topics, clusive design other similar		stand the ve design	concepts and methodologies of			
		3rd	sim: Con	ulation, Otuska duct a facility		in schools by Undersat Akashi College		derstand each user's special features throu nulations as the elderly, visually impaired, e	

		4th	Office space and in Akita, Assistant Pr Otsuka Companies are de their management Consider inclusive referring to the re management and	ofessor, Kyushu veloping product t philosophy and design at compa lationship betwee manufacturing, t	University), s based on vision. inies by en corporate the relationship	Learn how to res of office-space in		sed on examples	
			with the market, a	and the relationsh	nip with				
		5th	Office spaces and What is an office, space, and what p what to do in orde its space.	what functions a products are there	re`in an´office e? Consider	Can think about with the parties		n in an office space	
		6th	Office spaces and Products used in t furniture. Study be designed through	he office include ased on example	stationery and s, how they are	Understand the inclusive design process in an office space.			
		7th	Otsuka Discuss in groups	Office spaces and inclusive design 4 (Akita), Otsuka Oiscuss in groups things all noticed in the class oom and school space, set challenges, and share			allenges based solve them.	on behavioral	
		8th	Team-made desig Caprice) Learn and experie that are actually a on "graphic desigr	nce the "team-m pplied in society.	, lade designs"	Understand parti	cipatory and co	o-creational design	
		9th	Team-made desig Practice "graphic of introduction broch students) based of issues by practical	design" (a depart ure and DVD pro n team-made de	ment oduced by signs. Identify	Create a graphic made design	design (brochu	ire) using a team-	
	ICF and the welfare community (Hiroy Amenity & Safety Corporation) Recognize the relevance and importan ICF's thinking, which has become mair welfare, and its living environment. St points for building a living environmen case of disease from practical example approaches toward diverse people.				tance of the mainstream for . Study the ment for each nples, and learn	Recognize the relevance and importance of the ICF's thinking and living environment, and understand the basics of building a living environment.			
		11th	Living environmen Simulated learning Examine the main free housing, com people with physic analysis, and learr	g (Asao), Otsuka facilities and des prehensively cap cal disabilities, co	sign of barrier- ture the lives of			inclusive barrier-	
	2nd Quarter	12th	concerned, Otsuka Explain the outline System" that invol concerned, the "Ad Development" sch	xplain the outlines of Japan's "User Expert ystem" that involves participation of parties oncerned, the "Advisor for Welfare Community evelopment" scheme in the Hyogo Prefectural /elfare Community Development Ordinance, and			Understand the development of welfare communities in Japan's local governments.		
		13th	Inclusive design w Hold a workshop waspiration: What controduction, the will run.	lesign can do." E	xplains as an	Research various issues through inclusive design methodology with the parties concerned.			
		14th	Inclusive design w Identify and visual within the process user interaction ar issues.	lize key issues fro Organize insigh	om needs its from direct	Identify, research, and visualize social issues and solve them.			
	15th		Inclusive design w (Akita), Otsuka Design solutions for Finally, present the	or the key issues		Can present solutions for important issues through inclusive design.			
		16th	No final exam						
Evaluation	on Met	thod and \	Weight (%)		1	Т	1		
	E	xamination	Presentation	Mutual Evaluations between students	Behavior	Report	Other	Total	
Subtotal	0		70	0	0	30	0	100	
Basic Proficiency	, o	1	0	0	0	0	0	0	
Specialized	<u> </u>			0	0	0	0		
Cross Area 0 70 0			0	30	0	100			
Cross Area Proficiency 0			-		1.				

A	Akashi C	ollege	Year	2021		Course Title	Off-Campus Practical Training		
Course	Informa	ition	·						
Course C	ode	0016			Course Category	Specializ	ed / Compulsory		
Class For	mat		l training		Credits	School (Credit: 2		
Departm	ent	Mechani Enginee	ical and Electroni	c System	Student Grade	Adv. 1st			
Term		Year-rou			Classes per Week 前期:2 後期:2				
Textbook	and/or				Total Paris	1337731-13			
	Matérials								
Instructo									
(1) Can e	Objective experience se.	some of th	e actual technica	activities at the horkplaces and thinked empirically.	ost companies an	d work on solv	ring problems with the necessary		
(3) Can r	eport effe	ctively what	t has been learne	ed empirically.	in eery.				
Rubric					_				
			Ideal Level		Standard Level		Unacceptable Level		
Achievement 1			actual technic	ce some of the cal activities at the es and actively ng problems with assistance.	Can experience s actual technical host companies solving problems necessary assist	activities at th and work on with the	Cannot experience some of the actual technical activities at the host companies and work on solving problems with the necessary assistance.		
Achievement 2 assigned workplace and actively assigned workplace and think think freely. the assigned workplace and think freely.				the assigned workplace and					
					Cannot effectively report what has been learned empirically.				
Assigned Department Objectives									
学習・教育	育目標 (E):	学習・教育目	目標 (F) 学習・教育	î目標 (G)					
Teachir	ng Metho								
Outline		sense of	f practical techno	oart of an introduct logy through techn from technical expe	ical experience in	companies or	ich system. The aim is to gain a government agencies, etc., and to		
Style		Follow t	he host company	instructor's instruc	ctions.				
Notice		departm internsh languag summer (manner with a tr If it is do things lil internsh case, th etc. (30' and Aim (1) "Exp study us member (2) "Wo research	nent principal or vip period, studen to that is approprion to the control of the	with the faculty of a lits should actively the should actively the graduate study is lary research on the conducting the internations, and if it is red with research on consist of an evaluation items, the actual technica methods of the cofaculty member of	pasic engineering cry to acquire tech the internship per internship may ince host company), anship at a companecessary to prove companies, etc., ation by research I outcomes debried the following item activities at the mpanies, etc., of research there." orkplace" as "contineering to acquire the following item activities at the mpanies, etc., of research there."	research or spinical and other incomplete of the leading of the le	closely communicate with the ecial research. During the ser skills, and dress and use least 10 working days during the hours of preliminary guidance ns, and time for preparing reports, titution will be difficult due to consideration for students, the field of graduate study. In that sudents' research on companies, ts (40%). In the Course Objectives placed as follows: es, etc." as "conduct research and et and to obtain advice from the activities of company of target		
Charac	teristics	of Class /	Division in Le	earning					
□ Active	e Learning		□ Aided by I	СТ	☐ Applicable to	Remote Class	☐ Instructor Professionally Experienced		
Course	Dlan								
Course	ridii		Thoma		_ ا	`oalc			
			Theme			Goals Comindors abo	ut procautions of internable and		
		1st	Guidance		n	nanners at the	ut precautions of internship and host company, etc.		
		2nd	Internship			Set individual t ompany.	echnical experience at the host		
		3rd	Same as above			ame as above			
1st	1st Quarter	4th	Same as above			ame as above			
	1st Semeste	5th	Same as above			ame as above			
1st						amo ac above			
Semeste		6th	Same as above	S	Same as above				
Semeste		6th 7th	Same as above Same as above			ame as above			
Semeste					S				
1st Semeste r		7th	Same as above Same as above Same as above		9	ame as above			
Semeste	2nd	7th 8th	Same as above Same as above Same as above Same as above		5	ame as above ame as above			
Semeste	2nd Quarter	7th 8th 9th	Same as above Same as above Same as above		S S S	ame as above ame as above ame as above			

		4 2.1	6 1			I .				
		13th	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			Same as above		Same as above					
Semeste	te 9th		Same as above			Same as above				
l L	10th		Same as above			Same as above				
		11th	Same as above			Same as above				
	4+1-	12th	Same as above			Same as above				
	4th Quarter	13th	Same as above			Same as above				
		14th	Same as above			Same as above				
		15th	Internship debrief ses	sion		A presentation on the overall outcomes of the internship .				
		16th	No final exam							
Evaluat	ion Meth	od and	d Weight (%)			•				
		E	Evaluation of the training destination	Report	[Debriefing session	Total			
Subtotal	Subtotal		30	30	4	40	100			
Basic Pro	ficiency)	0		0	0			
	ed Proficier	ncv 3	30	30		40	100			
Cross Area Proficiency)	0		0	0			
Cross Area Proficiency			-	1 -		-				

А	kashi Co	ollege	Year	2021		Course Title	Prelimir Studies	nary Research
Course	Informa	tion		•		•		
Course Co		0017			Course Catego	ry Specia	alized / Comp	 oulsory
Class Forr	nat	Seminar			Credits	· · ·	l Credit: 4	
Departme	ent		cal and Electroni ing	c System	Student Grade	Adv. 1	.st	
Term		Year-rou	nd		Classes per We	eek 4		
Textbook Teaching								
Instructor	•							
Course	Objectiv	es						
perspective (2) Can se	ve toward ummarize	solving prol obtained re	olems. search results a	camine it theoretica s reports and poste endently and contir	ers, communicat			ely from a wide , and discuss them.
Rubric								
			Ideal Level		Standard Leve	I	Unacce	ptable Level
Achievem	ent 1		Can integrate and deepen expertise, and examine it theoretically, systematically, practically, and creatively from and pro-			and deepen examine it ystematically, from a wide ward solving	Cannot expertise theorete and pra	integrate and deepen se, and examine it ically, systematically, actically from a wide ctive toward solving
Achievem	Achievement 2		research resu posters, comr verbally in a c	marize obtained lts as reports and nunicate them comprehensible ners, and discuss	Can summariz research result posters, comm verbally to oth them.	s as reports a unicate them	nd researc posters	summarize obtained th results as reports and communicate them to others, and discuss
Achievem	ent 3		Can fully enga research inde continuously.	age in learning and pendently and	Can engage in research indep continuously.	learning and endently and	Cannot researd continu	engage in learning and th independently and lously.
Assigne	d Depar	tment Ob	jectives					
学習・教育	====================================	学習・教育目	 標 (E) 学習・教育] 計目標 (G)				
Teachin	g Metho	d						
Outline		This cour	ronic system en The aim is to acc	gineering fields at	a higher level ui	nder the super	rvision of the	arch in the mechanical e faculty member in for graduate study's
Style		members decided a exploring	s in charge will f after discussing the issues give	irst present planne with students with n, thinking about tl	d themes for se utmost respect he approach me	tting up a rese to their engine thods, right u	earch theme eering intere p to answeri	luntarily, the faculty . The theme will then be ests. Furthermore, from ng the questions, judgment as much as
Notice		lguarante	ed in classes an ent reports. Pror d in the departm	l amount to 180 ho d the standard self note research inde ent. Other conditio	-study time rea	uired for pre-s	studv / reviev	the learning time w, and completing ground knowledge ents ineligible for a
Charact	eristics o	of Class /	Division in Lo	earning				
□ Active	Learning		☐ Aided by I	СТ	☐ Applicable t	to Remote Cla	ss	ructor Professionally enced
Course	Plan							
			Theme			Goals		
		1st	Setting the rese Each faculty me direct each indiv	mber in charge will	explain and	Can determinunder each te		hemes independently
21		2nd	Individual resea Carry out separa faculty member	ately under supervi	sion of each	Can independ studies and r	dently and co	ontinuously conduct er each teaching staff.
3		3rd	Individual resea Same as above			Same as abo	ve	
1st Semeste 1st Quarter			Individual resea Same as above	rch		Same as abo	ve	
r Quarter –			Individual resea Same as above	rch		Same as abo	ve	
			Individual resea Same as above	rch		Same as abo	ve	
			Individual resea Same as above	rch		Same as abo	ve	
<u> </u>			Individual resear	rch		Same as abo	ve	

		9th	Individual researc	 :h		Same as above				
			Same as above Individual researc	·h						
		10th	Same as above			Same as above				
		11th	Individual researd Same as above	:n		Same as above				
	2nd	12th	Individual researd Same as above	:h		Same as above				
	Quarter	13th	Individual researd Same as above	h		Same as above				
		14th	Individual researd Same as above	h		Same as above	Same as above			
		15th	Individual researd Same as above	:h		Same as above				
		16th	No final exam							
		1st	Individual researd Same as above	:h		Same as above				
		2nd	Individual researd Same as above	h		Same as above				
		3rd	Individual researd Same as above	h		Same as above				
	3rd	4th	Individual researd Same as above	h		Same as above				
	Quarter	5th	Individual researc	h		Same as above				
		6th	Individual researd Same as above	h		Same as above				
		7th	Individual researc Same as above	:h		Same as above				
2nd		8th	Individual researc	h		Same as above				
Semeste r		9th	Individual researd Same as above	h		Same as above				
		10th	Individual researd Same as above	:h		Same as above				
		11th	Individual researc Same as above	h		Same as above				
	4th	12th	Individual researd Same as above	:h		Same as above				
	Quarter	13th	Individual researd Same as above	h		Same as above				
		14th	Individual researd Same as above	h		Same as above				
		15th Presentation review meeting			Can summarize obtained research results as reports and posters, communicate them verbally to others, and discuss them.					
	16th No final exam									
Evaluati	ation Method and Weight (%)						1			
		amination	Presentation	Report	Autonomy	Portfolio	Other	Total		
Subtotal	0		30	40	30	0	0	100		
Basic Proficienc			10	20	10	0	0	40		
Specialize Proficienc	zed o 20 20 20				20	0	0	60		
Cross Are Proficienc	irea o o o					0	0	0		

А	kashi Co	ollege	Year	2021				System Control Engineering
Course	Informat	tion				1	itie	Liigiileeriiig
Course Co		0018			Course Categor	rv !	Specialize	ed / Elective
Class Forr		Lecture			Credits		•	Credit: 2
Departme	ent	Mechani Engineer	cal and Electronic	System	Student Grade	,	Adv. 1st	
Term		First Ser			Classes per We	eek 2	2	
Textbook Teaching	and/or Materials					'		
Instructor		KAMI Ya	sushi					
Course	Objectiv	es						
2. Can de 3. Can ca 4. Can ca 5. Can ex 6. Can ex	termine th lculate stat lculate obs plain contr	ne stability of te feedback server gains rol perform	gains to achieve to achieve the s ance that can be	nvariant system us the specified pole pecified pole arrar achieved (adjuste onditions of the co	position throug gement using a d) using an optir	h conve dual sy mal requ	rsion to a stem ulator	a controllable canonical form
Rubric			T-IIII		Ct dd 1l			I I I I I I I I I I I I I I I I I I I
			Ideal Level	o state space	Standard Level		2260	Unacceptable Level
Achievem	Can derive the state-space representation for any linear time-invariant system Can derive the state-space representation for some typical system examples				Do not know the definition of the state-space representation			
Achievem	ent 2		Can determine based on the procedure in L stability determine	determinatión	Can explain the procedure in Ly stability determ	yapunov	''s	Do not know Lyapunov's stability determination method
Achievem	ent 3					Do not know the state feedback control rule		
	Can calculate the desired observer gains using a dual system Can explain the matrix to be stabilized in the observer design					Do not know the observer		
	Can explain the control performance tradeoffs that can be achieved with an optimal regulator Can explain the control performance that can be achieved with an optimal regulator Can explain the control performance that can be achieved with an optimal regulator					Do not know the optimal regulator		
			Can explain the conditions base composition of system's poles	ed on the f the aggregation	Can explain the characteristics of the composition of the aggregation system's poles		he	Do not know the characteristics of the composition of the aggregation system's poles
Assigne	d Depart	tment Ob	· · · · · · · · · · · · · · · · · · ·					
学習・教育	育目標 (D) ≒	学習・教育目	l標 (F) 学習・教育	·目標 (H)				
Teachin	g Metho	<u>d</u>						
Outline		for which	n a control syster te-space represer to design a contro	n is designed in th ntation that use va	e frequency don riables (state va	naín. By Iriables)	contrast that rep	output relationships is the basis , modern control theory is based resent the internal state of a he basic contents of modern
Style		lmethod,	controllability ar	d observability, ar	nd how to design	n state fe	eedback (rapunov's stability determination controllers and observers. be exercises to review the
Notice		guarante assignm Laplace There w	eed in classes and ent reports. Furtl transform, transf ill be no makeup	the standard self	-study time requose assumes that eigenvalues and oor performance.	uired for student matrix i	pre-stud s have a nversion	include the learning time ly / review, and completing basic knowledge of topics such as (the very basics of matrix theory. rade.
Charact	eristics o	of Class /	Division in Le	earning				
☐ Active	Learning		☐ Aided by I	 CT	☐ Applicable t	o Remo	te Class	☐ Instructor Professionally Experienced
	D.							
Course	Plan	 	-					
			Theme			Goals	:L_ /!	
		1st	An introduction t	o state-space repr	esentation	represe Can exp	entation	rpression for state-space process for deriving a state-space
1st Semeste r	1st Quarter	2nd	Solutions for equ	ations of state	te Can derive the solution for an equation of a state-transmatrix Can calculate a state-transition matrix			meaning of a state-transition
		3rd		veen an equation of and the stability	Can calculate a transfer function from the on of state and a space matrix			

		4th	Similarity convers functions	ion invariants and	d transfer	Can explain the transformation Can similarly transformation transformation	ansform states	using the given	
		5th	Concept of stabilit determination me	y and Lyapunov's thod (1)	s stability	Can explain the relationship between stability and convergence values of state variables Can explain Lyapunov's stability determination method			
		6th	Lyapunov's stabili	ty determination	method (2)	Can determine the stability of the linear time- invariant system given by a state-space representation, based on Lyapunov's stability determination method			
		7th	Exercise			Do exercises to the first semest		t from lectures in	
		8th	Midterm exam						
		9th	State feedback an	d controllability		Can explain stat Can determine conditions		ntrol rules based on control	
		10th	The nature of a co	ontrollable canoni ntrol system	cal form and	Can explain the characteristics of the system matrix in controllable canonical form and their correspondence with a transfer function Can calculate the state feedback gain that achieves the specified pole position through conversion to a controllable canonical form			
	2nd Quarter 12th		Observers and ob	servability		Can explain the configuration of an observer Can determine observability based on the observation conditions			
			The nature of obs design of observe			Can explain the matrix in observorrespondence Can calculate of specified pole at	vable canonica with a transfe oserver gain to	I form and the er function	
		13th	Pole-zero offset, o optimal regulators	controllability / obs., and the Kalmar	oservability, n filter	Can explain the relationship between pole-zero offset and the establishing controllability and observability Can explain the control implications for optimal regulators and the Kalman filter Can explain the composition of the aggregation system's poles Can explain the stability conditions of the aggregation system			
		14th	State feedback co instruments (aggr		observation				
		15th	Exercise			Do exercises to review content from lectures in the second semester.			
		16th	Final exam		·				
Evaluati	on Met	hod and '	Weight (%)						
	Ex	kamination	Exercise	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	
Subtotal	80)	20	0	0	0	0	100	
Basic Proficiency	y 0		0	0	0	0	0	0	
Specialized Proficiency	y 80)	20	0	0	0	0	100	
Cross Area Proficiency			0	0	0	0	0	0	

А	ss Format Lection Mechanisms Engi		Year	2021			ourse Fitle	Advanced Instrumentation Engineering
Course	Informa	tion	<u> </u>					
Course Co	ode	0019			Course Categor	ry	Specializ	ed / Elective
Class Forr	mat	Lecture			Credits		Academi	c Credit: 2
Departme	ent	Mechani Engineer	cal and Electronic ring	c System	Student Grade		Adv. 1st	
Term		First Ser			Classes per We	eek	2	
Textbook								
Teaching Instructor		IWANO '	Vulsi					
	Objectiv		TUKI					
The goal i learned.	is to achie	ve a compr		_	_			priately apply the knowledge
(2) Measi	irement sy	stems ana	lysis and charact	andards, and statis erization (system e c principles and the	evaluation metho	ods and	digital si	ignal processing)
Rubric	as basic iii	easuremen	c principles (basi	c principles and the	ен аррисацонѕ)			
KUDITC			Ideal Level		Standard Level	l		Unacceptable Level
			Understand ar	nd can apply	Understand me		nent data	<u> </u>
Achievem	ent 1			data processing ndards, and	processing (units and standards, and statistical data processing).			measurement data processing (units and standards, and statistical data processing).
Achievem	ent 2		and character	systems analysis ization (system ethods, and digital	systems analysis and characterization (system evaluation methods, and digital evaluation			Do not understand measurement systems analysis and characterization (system Il evaluation methods, and digital signal processing).
Achievem	ent 3			measurement sic principles and	Understand va measurement principles and tapplications).	principle		Do not understand various basic measurement principles (basic principles and their applications).
Assigne	d Depar	tment Ob	jectives					
学習・教育	育目標 (F) ≒	学習・教育目	標 (H)					
Outline		need for systems 1) briefly engineer system a	computer-based This lecture will review the basiing, units and st	l measurement aut l c items common to andards, measurer	comation and on various applied ment data proce	iline and d measu essing, n	d in-proce Irements neasuren	 In addition, there is an increasing ess measurement in production (what is measurement nent system characteristics and ment principles (basic principles of
Style		Classes	will be held in a l	ecture style.				
Notice		guarante	eed in classes and ent reports.	l amount to 90 hou d the standard self r more of classes v	-study time requ	uired for	r pre-stu	s include the learning time dy / review, and completing grade.
Charact	eristics	of Class /	Division in Le	earning				
□ Active	Learning		☐ Aided by I	СТ	☐ Applicable t	to Remo	te Class	☐ Instructor Professionally Experienced
Course	Plan							
Course	. idii		Theme			Goals		
		150	Introduction What is metrolog meaning of mea	gy? Study the enging surement, instrument of the purpose of reasons.	entation,			at metrology is and its basic
		2nd	Measurement ba Study units and of SI base units the basic method	nsics standards, and soli and dimensional ar ds of measurement stem planning and	idify knowledge nalysis. Study t and			l standards and understand SI dimensional analysis.
1st Semeste r	1st Quarter	3rd	Measurement da Study measurem accuracy, identif	nta error and accur nent errors and me by the causes of err rrors and improve	asurement ors, and study			asurement errors and accuracy, uce error.
		4th	Study the statist	eta statistical proce ical processing of r he correct data pro h examples.	neasurement		stand the rement o	statistical processing of lata.
		5th	Study the basic of analysis of meas	stems and system configuration and c surement systems, alysis techniques.	characteristic			basic configuration and nalysis of measurement systems.
		6th	Mechanical sense Study mechanica gears, and lever	al expánsion princip	oles (screws,	Unders (screw	stand me s, gears,	chanical 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 magnetic	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

Д	ıkashi Co	ollege	Year	2021		Cour		Random Signal Analysis		
Course	Informa	tion								
Course Co	ode	0020			Course Catego	ry Sp	ecialize	d / Elective		
Class For	mat	Lecture			Credits	Aca	ademic	Credit: 2		
Departme	ent	Mechanical Engineerin	l and Electronic g	System	Student Grade	Ad	v. 1st			
Term		Second Se	mester		Classes per We	eek 2				
Textbook Teaching										
Instructo		INOUE Kaz	runari							
	Objectiv	-								
(1) Can e (2) Can c	xplain bas alculate q	ic issues and leues using p	arameters such	as average arriva	ıl and average s	ervice in re	elátion t	probability theory to queuing theory. Plation to reliability analysis.		
Rubric										
			Ideal Level		Standard Level			Unacceptable Level		
Achievem	ent 1		using the basic	ulate probability rules.	Can explain the and calculate the using basic rule	he probabi es.	lity	Cannot explain the basics issues and calculate the probability using basic rules.		
Achievem	ent 2		Can fully calcul parameters sud arrival and ave		Can calculate of parameters sugarrival and ave	ch as avera	ağe	Cannot calculate queues using parameters.		
Achievem	ent 3		Fully understar calculate the fa expectancy, an series-parallel systems.	ilure rate, life Id reliability of	Understand ho failure rate, life reliability of ser redundant syst	e expectan	cy, and	Do not understand how to calculate the failure rate, life expectancy, and reliability of series-parallel and redundant systems.		
		tment Obje								
			《(F) 学習・教育	目標 (H)						
Teachin	ig Metho			umbersome and large amounts of data requires statistical thinking. Stati						
Outline		Handling co to the faste irregular da	est possible solı	d large amounts o ution. This course	f data requires s will be held in le	statistical t ecture and	hinking exercis	. Statistical analysis of data leads e formats while introducing		
Style		From week on each ite	cs 1 to 15, class em set in the Co	ses will be held in lourse Objectives a	lecture and exer	cise forma	its. Ass	ignment exercises will be based		
Notice		guaranteed assignmen	d in classes and t reports.	amount to 90 hou the standard self- more of classes w	-study time requ	uired for pi	re-study	nclude the learning time y / review, and completing rade.		
Charact	eristics	of Class / D	ivision in Le	arning						
□ Active	Learning		☐ Aided by IC	Т	☐ Applicable t	o Remote	Class	☐ Instructor Professionally Experienced		
Course	Dlan									
Course	lull	ТЬ	neme			Goals				
		1ct Ex		nce, what is cover lation method.	red in this	Understar	nd the g	guidance, what is covered in this uation method.		
		2nd pr Ex	obability, indep obability. oplain binding e	tical handling of evendence and dependence and dependence and dependence tayes' theorem.	endency, and	probability probability Understar	y, inder y. nd bindi	statistical handling of events and bendence and dependency, and ling events, independence, ability, and Bayes' theorem.		
		and Ur	nderstand varia	nce and deviation, icators of scattere		Understar	nd varia	nnce and deviation, and Z- dicators of scattered data.		
	3rd Quarter	or or	thogonality and	ganize 2D data ar correlation.	nd about	about orth	nogona	how to organize 2D data and lity and correlation.		
2nd			kercise 1 ubmit within cla	ss time		Exercise 1 Submit w		ass time		
Semeste 6th		6th Ex	xplain about calo ethods and nois	culating using mov se reduction.	ving average			it calculating using moving s and noise reduction.		
7th			plain signals ar lculations.	nd noise, and S/N	ratio decibel	Understar decibel ca	nd signa Ilculatio	als and noise, and S/N rations.		
		8th Ex	xplain Type 1 ar	nd Type 2 errors, a	and testing.	testing.		e 1 and Type 2 errors, and		
		9th Ex	ercise 2 ubmit within cla	ss time		Exercise 2 Submit w		ass time		
	4th Quarter	10th Ex	ubmit within class time xplain the bathtub curve, failure rate for a period f time, and life expectancy. xplain the calculation of the average remaining bunt and reliability from the initial number and illure rate.			Submit within class time Understand the bathtub curve, failure rate for a period of time, and life expectancy. Understand the calculation of the average remaining count and reliability from the initial number and failure rate.				

	11th	Explain the calcula and series system	ation of the reliab s and redundant	ility of parallel configurations.	Understand the c parallel and serie configurations.	alculation of the s systems and re	reliability of edundant	
	12th	Exercise 3 Submit within clas	ss time		Exercise 3 Submit within class time			
	13th	Program developn notebook Explain data analy DataFrame creation	sis using pandas	- , ,	Program development environment using Jupyter notebook Understand program data analysis using pandas, and DataFrame creation and editing.			
	14th	Explain visualization graph creation.	on with Matplotlib	and various	Understand visua various graph cre		plotlib and	
	15th	Exercise 4 Submit within clas	ss time		Exercise 4 Submit within class time			
	16th	No final exam			No final exam			
Evaluation M	1ethod and	Weight (%)						
	Exercise						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 Co	llege		Year	2021			ourse Γitle	Advanced Electromagnetics
Course 3	Informat	ion							
Course Co	ode	0021				Course Catego	ry	Specialize	d / Elective
Class Forr	mat	Lecture				Credits		Academic	Credit: 2
Departme	ent	Mechanio Engineer		nd Electronic S	System	Student Grade		Adv. 1st	
Term		Second 9	Seme	ester		Classes per We	eek	2	
Textbook Teaching	and/or Materials								
Instructor		KAJIMUF	RA Yo	shihiro					
Course	<u>Objective</u>	es							
Evaluatior fields duri Evaluatior	n item (2) Ing polariza n item (3)	Understand Ition. Can formul	the ate la	nature of die aws and prob		olve problems r nd magnetic fiel	elated t Id phen	o the qua omena an	oplied problems. ntitative evaluation of electric d solve applied problems.
Rubric									
			Id	eal Level		Standard Level			Unacceptable Level
Achievem	ent 1		Can formulate laws and problems of electrostatic field phenomena and solve applied			Can formulate problems of elephenomena an problems.	ectrosta	tic field	Cannot formulate laws and problems of electrostatic field phenomena and solve problems.
Achievem	ent 2		die pro qu ele	nderstand the electrics and coollems relate antitative evalution did did did did did did did did did di	can solve applied d to the aluation of	Understand the dielectrics and problems relate quantitative evelectric fields dipolarization.	can soled to the caluation	ve e	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		pro	an formulate la oblems of cur agnetic field polive applied pr	Can formulate laws and problems of current and magnetic field phenomena and solve problems.			Cannot formulate laws and problems of current and magnetic field phenomena and solve problems.	
				an derive Max ectromagnetic live applied pr	equations and	Can derive Max electromagneti solve problems	c equat	ions and	Cannot derive Maxwell's electromagnetic equations and solve problems.
Assigne	d Depart	ment Ob	ject	jectives					
学習・教育	百標 (D) 学	学習・教育目	- 標 (F	-) 学習・教育目	目標 (H)				
Teachin	g Metho	d							
Outline		This cou Departm provide ((related for the A electrom	ent a unive to pe dvan agne	and aims to fuersity-level les eripheral basic nce Courses, it etics at a unive	orther enhance an sons, however so academic ability, t is desirable to m	d develop the c me parts were etc.), or simpli aintain the acac n name and rea	content. either of fied by demic a lity. The	Electrom mitted du relaxing t bility for t erefore, th	Computer Engineering agnetics I and II also largely e to academic constraints heir stricter handling. However basic subjects like are course aims to further raise the
Style		The eval	uatio e. Har	n will be base	ed 100% on perio	dic exam scores	s. The p	ass mark	is a score of 60 or more in total n, and specific computational
Notice		guarante assignme at our so	eed ir ent re :hool'	n classes and eports. It is re 's Electrical ar	the standard self-	study time requudents have stu neering Departi	uired for udied El ment pr	r pre-stud lectromag ior to taki	include the learning time y / review, and completing netics I and II (in years 3 and 4) ng this course. rade.
Charact	eristics c	of Class /	Div	ision in Lea	arning				
□ Active	Learning			Aided by IC	Г	☐ Applicable t	o Remo	te Class	☐ Instructor Professionally Experienced
		1							
Course	Plan								
			Then	ne			Goals		
2nd Semeste	3rd Quarter	1st	Expla and e phen poter elect	electric power nomena. Defin ntial of an ele ric field as an	in a vacuum virtual concepts o lines as fields of e the electric pote ctric field, and cor electric potential lculations in this o	electrical ential as nsider the gradient. Use	and ele phenor potent	ectric pow mena. Car ial of an e	virtual concepts of electric fields er lines as fields of electrical n define the electric potential as lectric field, and consider the in electric potential gradient.
	tline Depart provide (relate for the electro level was a saign at our Studer assign at our Studer provide Durse Plan Depart provide (relate for the electro level was a saign at our Studer provide for the problem are provided assignment of the problem are provided assignment our studer our student		Explain be used of its	sed when calc s meaning in p	eorem, which is n culating electric fie physics and applic ntroduce example	elds, in terms ation to	likely to terms	o be used of its mea	uss's theorem", which is most when calculating electric fields, in ning in physics and application to solve example problems.

	3rd	Laplace's and Poisson's equations Examine the divergence of electric power lines and vectors in both physical and mathematical terms by introducing divergence (div). Also, explain example uses for Laplace's and Poisson's equations, which are the most versatile and well- known equations for describing electrostatic fields.	Can examine the divergence of electric power lines and vectors in both physical and mathematical terms by introducing divergence (div). Also understand how to use Laplace's and Poisson's equations, which are the most versatile and well-known equations for describing electrostatic fields.
	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.
4th	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.
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 Max and electromagne Solve Maxwell's e simultaneous diffe electromagnetic v a result of doing t characteristics of	etic waves lectromagnetic ec erential equations vaves' presence a this. Also explain	uations as and calculate nd velocity as the basic	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							
Evaluati	on M	ethod 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				Year	2021			ourse A	Advanced Strength of Materials	
Course	Informa	tion								
Course Co	ode	0022				Course Categor	ry	Specialized	d / Elective	
Class Forr	mat	Lecture				Credits		Academic	Credit: 2	
Departme	ent	Mechani Engineer		nd Electronic	System	Student Grade	Adv. 1st			
Term		Second 9	Seme	ester		Classes per We	ek	2		
Textbook Teaching										
Instructor		MORISH	ITA 1	Tomohiro						
Course	Objectiv	es								
them to b 2) Unders dimension 3) Unders various pr 4) Unders intensity of	pasic problestand the the last probler stand the aroblems of stand the realculation	ems. basic issues ns. advanced is strength o nechanical	relat sues f mat beha	ted to flat plated to stated to stated to stated to stated wight to stated to stated to state	nte bending proble	ms, and can cor lastic moduli, ar	mpare nd can	and examinuse them t	al stress state and can apply ne one-dimensional and two- o three-dimensionally examine yze them, and can apply them to	
Rubric										
			Id	eal Level		Standard Level			Unacceptable Level	
Achievem	hievement 1 Systematically un basic formula for stress and can ap problems.					Can apply various multiaxial stress problems.			Cannot apply various formulae for multiaxial stress to basic problems.	
Achievem	schievement 2 relat prob diffe				e basics issues plate bending can explain the veen beams.	Can calculate s deflection of ba using formula r plate bending p	asic pro related	blems by to flat	Cannot calculate stress and deflection of basic problems related to flat plate bending.	
Achievem	related to selastic modular three-dime				e advanced issues ss, strain, and and use them to anally examine ms of strength of				Do not understand the advanced issues related to stress, strain, and elastic moduli and remain limited to only a one-dimensional understanding.	
					elastoplasticity of materials and behave			terials and	Do not understand the mechanical phenomena related to elastoplasticity of materials.	
			stı	rength of ma	rious problems of terials with n logical thinking.	Can explain bar formulae to oth problems of str materials.	ners or	ı various	Cannot explain to others the formation of various formulae and examples of their use on various problems of strength of materials.	
Assigne	d Depar	tment Ob	ject	ives						
			1標 (F	-) 学習・教育	目標 (H)					
Teachin Outline Style	g Metho	The aim independ on the y students study.	dently ear 3 will	y and continu 's Strength c learn more a	uously learn relate of Materials I, year	d matters, think 4's Strength of nd prepare for Fi	logica Materi racture	Illy, and havials II, and Mechanics	mechanical components, ve technical discussions. Based year 5's Strength of Materials III, in the second year of graduate	
22,.0		This cou	rse's	content will	amount to 90 hou	rs of study in to	tal. Th	ese hours i	nclude the learning time	
Notice	guaranteed in classes and the standard study time requassignment reports. Students should try to think and ur Students who miss 1/3 or more of classes will not be el							e-study / re for themsel	eview, and completing ves.	
Charact	eristics o	of Class /	Div	ision in Le	arning					
□ Active	Learning			Aided by IC	T	☐ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced	
Course	Plan									
304.30			Then	ne			Goals			
2nd Semeste	3rd	1st		ew of multiax	kial stress		Can si strain multia equat	and displace ixial stress ions in a re	le application example of stress- cement-strain relations in the state. Can use equilibrium ctangular coordinate system. Can okes equations.	
r	Quarter	2nd	Revie prob		al symmetry and	axisymmetric	Can e	xplain the s formula for	symmetry and structure of the thick spherical shells and thick nternal and external pressures	

	3rd	Review of polar coordinates		spherical coordin	c formula in cylindrical and ate systems. Can transform from a rectangular coordinate	
	4th	Flat plate bending (1): Beams and	flat plates	 	similarities and extensibility of	
	5th	Flat plate bending (2): Basic formurectangular plates	la for	bending rectangu	nandling of unknown functions in ular plates and can explain the the basic formula.	
	6th	Flat plate bending (3): Stress and or rectangular plates	deflection of	Can apply the basic formula for rectangular plates to basic problems, and calculate stress and deflection.		
	7th	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.	
	8th	Review of plane stress and plane st	train	formulae for stre and principal and also explain the of formulae for stra	coordinate transformation sses in the plane stress states I maximum shear stresses. Can coordinate transformation ins in plane strain states and ximum shear strains.	
	9th	Stress and strain (1): Direction cos coordinate transformations	ines and	Can use direction coordinate transf	cosines to describe stress ormations.	
	10th	Stress and strain (2): Stress		maximum shear	calculation of principal and stresses in a three-dimensional explain stress invariants.	
	11th	Stress and strain (3): Strain, strain multiaxial stress, and yield criterion	energy at	formula for strain deformation. Car	coordinate transformation n in three-dimensional n calculate strain energy in a al stress state, and apply it to	
4th Quarter	12th	Stress and strain (4): Stress-strain	equation		ralized stress-strain relations and lastic modulus for anisotropic	
	13th	Elastoplastic problems (1): Materia torsion and bending of elastic-perfebodies	l models and ectly plastic		elationship between load and ne torsion and bending of elastic- podies.	
	14th	Elastoplastic problems (2): Limit lo residual stress caused by plastic de	ads and formation	the limit loads in	imit loads in combination rods, beams, and plastic joints. Can stress caused by plastic	
	15th	Elastoplastic problems (3): Spheric and axisymmetric problems	al symmetry	stress of elastic-	vield start condition and residual perfectly plastic spherical shells, tating circular plates.	
	16th	Final exam				
Evaluation Met	hod and	Weight (%)				
		Examination	Exercise		Total	
Subtotal		80	20		100	
Basic Proficiency		0			0	
Specialized Proficie	ncy	80	15		95	
Cross Area Proficie	ncy	0	5		5	

А	kashi Co	ollege		Year	2021			ourse Title	Production Systems	
Course	Informa	tion			•		•			
Course Co		0023				Course Categor	γ !	Specialize	ed / Elective	
Class Forr	mat	Lecture				Credits	,	Academi	c Credit: 2	
Departme	ent	Mechan Enginee		nd Electronic	System	Student Grade		Adv. 1st		
Term		First Se	meste	er		Classes per We	ek 2	2		
Textbook Teaching										
Instructor		ONISHI	Shos	aku						
Course	Objectiv	es								
Comprehe elements, 2) Have t 3) Acquire content fa	ensibly und, when the he skills to e skills thra alls within	derstand the required for the contract to the	ne cor unction emb ts and sic end	ncepts and mon that is the pody the above discrepance in the above discrepance in ancept and managements.	ethods of specific starting point for e in 1). be able to design	function deployr design activities from a compreh	ment, for has be nensive a	ocusing of en provious and broa	a production system. In mechanical and electrical ded or found by oneself. d perspective, since this course's as the basis of combined fields	
Rubric										
			Id	leal Level		Standard Level			Unacceptable Level	
Achievem	ent 1		ac ar bu Up fu cc sp fo	ctivities in a banimportant a uilding a produce pon doing so, nction by one omprehensibly oncepts and recific function	y understand the nethods of n deployment, echanical and	Understand tha activities in a brain important arbuilding a produpon doing so, provided requirunderstand the methods of spedeployment, for mechanical and elements.	road seind majouction segardied funce concepections of the concepections of the consing of the consistency of the	nse are or part of cystem. ing the tion, ots and ontion	Do not fully understand that the design activities in a broad sense are an important and major part of building a production system. In addition, regarding the provided required function, do not fully understand the concepts and methods of specific function deployment, focusing on mechanical and electrical elements.	
Achievement 2					quired function and realize and unction	Can realize specific function deployment when the required function is provided.			Cannot fully realize specific function deployment when the required function is provided.	
Achievement 3				an design from Emprehensive Erspective.		While insufficient, can work towards designing from a comprehensive and broad perspective.			Do not work toward designing from a comprehensive and broad perspective.	
Assigne	d Depar	tment Ol	bject	ectives						
学習・教育	育目標 (F) ≒	学習・教育目	目標 (⊦	H)						
Teachin	g Metho	od								
Outline		Manufac design i This cou part of l This cou broad se	cturin n a bi irse fe buildii irse v ense)	g requires an road sense, t eatures lectuing a productivill be taught, etc. in a cor	hat starts with ide res focused on ho on system, and ai by faculty membe npany and will ma	manufacturing sentifying the cust we to design in a ms to acquire the ers who have becake use of their e	systems tomer n broad s ne know en resp experier	s (production (production) sense, which is the consible for the consideration (production).	ction systems), with a focus on nich is an important and major ncerned with this. or planning, design (design in a	
Style Notice		distribut To ensu lesson. In addit will be g assignm This cou guarant assignm Student Overall	ted as ire that ion, in given nents. irse's eed in ent r s who evalu	s necessary. at the course n order to en report assign content will n classes and eports. o miss 1/3 or	content is both u hance understand ments on themes amount to 90 hou the standard self more of classes v	nderstood and le ing toward a cor including social irs of study in tot -study time requ vill not be eligible	earned, mpreher issues a tal. The aired for e for a p	students nsive and as well as se hours pre-stud passing g	te design process' key parts. the second half, handouts will be should pre-study and review each d broad manufacturing, students is design. They must submit all include the learning time dy / review, and completing prade. 0.4 + Exam (final) × 0.4 +	
Charact	eristics			ision in Le	arning					
☐ Active				Aided by IC		☐ Applicable to	o Remo	te Class	☐ Instructor Professionally Experienced	
			•							
Course	Plan		<u> </u>							
1st Semeste	1st	1st	Lecti (The	ntation ure on an out	line of production between producti road sense)	systems. on systems	conduction can als (the rel	ted. o explair lationship	aims and how classes will be an an outline of a production system between the production system in a broad sense).	
r	Quarter	2nd	Lecti desig		gnificance of desig	n: "What is	Can exp develop explain	plain attitudes, basic perspectives, and the pment of machinery and design. Can also the necessity for sustainable development on the significance of design.		

		3rd	Lecture decide o	on the process n and what ar	s of design: " e the steps?"	What do you	Can ex decide	xplain the overall e.	process and	matters to		
		4th	Lecture decide o	on the process n and what ar	s of design: " re the steps?'	What do you	desigr produ proces	xplain topics such n, development pl ction, inspection, sses (including pa incement).	anning, deta testing, and	iled design, post-design		
		5th	Lecture ideas?"	on design con	cepts: "How	do you create	overvi	Can explain attitudes, way of thinking, creating an overview and idea of value offered to customer at the concept design stage.				
		6th	Lecture ideas?" (on design con (Part 2)	cepts: "How	do you create	Can ex creating struct	xplain the require ng an overview fo ures.	d function's or mechanism	concept and ns and		
		7th		on function ar you give forn			basic t	xplain topics such functions and me onics, software, fu yment, and the fu	chanical elem unction-to-m	nents, ´ echanism		
		8th	Midterm	exam				nswer questions of alf of the semester		arned in the		
		9th	answers Lecture	he exam resu on compliance tions, and sta	conforming		Can ex	xplain the content xplain compliance ards, specification	s importanc	e, laws,		
		10th	Lecture (making (orders).	on matters re quotations , si	lating to cont igning contrac	racts (when cts, and placi	ng basic l when	Can explain the key points for making quotations, basic knowledge of legal matters, things to note when making quotation, signing contracts, and placing orders.				
		11th	Lecture (techniqu	on production es for produc	systems and tion and proc	control essing.	produ	xplain an outline oction control, qua ol, measurement a ologies.	lity assuranc	e and quality		
	2nd Quarter	12th	Lecture	on maintenan	ce.		metho featur	Can explain an overview of maintenance, methods of preventive maintenance and their features, facility diagnostic techniques, and life cycle assessments.				
		13th	Lecture manager	on safety, sec ment.	urity, and pro	oject	safety	Can explain social requirements and intrinsic safety. Can explain an outline of project management. Can explain the general concept of universal design.				
		14th	Lecture	on universal d	lesign.							
		15th	Lecture :	summarizing t content from	the productio weeks 1 to 1	n system .4.	Can ex	xplain the main a	nd important	parts of this		
		16th	Final exa	am			Can a	nswer questions of d half of the seme	on content le ester.	arned in the		
Evaluatio	n Meth	od and Weight Presentatio n		(%)								
	Mid-ter exam			Mutual Evaluations between students	Behavior	Portfolio	Other	Final exam	Report	Total		
Subtotal	40	10 0		0	0	0	0	40	20	100		
Basic Proficiency	0	0 0		0	0	0	0	0	0	0		
Specialized Proficiency	40		0	0	0	0	0	40	20	100		
Cross Area	0		0	0	0	0	0	0	0	0		

А	.kashi Co	ollege		Year	2021			ourse Title	Energy Technology I
	Informa				1			riue	
Course Co		0024				Course Categor		Specializ	ed / Elective
Class Forr		Lecture				Credits	,	 	c Credit: 2
Departme	ent	Mechani Engineei		nd Electronic	System	Student Grade		Adv. 1st	
Term		Second S		ster		Classes per We	ek	2	
Textbook									
Teaching Instructor		KANEDA	Masa	avuki					
	Objectiv			7					
The goal is to be able to understand and calculate the following for the numerical analysis of heat fluids in energy engineering (1) Understand the basic equation of heat fluid analysis. (2) Understand the discretization method of basic equations. (3) Understand the HSMAC method. (4) Set a problem and perform simulations on one's own. (5) Present answers to one's own problem through presentations.								fluids in energy engineering.	
Rubric									
			Ide	eal Level		Standard Level			Unacceptable Level
Achievem	ent 1		the		nd and can derive 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		me	ethod of bas	e discretization ic equations and m on its own.	Understand the method of basi	e discre c equa	etization tions.	Do not understand the discretization method of basic equations.
Achievem	ent 3		an		e HSMAC method am it on one's	Understand the method.	HSMA	AC	Do not understand the HSMAC method.
			sin		lem, perform nd analyze data	Can set a probl simple simulati own.			Cannot set a problem and perform simple simulations on one's own.
			to in	one's own p	clearly present the answers ne's own problem in English one's own problem in easy-to-understand entation.			ers to a	Cannot present the answers one's own problem in a presentation.
Assigne	d Depar	tment Ob	oject						
学習・教育	計標 (D) →	学習・教育目	目標 (F	(F) 学習・教育目標 (H)					
Teachin	g Metho	d							
Outline		energy t major ef fluid are course,	hroug ffect o widel studer	gh generator on performar ly conductec nts will learr	rs. In addition, honce in fuel cells, end with the aim of it about the HSMA	w the movement tc. In developing reducing develop C method, which	of wa energ	ter and ellowing termination to the second termination ter	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 o	and learn how to analyze incompressible fluids. If of the class is made up of lecture-style sessions. In the second half, students will conduct thile discussing important matters related to energy engineering.					d half, students will conduct
Notice		This cou guarante assignm thermod students conducte	rse's eed in ent re lynam s need ed in l	content will classes and eports. While lics, thoroug to have a r English.	amount to 90 hou the standard selic it is desirable for h reviewing of the	urs of study in to f-study time requ r students to hav e lessons will hel ge of C language	tal. Thuired for a ba e a ba p stude e. In ac	ese hours or pre-stu- sic knowle ents unde ddition, th	s include the learning time dy / review, and completing edge of fluid dynamics and rrstand the content. Furthermore, iis course will fundamentally be
Charact	eristics (of Class /	' Divi	ision in Le	arning	1			
□ Active	Learning			Aided by IC	T	☐ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced
Course	Dlan								
Course	1 1011		Them	ne			Goals		
		1st			or heat fluid simu	lation (1)	Under	stand the	equations of the fluid continuum ion of equations of motion.
	2nd			equations fo	or heat fluid simu	lation (2)	Under	stand the	derivation of fluid equations of lations of energy.
2nd Semeste	3rd Quarter	3rd	Basic	equations fo	or heat fluid simu	lation (3)	metho	od of the E	e energy equation of fluid to one led fluid. Also, understand the Boussinesq approximation as a loyancy terms.
r	Quarter	4th	Abou	t nondimens	sionalizing basic e	quations	nondii	mensional	significance of lizing basic equations, and how to ionless.
		5th	Discr	etization me	thod of basic equ	ations (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.			
		8th	HSMAC method				Understand the HSMAC method to solve the Poisson's equation on pressure using Newton's method.			
		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	Can review the engineering problems on one's own, and can discuss the problems proposed with teachers and set an appropriate 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							
Evaluat	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	ed 0		30	70	0	0	0	100		
Cross Are Proficienc			0	0	0	0	0	0		

А	kashi Co	ollege	Year	2021		Course Title	Information Communication Systems		
Course	Informa	tion							
Course Co	ode	0025			Course Category	y Specializ	zed / Elective		
Class Forr	mat	Lecture			Credits	Academ	ic Credit: 2		
Departme	ent	Mechanic Engineer	cal and Electronic ing	System	Student Grade	Adv. 1st	:		
Term		First Sen	nester		Classes per Wee	Week 2			
Textbook Teaching	Materials			を用いて講義を行う。	。参考図書:横尾芽	英俊「情報理論 <i>σ</i>	D基礎」共立出版		
Instructor		TAKITA N	Makoto						
1)情報源2)空調方	Objectiv 京符号化について 式について はり訂正符号 と み符号とを	ついて説明が [*] こその種類と	できる。(D) 持徴を理解する。 明できる。(D) 式について定性的((F) こ説明できる。(H)				
Rubric									
_			理想的な到達レ		標準的な到達レベ		未到達レベルの目安		
評価項目1			正確に理解し,		情報源符号化と変理解し、説明でき	きる	理解できない.		
評価項目2			各種誤り訂止符 理解し,説明で	号について正確に きる.	各種誤り訂正符号 , 説明できる.	号について埋解し	各種誤り訂正符号について理解できない.		
評価項目3			必要数の課題レ 成できる.	ポートを正確に作	必要数の課題レポる.	ペートを作成でき	必要数の課題レポートを作成でき ない.		
		tment Ob							
			標 (F) 学習・教育	目標 (H)					
Геасhin	g Metho		トラーナの甘葉!」	シスにおいらなロル・・	亦⊞ナ→ノ-〜・・→-ハ	明知し + の十二十	- 3つの甘醂は火気ナッタに吹かり		
Outline		化について	システムの基礎とな て学ぶ。さらに畳ん ついての基本的な	み込み符号と変調方:	役調方式について概 式を組み合わせた符	機観したのち、も 符号化変調方式に	5う一つの基礎技術である通信路符号 開れ、情報通信で用いられる誤り訂		
Style		情報源符号 を取り入れ 連絡員: プ	れながら,解説して	Oいて,スライドやだいく.自己学習が	板書を利用しながら 重要な科目である <i>の</i>	ら解説していく. Dで,予習復習を	その後誤り訂正符号化について演習 としっかりやりながら取り組むこと.		
Notice		本科目は、	授業で保証する等相当する学習内容	学習時間と、予習・行である。 (学) (割合) 1/3以上の		- 卜作成に必要な	は標準的な自己学習時間の総計が、		
Charact	eristics		Division in Le	, , ,	> 10011				
☐ Active		,	☐ Aided by I		☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced		
Course	Plan								
		-	Theme		(Goals			
		1st	通信システムのモ 、通信路符号化、	情報源符号化)の概 デルについて説明し 変調方式の位置付け モデルについて学ぶ	、情報源符号化 を行う。	通信システムにで 信路符号化,変調	ついて説明できる. 情報源符号化, 通 間方式の位置づけを理解できる.		
		2nd '	情報理論(情報源符 情報源符号化の役割 方法を学ぶ。	符号化)の概略 2 割と意義を理解し、	情報源符号化の	情報源符号化の征	役割と意義を説明できる.		
		3rd	通信工学(変調方	意義を理解し、アナ	ログ・ディジタ	変調方式の役割。	と意義を説明できる.		
	1st	4th	通信工学(変調方 通信路の雑音と多	式)の概略 2 元変調方式について	説明する。	雑音がある場合の	の変調方式について説明できる.		
	Quarter	5th	これまでの内容の これまでの内容を を整理する。	まとめ まとめ、情報理論と	通信工学の概略 ・	情報理論と通信]	工学の位置付けを理解し,説明できる		
1st Semeste r		6th	通信路符号化定理 通信システムの通信システムの通行ででいて説明する	言路をモデル化し、 る。	通信路符号化定	通信路符号化定理	里について説明できる.		
	7th		誤り訂正符号(通		その種類につい	誤り訂正符号の行	殳割と意義を理解できる.		
		8th	 線形符号	符号化と復号を通じ 法について学ぶ。	て、線形符号の	線形符号の符号(とと復号方法を説明できる.		
	9th		ハミング符号、巡回		と巡回符号につ	巡回符号の性質を	を説明できる.		
	2nd Quarter	10th	演習とこれまでの「 誤り訂正符号化に [*] 。通信システムの [*]	内容のまとめ ついて、実例を通じ 一連の流れを把握す	て理解を深めるる。	与えられた課題を	をやりとげることができる.		
			畳み込み符号 1 畳み込み符号の符	号化方法について学	<u></u> ぶ。	畳み込み符号の	符号化について説明できる.		

		12th	畳み込み符号 2 畳み込み符号の	:)復号方法について学	ヹ゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙	畳み込み符号の復	号方法について	て理解できる.	
	符号化変調方式 1 13th 多元変調方式について復習し、符号化変調方式の役割と意義を学ぶ。					 符号化変調方式の役割と意義について説明できる. 			
		14th	符号化変調方式 畳み込み符号化 調方式の符号化	、2 ごとディジタル変調を ご方法について学ぶ。	符号化変調方式の	符号化変調方式の符号化方法を説明できる.			
		15th	総復習 これまで学んて	ごきたことを概観し理	理解を定着させる。	与えられた課題をやりとげることができる.			
		16th	期末試験			60点以上を取得する.			
Evaluation	on M	ethod and	Weight (%)						
		試験	発表	相互評価	態度	ポートフォリオ	その他	Total	
Subtotal		70	0	0	0	30	0	100	
基礎的能力	E力 0 0 0 0				0	0	0	0	
専門的能力	E力 70 0 0 0				0	30	0	100	
分野横断的	能力	0	0	0	0	0	0	0	

Al	kashi Co	llege	Year	2021		_	ourse Title	Tribology	
Course I	Informat	tion	1	•		•		•	
Course Co		0026			Course Categor	ry	Specializ	ed / Elective	
Class Forn	nat	Lecture			Credits		Academi	c Credit: 2	
Departme	nt	Mechanica Engineeri	al and Electronic	System	Student Grade		Adv. 1st		
Term		Second Se			Classes per We	s per Week 2			
Textbook Teaching I									
Instructor		ABO Masa	avoshi						
Course (•	.,,						
(1) Can de method fo (2) Can es (3) Can es	eepen und r evaluatir stablish eff	lerstanding of them in a fective use of	n appropriate m of friction and mo	riction and wear p nanner. ethods to control f methods for desi	riction and wear	such a	as lubricat	motion surfaces, and establish a ion. nt.	
Rubric			I		la	•			
			Ideal Level	adoretanding of	Standard Level			Unacceptable Level	
Achieveme	ent 1		the complex fr phenomena th	n surfaces, and thod for m in an	Can deepen un the complex fri phenomena the relative motion understand how them in an app	iction a at occu surfac w to ev	nd wear r on es and aluate	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	Can establish effective use of friction and friction wear controls such as lubrication. Understand the effective use friction and methods to cont friction and wear such as lubrication.							
Achieveme	ent 3	Can establish various guidelines Understa				e variou specific rictiona	us methods I parts of	Do not understand the various guidelines and specific methods for designing frictional parts of equipment.	
Assigned	d Depart	tment Obj	ectives						
学習・教育	目標 (D) 🗄	学習・教育目標	票 (F) 学習・教育	目標 (H)					
Teaching	g Metho								
Outline		wear phe appropria such as lu	nomena that occ te manner, and	cur on relative mo also explain the e	tion surfaces—ar ffective use of fr	nd to e	xplain hov Ind metho	ms—i.e., the complex friction and w to evaluate them in an ods to control friction and wear fic methods for designing frictional	
Style		The conte understar The repor 1) An exe take into tribology survey on soft thin I This cours Materials	ents of the reporiting. t assignments a reise about the account interfacapplication technologies. 9) An exesse is based on a	t will be instructed re as follows: contact condition le shear strength. nologies. 5) The dand greases. 7) A graine on the amound assumes stude	between two obj 3) A survey and erivation of the on the exercise on be unt of wear. 10) onts have a basic	jects. 2 summa double earing of Literate	ress of the An exer ary of var integral p design me ure resea edge of th	s, 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 eart of the Reynolds equation. 6) A ethods. 8) A study on hard and rch on tribology he following subjects: Strength of the and Engineering Design II	
Notice		Before taking the course, read the text, familiarize yourself with the content, and be prepared to ask questions during the course. This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for pre-study / review, and completing assignment reports. Students who miss 1/3 or more of classes, miss 5-10 minutes of a student's presentation, or fail to submit report will not be eligible for a passing grade.						of study in total. These hours time required for pre-study /	
Characte	eristics c	of Class /	<u>Division in Le</u>	arning	T				
□ Active	Learning	ng						☐ Instructor Professionally Experienced	
Course F	Plan	Г							
			heme			Goals			
		1st E		e of tribology, lubr	rication	Learn and ab	an outline out lubric	e of tribology, lubrication methods, cation by oil.	
2nd Semeste r	3rd Quarter	2nd E	olid surface con xplain the prope tructure and pro	I surface contact I ain the properties of solid surfaces and the sture and properties of surface layers in order			Learn about the nature of solid surfaces and		
	to properly understand tribology phenomena. Solid surface contact II					e mechanisms for two-surface e 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	eed characteristics of properties in a vac rature on friction, a	rises of friction surfaces,				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 the definition and classification of wear.			
		7th					Learn about methods.	wear maps a	nd wear testing	
	8th E			uid lubrication I kplain the physical significance of fluid lubrication nd its principles.				the physical s	significance of fluid	
				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	Explain	ary and mixed lubri the concept of boution, and boundary ties.	undary and mixed	cating	Learn about boundary and mixed lubrication.			
		11th	Boundary and mixed lubrication II Explain the types, properties, and applications of grease and solid lubricants that are used for lubrication in situations where oil cannot.				Learn about applications	Learn about the types, properties, and applications of grease and solid lubricants.		
	4th Quarter	12th	Explain reform of fricti	Surface reforming technology Explain the physical significance of surface reforming technology, its method, and examples of friction wear improvement and future orospects. Bearings design Explain the basic aspects of design using journal pearings as an example.				Learn about the physical significance of surface reforming technology, its methods, and examples of friction wear improvement.		
		13th	Explain					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 ntroduce a case from the many current echnologies where tribology plays an important ole 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	ency 30			40	10	20		0	100	
Cross Area Proficiency		0		0	0	0		0	0	

Δ	Akashi Co	ollege	Year	2021		Course Title	Advanced Electrical Circuits
Course	Informa	tion					
Course Co	ode	0027			Course Category	/ Specializ	zed / Elective
Class For	mat	Lecture			Credits	Academ	ic Credit: 2
Departme	ent	Mechani Enginee	cal and Electronic ring	System	Student Grade	Adv. 1st	t
Term		Second :	Semester		Classes per Wee	ek 2	
Textbook Teaching	and/or Materials						
Instructo		HOSOKA	AWA Atsuishi				
Course	Objectiv	'es					
2) Can pe	erform ana	lysis and d	esign of a numbe	the basis for electric r of electrical circu analyzing and desi	its. (F)	()	ultidimensional thinking. (H)
	ents will be	handed ou	ut for review purp	oses at the end of	the lecture. It is	important to c	lo them through self-study.
Rubric			T		1		
			Ideal Level		Standard Level		Unacceptable Level
Achievem	nent 1		Understand th theorems that for electrical ci can use them analysis.	form the basis ircuit analysis and	Understand the theorems that for electrical circ	orm the basis	Do not understand the various theorems that form the basis for electrical circuit analysis.
Achievem	nent 2		Can perform a design various electrical circu	complex its.	Can perform and design various b circuits.		Cannot perform analysis and design various basic electrical circuits.
Achievem	nent 3		Can select and appropriate m analyzing and electrical circu	designing	Can select and u appropriate met analyzing and de electrical circuits	hod for esigning	Cannot select and use an appropriate method for analyzing and designing electrical circuits.
Assigne	ned Department Objectives						•
学習・教育	育目標 (D)	学習・教育目	- 目標 (F) 学習・教育	門標 (H)			
Teachin	ng Metho	od					
Outline		basis for this cou	r electrical engine	ering including electors the relationship	ctronic, communi	cation, and inf	ce, and capacitance. It forms the formation engineering. The aim of n electrical circuits and to be able
Style		Classes	are mainly condu gnments every w	cted by taking not	es. There will be	handouts as n	ecessary. There will be exercises
Notice		guarante assignm This cou Electric (or have Enginee Students If studer	eed in classes and ent reports. Irse assumes stuc Circuits (compulse taken Electrical a ring II (selected for the above a long wish, they car long the average selected for	I the standard self lents have taken E ory in years 1 to 4 nd Electronics Eng or year 5) taught i basic knowledge o	-study time requi lectrical Circuits I) taught in the Ele ineering I (compount the Mechanical f the contents of exam outside of cl	red for pre-stu and II, Circuit ectrical and Co Ilsory in year Engineering D these subjects lass hours. The	e evaluation for the exam in this
Charact	eristics	-	Division in Le				5
	Learning		☐ Aided by I		☐ Applicable to	Remote Class	Instructor Professionally Experienced
Course	Plan						
			Theme		(Goals	
		1st	AC circuits				w to analyze AC circuits using the and vector locus.
		2nd	Circuit analysis a	nd miscellaneous t	theorems (1)	Inderstand ho circuit and nod	w to analyze circuits using closed e equations.
		3rd	Circuit analysis a	nd miscellaneous t	theorems (2)	Jnderstand ho superposition, heorems.	w to analyze circuits using the reciprocity, and compensation
2nd	3rd Quarter	4th	Circuit analysis a	nd miscellaneous t			e methods of circuit analysis using rton's, and Millman's theorems.
Semeste r		5th	Resonant circuits	and mutual induc	clion circuits	ircuits.	sonant and mutual induction
		6th	Three-phase AC		r	ohase AC.	Itage, currents, and power in three
		7th	Distorted wave A	AC	l C	Jnderstand vo distorted wave	Itage, currents and power in AC.
		8th	Summary of wee			Understand the content from weeks 1 to 2	
	4th	9th	One-port circuits				e-port circuits. e various parameters that represent
	Quarter	10th	Two-port circuits	3		wo-port circui	

	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 transient phenomena in circuits where both inductance and capacitance are present.		
	13th	Steady-state phenomena in distrib circuits	uted-element	Understand the basic concepts and circuit properties of transmission lines where resistance, inductance, and capacitance are distributed along lines.		
	14th	Transient phenomena in distribute circuits	d-element	Understand the transient phenomena in distributed-element 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	

A	kashi Co	ollege	Year	2021		Course Title	Advanced Heat Transfer	
Course	Informa	tion						
Course Co	ode	0028			Course Categor	y Specializ	ed / Elective	
Class Forr	mat	Lecture			Credits	Academi	c Credit: 2	
Departme	ent	Engineerin		System	Student Grade	Adv. 1st		
Term		Second Se	mester		Classes per We	ek 2		
Textbook Teaching								
Instructor	•	KUNIMINE	Kanji					
Course	Objectiv	es						
(2) Can th (3) Can th (4) Can th (5) Can th	neoreticall neoreticall neoreticall	v handle conv	vective heat trar se change heat t erial transfer.	y state heat cond nsfer. transfer.	uction.			
Rubric			Ideal Level		Ctandard Lovel		Unaccentable Lovel	
				ly handle steady	Standard Level Can theoretical	ly handlo stoads	Unacceptable Level Cannot theoretically handle	
Achievem	ent 1		and unsteady s	tate heat	and unsteady si	tate heat	steady and unsteady state heat conduction.	
Achievem	ent 2		Can theoretical convective hea sufficiently.	ly handle t transfer	Can theoretical convective heat	ly handle transfer.	Cannot theoretically handle convective heat transfer.	
Achievem	ent 3		Can theoretical change heat transufficiently.	ly handle phase ansfer	Can theoretical change heat tra	ly handle phase ansfer.	Cannot theoretically handle phase change heat transfer.	
			Can theoretical material transfer		Can theoretical material transfe		Cannot theoretically handle material transfer.	
			Can theoretical exchangers suf	ly handle heat ficiently.	Can theoretical exchangers.	ly handle heat	Cannot theoretically handle hea exchangers.	
Assiane	d Depar	tment Obje			<u>,</u>			
		<u>-::::::::::::::::::::::::::::::::::::</u>						
	g Metho							
Outline	<u> </u>	This course	e focuses on the	e theoretical hand ofer class in the Re	ling of heat trans	sfer engineering	. It will cover the more advanced	
Style		This course	e is based on He	eat Transfer (year	5, elective) taud	ght in Akashi Ko	sen Mechanical Engineering	
		This course is based on Heat Transfer (year 5, elective) taught in Akashi Kosen Mechanical Engineering Department, and assumes that students have learned the knowledge of the subject. This course's content will amount to 90 hours. These hours include the learning time guaranteed in class and the standard self-study time required for pre-study / review, and completing assignment reports. To achieve the goals, students should thoroughly pre-study and review class content for each week. Evaluations will be based on two periodic exams.						
Notice		This course and the sta To achieve Evaluation	e's content will a andard self-stude the goals, stude s will be based of	amount to 90 hou ly time required for	ve learned the klurs. These hours or pre-study / re bughly pre-study kams.	nowledge of the include the lear view, and comp and review clas	subject. ning time guaranteed in classes leting assignment reports. s content for each week.	
Notice Charact	eristics	This course and the sta To achieve Evaluation Students w	e's content will a andard self-stud the goals, stud s will be based o who miss 1/3 or	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v	ve learned the klurs. These hours or pre-study / re bughly pre-study kams.	nowledge of the include the lear view, and comp and review clas	subject. ning time guaranteed in classes leting assignment reports. s content for each week.	
		This course and the sta To achieve Evaluation Students w	e's content will a andard self-stude the goals, stude s will be based of	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v arning	ve learned the klurs. These hours or pre-study / re bughly pre-study kams.	nowledge of the lear view, and comp and review classes for a passing of the control of the contr	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade.	
Charact	Learning	This course and the sta To achieve Evaluation Students w	e's content will a andard self-stud the goals, stud s will be based o who miss 1/3 or Division in Le	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v arning	ve learned the kills. These hours or pre-study / re by pre-study / re by walls of the control of	nowledge of the lear view, and comp and review classes for a passing of the control of the contr	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade.	
Charact	Learning	This course and the sta To achieve Evaluation: Students w	e's content will andard self-stude the goals, stude will be based who miss 1/3 or Division in Le	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v arning	ve learned the kurs. These hours or pre-study / rebughly pre-study cams. vill not be eligible Applicable to	nowledge of the include the lear view, and comp and review clase for a passing on Remote Class	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade.	
Charact	Learning	This course and the state and	e's content will a andard self-stud the goals, stud s will be based o who miss 1/3 or Division in Le	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v arning	ve learned the kirs. These hours or pre-study / re register from the pre-study will not be eligible. Applicable to	nowledge of the include the lear view, and comp and review class of Remote Class Goals Understand the	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their assic laws of heat transfer, and the	
Charact	Learning	This course and the sta To achieve Evaluation: Students worf Class / D	e's content will andard self-stude the goals, stude will be based who miss 1/3 or Division in Le	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v arning	ve learned the k urs. These hours or pre-study / re ughly pre-study kams. vill not be eligible Applicable to	nowledge of the include the lear view, and comp and review classe for a passing of the companies of the comp	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their asic laws of heat transfer, and the at conduction. the problems of two-dimensional	
Charact	Learning	This course and the sta To achieve Evaluation: Students worf Class / D	e's content will andard self-stude the goals, stude will be based on the miss 1/3 or Division in Lea Aided by IC Aided by IC neme	amount to 90 hou ly time required for ents should thord on two periodic ex more of classes v arning	ve learned the k urs. These hours or pre-study / re ughly pre-study cams. vill not be eligible Applicable to	nowledge of the include the lear view, and comp and review classe for a passing on Remote Classe Goals Understand the solutions, the bequation for he Can understand steady heat cor	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their asic laws of heat transfer, and the at conduction. the problems of two-dimensional duction. problems of a lumped heat	
Charact	Learning	This course and the sta To achieve Evaluation: Students work Class / E	e's content will andard self-stude the goals, stude will be based on who miss 1/3 or Division in Le Aided by IC Aided by IC Demonstrate theory The goals, stude and the goals, stude and the goals, stude and the goals are the goals the	amount to 90 houly time required for the should thore on two periodic expresses warning	ve learned the k urs. These hours or pre-study / re ughly pre-study kams. vill not be eligible Applicable to	nowledge of the include the lear view, and comp and review class of the form a passing of the companies of t	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their asic laws of heat transfer, and the at conduction. the problems of two-dimensional duction. problems of a lumped heat law or conduction solutions for unsteady uction and the thermal conduction	
Charact	Plan 3rd	This course and the sta To achieve Evaluation: Students work Class / E	e's content will andard self-stude the goals, stud swill be based who miss 1/3 or Division in Le Aided by IC Aided by IC meme asic theory ready heat state insteady state he	amount to 90 houly time required for ents should thore on two periodic examples of classes warning.	ve learned the k urs. These hours or pre-study / re ughly pre-study cams. vill not be eligible Applicable to	nowledge of the include the lear view, and comp and review class of the form a passing of the companies of t	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their asic laws of heat transfer, and the at conduction. the problems of two-dimensional duction. problems of a lumped heat law or conduction and the thermal conduction and the thermal conduction company phase changes. governing equation for forced	
Charact Active Course 2nd Semeste	Plan 3rd	This course and the sta To achieve Evaluation: Students word Class / E	e's content will andard self-stude the goals, stude who miss 1/3 or Division in Lead Aided by IC Aided	amount to 90 houly time required for ents should thore on two periodic expresses warning. To conduction eat conduction (1)	ve learned the k urs. These hours or pre-study / re oughly pre-study cams. vill not be eligible Applicable to eory convective	nowledge of the include the lear view, and comp and review class of the form a passing of the solutions, the bequation for he can understand the steady heat corrupted by the capacity system. Understand appropriate heat cond problems that a Understand the convective heat	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their asic laws of heat transfer, and the at conduction. the problems of two-dimensional duction. problems of a lumped heat law or conduction and the thermal conduction and the thermal conduction company phase changes. governing equation for forced	
Charact Active Course 2nd Semeste	Plan 3rd	This course and the sta To achieve Evaluation: Students word Class / E	e's content will andard self-stude the goals, stude who miss 1/3 or Division in Lead Aided by IC Aided	amount to 90 houly time required for ents should thoroun two periodic examples of classes warning T conduction eat conduction (1) eat conduction (2) heat transfer the	ve learned the k urs. These hours or pre-study / re oughly pre-study cams. vill not be eligible Applicable to eory convective	nowledge of the include the lear view, and comp and review class of for a passing of the solutions, the beguation for he Can understand the capacity system Understand appstate heat cond problems that a Understand the convective heat Understand the convective heat Understand the across a plate.	differential equations and their asic laws of heat transfer, and the problems of a lumped heat law or company phase changes.	
Charact Active Course 2nd Semeste	Plan 3rd	This course and the sta To achieve Evaluation: Students work Class / E	e's content will and and ard self-stude the goals, stude will be based on the goals of the goals	amount to 90 houry time required for ents should thoroun two periodic examples of classes warning. T conduction eat conduction (1) eat conduction (2) heat transfer the lutions for forced	ve learned the k urs. These hours or pre-study / re oughly pre-study cams. vill not be eligible Applicable to eory convective onvective heat	nowledge of the include the lear view, and comp and review class of the for a passing of the convertient of the capacity system. Understand the capacity system understand the capacity system understand problems that a Understand the convective heat Understand the convective heat understand the convective heat understand the convective heat understand the across a plate. Understand the across a plate.	differential equations and their asic laws of heat transfer, and the problems of a lumped heat law or company phase changes. governing equation for forced transfer. laminar heat transfer of the flow letting assignment reports.	
Charact Active Course 2nd Semeste	Plan 3rd	This course and the sta To achieve Evaluation: Students work Class / E	e's content will and and ard self-stude the goals, stude who miss 1/3 or Division in Le. Aided by IC	amount to 90 houry time required for ents should thoroun two periodic examples of classes warning. T conduction eat conduction (1) eat conduction (2) heat transfer the lutions for forced	ve learned the k urs. These hours or pre-study / re ughly pre-study cams. vill not be eligible Applicable to Applicable to convective onvective heat	nowledge of the include the lear view, and comp and review class of the form a passing of the solutions, the beguation for he Can understand the capacity system Understand approblems that a Understand the convective heat Understand the across a plate. Can solve problems.	differential equations and their asic laws of heat transfer, and the problems of a lumped heat become and the transfer and the transfer and the transfer and the end conduction. The problems of two-dimensional duction. problems of a lumped heat become and the transfer and the transfer and the end conduction. proximation solutions for unsteady uction and the thermal conduction and the thermal co	
Charact	Plan 3rd	This course and the sta To achieve Evaluation: Students work Class / E	e's content will and and ard self-stude the goals, stude who miss 1/3 or Division in Le Aided by IC Aided by	amount to 90 houry time required for ents should thore on two periodic examples of classes warning. T conduction eat conduction (1) eat conduction (2) the heat transfer the lutions for forced conduction (2)	ve learned the k urs. These hours or pre-study / re ughly pre-study cams. vill not be eligible Applicable to Applicable to eory convective pnvective heat	nowledge of the include the lear view, and comp and review class of for a passing of the solutions, the bequation for he Can understand the capacity system. Understand approblems that a Understand the convective heat Understand the across a plate. Understand the across a plate. Can solve proble Understand nat	differential equations and their asic laws of heat transfer, and the at conduction. problems of a lumped heat law or company phase changes. governing equation for forced transfer. laminar heat transfer of the flow lems related to weeks 2 to 7.	
Charact	Plan 3rd Quarter	This course and the sta To achieve Evaluation: Students work Class / E	e's content will and and ard self-stude the goals, stude who miss 1/3 or Division in Le. Aided by IC Aided	amount to 90 houly time required for ents should thore on two periodic examples of classes warning. To conduction eat conduction (1) eat conduction (2) eat transfer the lutions for forced conductions for	ve learned the k urs. These hours or pre-study / re ughly pre-study cams. Applicable to Applicable to convective convective heat eory (1)	nowledge of the include the lear view, and comp and review class of for a passing of the solutions, the bequation for he Can understand the capacity system. Understand approblems that a condept the conderstand the conderstand the convective heat the convective heat the convective heat convective heat converse a plate. Understand the across a plate. Can solve problems that the convective heat con	differential equations and their asic laws of heat transfer, and the problems of a lumped heat law or company phase changes. governing equation for forced transfer. laminar heat transfer of the flow ems related to weeks 2 to 7. ural convective heat transfer.	
Charact	Plan 3rd Quarter	This course and the sta To achieve Evaluation: Students work Class / E	e's content will and and ard self-stude the goals, stude who miss 1/3 or Division in Le. Aided by IC Aided	amount to 90 houly time required for ents should thore on two periodic expresses warning. To conduction eat conduction (1) eat conduction (2) e heat transfer the lutions for forced contents for forced cont	ve learned the k urs. These hours or pre-study / re under pre-study / re under pre-study cams. Applicable to Applicable to convective convective convective heat eory (1) (2)	nowledge of the include the lear view, and comp and review class of for a passing of the solutions, the bequation for he Can understand the capacity system. Understand approblems that a condepto problems that a condepto p	subject. ning time guaranteed in classes leting assignment reports. s content for each week. grade. Instructor Professionally Experienced differential equations and their asic laws of heat transfer, and the at conduction. Ithe problems of two-dimensional duction. problems of a lumped heat becomes on the thermal conduction and the thermal conduction in the thermal conduction and the thermal conduction in the thermal conduction in the thermal conduction in governing equation for forced transfer. Iaminar heat transfer of the flow laminar heat transfer of the flow ems related to weeks 2 to 7. Jural convective heat transfer. film condensation theory.	

	14th	Heat exchangers	s (2)		Understand difference.	Understand logarithmic mean temperature difference.			
	15th	Heat exchangers	leat exchangers (3)			Understand temperature efficiency ratio.			
	16th	Final exam			Can solve p	Can solve 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		

A	Akashi Co	ollege	Year	2021		Course Title	Cross-Cultural Understanding	
Course	Informa	tion					-	
Course C		0031			Course Categor			
Class For		Seminar	l and Electronic	System	Credits	School C		
Departme	ent	Engineerin	g	System	Student Grade	Adv. 2nd		
Term Textbook	and/or	Year-round		ulturo & Commu	Classes per We		Practice for the TOEIC Listening	
	Matérials	and Readir	ng Test (Eihosha Yasutaka,HERB	a)	inicación (Snonaki	ısıla), Powei-Op	Practice for the TOETC Listerling	
	Objectiv		rasataka,riekb	ERT JOHN C.				
(1) 英語の (2) 異文化 (3) 知識を 課題(e-lea 授業では、	D読解力およ S S S S S S S S S S S S S	び表現力の向」 で深める(学習教 、思考する習慣 む)を確実に行 発言および討論	上(学習教育目標E (育目標B) を身につける(学 デい、期限までに する姿勢が要求さ 課題や発表ができ	・ 習教育目標A) 完成させること。	玉を認めない。			
Rubric			1					
			理想的な到達レイ		標準的な到達レイ		未到達レベルの目安	
評価項目1	_		く練習を通して	み取り、英文を書 英文読解力や作文 ちに必要な語彙力 ことができる。	英語の内容を読み く練習を通してす 力をつけるととも をつけることがで	英文読解力や作文 らに必要な語彙力	英語の内容を読み取り、英文を書く練習を通して英文読解力や作文力をつけるとともに必要な語彙力をつけることができない。	
評価項目2	2		異文化について- つけ理解を十分(る。	十分な知識を身に こ深めことができ	異文化について知 解を深めることが		異文化について知識を身につけ理 解を深めることができない。	
評価項目3	3		異文化についての 文化の違いについ うまく表現する。	ハて自分の意見を	異文化についての 文化の違いについ 表現することがで	いて自分の意見を	異文化についての知識をもとに、 文化の違いについて自分の意見を 表現することができない。	
Assigne	ed Depar	tment Obje	ectives					
			(B) 学習・教育	目標 (E)				
Teachir	ng Metho		// . = n± //> = 1±//5=±	·			+ ++ m+4.m-> -/	
Outline		ションをよ する姿勢が! 深めながら	りスムーズに行う 要求される。授業 、英語の運用能力	ためには 英語の)運用能力だけでな。 語・多文化主義を記 目的とする。また、!	く 様々か文化の	ある。また、異文化間コミュニケー 規範や価値観を知り、それらを理解 コミュニケーションについて理解を ついて、どのように身につけ、発揮	
Style		<u> </u>	グカをつける。既	・習事項を参考に英	作文の練習をする。	,適宜、課題を課		
Notice		される。	-	確実に行い、期限。 -(割合) 1/4以上の		。授業では、積極	図的に発言および討論する姿勢が要求	
Charact	teristics	of Class / D	Division in Le	arning				
□ Active	Learning		☐ Aided by IC	Т	☑ Applicable to	Remote Class	☐ Instructor Professionally Experienced	
Course	Plan							
			neme			Goals		
		1st Es	sentialism (1) 業の概要説明、T	Finding a Job (1) he Essentialist V) liew of Culture	本質主義について について理解を深	「学び、文化および文化間の相互関係 『める。	
				Finding a Job (2) Japanese People			いて理解を深める。	
		NO NO	on-essentialism	(1) Dining Out list View of Cultu	(1)	非本質主義の概要	きを学ぶ。	
	1st	4th No	on-essentialism ne Cultures in O	(2) Dining Out (2) ne	2)	共存する二つの文	て化について理解を深める。	
	Quarter	W W	hen do we acqu			「社会化」につい	って理解を深める。	
1st		6th So	ocialization (2) fferent Ways of	Business Meeting Greeting People	g (2)	人間の成長過程で	での社会化について理解を深める。	
Semeste r				1) Travel (1-1) n sources of you		人や社会は複雑な 方を理解する。	存在である」という非本質主義の見	
	8	O+b Cl	ultural Identity (mall Cultures			スモールカルチャ	について理解を深める。学ぶ。	
		Sc	ocial Change	(1) Entertainme	` ′	文化の混交を理解	 『する。	
	2nd			(2) Entertainme sonal events do y	ent (1-2) you celebrate?	ハローウィーンに	こついて学習する。	
	Quarter	TIUI W	•	otype?		固定観念及びその)種類について学ぶ。	
		12th St	Why do'we stereotype? Stereotypes (2) The Office (2) The Nature of Stereotyping		ステレオタイプを持つことの本質について学ぶ。			

		13th	Representation (1) Culture is a set of group.) Shopping (1) beliefs and pract	ices shared in a	文化表象について	学ぶ。		
		14th	Representation (2) Representation in) Shopping (2) the Media		メディア表象につい	いて学ぶ。		
			まとめ Review and 前期のまとめ	Further Practice	(1)	前期で学習したこ	とを復習しまとめ	る。	
		16th	期末試験			これまでの学習で表現することができ	 理解したことをき きる。	ちんと成果として	
			Time and Culture (Analyse cultural vi			文化同士の時間認	識の相違を学ぶ。		
			Time and Culture (Business time	(2) Entertainmer	nt (2-2)	ビジネスタイムについて学ぶ。			
		3rd	Discourse (1) Sale The word discours	s and Marketing e has many mea	(1) Ining in English.	「言説」と文化に	ついて学ぶ。		
		4th	Discourse (2) Sale History of Madness	s and Marketing	(2)	狂気の歴史につい	て学ぶ。		
	3rd Quarter	5th	Collectivism and Ir (1) Proverbs	ndividualism (1)	Technical Areas	 「集団主義と個人 <u>:</u> 	主義」について学	٠٠٠. نت:	
		6th	Collectivism and Ir (2) Collectivism and Ir	,		職場での集団主義	と個人主義につい	て学ぶ。	
		7th	Masculine and Fen In a masculine cul important value.	ninine Culture (1 ture success is th) Health (1) ne most	男性文化と女性文	化について学ぶ。		
		8th	Masculine and Fen What roles are me in your society?	ninine Culture (2 en and women ex) Health (2) spected to play	主夫について学ぶ。			
2nd Semeste r		9th	High-context and I (1) One example of a haiku.		` ,	ハイコンテクスト: て学ぶ。	文化とローコンテ	ラクスト文化につい	
		10th	High-context and I Finance (2) Saying No	Low-context Cult	cure (2)	「ノー」と言うことについて学ぶ。			
		11th	Power-distance (1 There are cultures hierarchy and thos social structure.	that prefer a str	rict social nore flexible	上下関係が言語や行動にどのように表れるかを学ぶ。			
	4th Quarter	12th	Power-distance (2 An Exchange Stud) Travel (2-2) ent's Experience	in Japan	ある留学生の日本での体験を学ぶ。			
		13th	Globalization and (Development (1) Imagine what life		()	グローバル化がもたらす文化や文化アイデンティティ への影響を学ぶ。			
		14th	Globalization and (Development (2) Cultural Supermar	Cultural Identity		文化のスーパーマーケットについて学ぶ。			
			ェとめ Review and 後期のまとめ	Further Practice	(2)	後期で学習したことを復習しまとめる。			
		16th	期末試験			これまでの学習できま現することができ	 理解したことをき きる。	ちんと成果として	
Evaluati	ion Meth	nod and V	Veight (%)						
_ : :::::::::::::::::::::::::::::::::::	試験 発表 相互評価 態度					ポートフォリオ	課題・発表	Total	
Subtotal	60		0	0	0	0	40	100	
基礎的能力						0	40	100	
専門的能力						0	0	0	
分野横断的			0	0	0	0	0	0	
/ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	סן כיסנוי			1~	1~		1~		

А	kashi Co	llege		Year	2021			ourse Title	Japanese Language and Communication		
Course	Informat	tion									
Course Co	ode	0032				Course Categor	ry	General /	Elective		
Class Forr	mat	Lecture				Credits		Academic	Credit: 2		
Departme	ent	Mechanic Engineer		nd Electronic	System	Student Grade		Adv. 2nd			
Term		First Sen	neste	er		Classes per We	ek	2			
Textbook Teaching		石黒圭『。	よくオ	わかる文章表現	の技術 [新版] Ι、	Ⅱ』(明治書院))、適宜	日本語に	関する資料を配布する。		
Instructor	-	KURODA	Hide	enori							
Course	Objective	es									
性を養うご (2)日本語 (3)文章表	こと の文章を批 現における	判的に検討 様々な規則 ⁴	し、 ⁻ や文》	それについて意 法事項を正確に		倫理的な思考力と 文章表現力を養う	表現力を こと		巻く日本語環境を敏感に観察する感らの文章表現力を向上させること		
Rubric											
			理	想的な到達レヘ	 ジルの目安	標準的な到達レ/	ベルの目	 安	未到達レベルの目安		
評価項目1			日のら	本語の表現の特別を表現の特別を表現の表現の表現の表現の表現の表現の表現の表現の表現の表現の表現の表現の表現の表	特徴と文法・語彙 理解しており、自 E語環境を知的関 「ることができる	日本語の表現の特の歴史をおおむれ 取り巻く日本語 とができる	特徴と文 は理解し	 法・語彙 、自らを	日本語の表現の特徴と文法・語彙 の歴史への理解が不十分であり、 自らを取り巻く日本語環境に対し て関心が薄い		
評価項目2			明 身 章	快で論理的な思 に付け、自分 <i>0</i> として表現する	思考力と表現力を)思いを十分に文 ることができる	論理的な思考力では、自分の思いできることができる。	を文章と		論理的な思考力と表現力が未熟であり、自分の思いを文章として表現することができない		
評価項目3			文法さ	ででである。 第項を正確に理	る様々な規則や文 理解し、状況にふ ☆文章表現を行う	文章表現における様々な規則や文 法事項をある程度理解し、実践的 な文章表現を行うことができる		、実践的	文章表現における様々な規則や文 法事項の理解が不十分であり、実 践的な文章表現を行うことができ ない		
Assiane	d Depart	ment Ob	iecl	tives					·		
		学習・教育目									
Teachin	g Metho	 d									
Outline		ーより、自り	らをE 力のi	取り巻く日本語 養成を目指す。	表現に敏感になるる	こと、そして、日	本語に関	する基礎	文例を批判し課題を検討することに 的な事項の確認と豊かで正しい日本 豊富に行い、より充実した研究論文		
Style			皆によるテキストの課題の発表とそれにもとづく講師及び出席者との質疑応答を行う。また、ほぼ毎回レポー 果す。								
Notice		90時間に									
Charact	eristics o	of Class /	Div	ision in Lea	arnina						
□ Active		,		Aided by IC		☑ Applicable to	o Remo	te Class	☐ Instructor Professionally Experienced		
Course	Plan										
			Ther	me			Goals				
1:		1st	授業(文章	の概要・「訓点 表現の技術 [新	[の打ち方」(石黒: 版] I』)	圭『よくわかる			業の進行について理解する。また、 のテーマを理解することができる		
2		2nd	表現	の技術[新版]	文法」(石黒圭『 I』) 者の発表と質疑応		「語順の文法」のテーマを理解し、必要な技術(アピールポイントの選定、適切な表現など)を中心としたレジメを作成し、プレゼンテーションすることができる				
4.4		3rd	技術	[新版] I 』)	(石黒圭『よくわ: 者の発表と質疑応		「話し言葉と書き言葉」のテーマを理解し、必要な技術(アピールポイントの選定、適切な表現など)を中心としたレジメを作成し、プレゼンテーションすることができる				
1st Semeste duarter	4th	[新	版] [])	「黒圭『よくわかる! 諸の発表と質疑応		「弱い判断の功罪」のテーマを理解し、必要な技術 (アピールポイントの選定、適切な表現など)を中心 としたレジメを作成し、プレゼンテーションすること ができる					
	5th	の技	術[新版] [』			「事実 c 技術(プ	ニーニー と意見の書 アピールボ したレジメ	き分け」のテーマを理解し、必要なパイントの選定、適切な表現など)をを作成し、ブレゼンテーションする			
[6th	[新	果題についての受講者の発表と質疑応答 接続詞の使い方(石黒圭『よくわかる文章表現の技術 [新版] I』) 果題についての受講者の発表と質疑応答				「接続詞の使い方」のテーマを理解し、必要な技術 (アピールポイントの選定、適切な表現など)を中心 としたレジメを作成し、プレゼンテーションすること ができる			

						論説文の構造につい	 ハて理解することナ	ができる。		
		7th	論説文1 課題についての受講	者の発表と質疑応答	答	必要な技術(アピー ど)を中心としたし ンすることができる	-ルポイントの選買 レジメを作成し、こ	E、適切な表現な		
		8th	論説文2 課題についての受講	者の発表と質疑応答	答	論説文の構造につい必要な技術(アピーど)を中心としたし ンすることができる	-ルポイントの選買 レジメを作成し、こ	È、適切な表現な		
		9th	冒頭と結末の呼応(術 [新版] Ⅱ』) 課題についての受講			「冒頭と結末の呼ぶ (アピールポイン I としたレジメを作品 ができる	芯」のテーマを理角 トの選定、適切なえ 成し、プレゼンテ−	長現など)を中心		
		10th	読者への配慮(石黒 [新版]Ⅱ』) 課題についての受講			「読者への配慮」のテーマを理解し、必要な技術(アピールポイントの選定、適切な表現など)を中心としたレジメを作成し、プレゼンテーションすることができる				
		11th	手際のよい説明(石 [新版]Ⅱ』) 課題についての受講			「手際のよい説明」のテーマを理解し、必要な技術 (アピールポイントの選定、適切な表現など)を中心 としたレジメを作成し、プレゼンテーションすること ができる				
	2nd 12th Ouarter		問題提起文の力(石 [新版]Ⅱ』) 課題についての受講			「問題的文の力」の ピールポイントの過 たレジメを作成し、 きる	のテーマを理解し、 選定、適切な表現な プレゼンテーショ	ょど)を中心とし		
		13th	譲歩による説得(石 [新版] II 』) 課題についての受講			「譲歩による説得」 (アピールポイン) としたレジメを作品 ができる	のテーマを理解し トの選定、適切なま 成し、プレゼンテー	長現など)を中心		
		14th	要約の方法(石黒圭 版] II』) 課題についての受講			「要約の方法」のテーマを理解し、必要な技術(アピールポイントの選定、適切な表現など)を中心としたレジメを作成し、プレゼンテーションすることができる				
			手紙の書き方 課題についての受講者の発表と質疑応答			手紙の書き方を理解することができる。必要な技術 (アピールポイントの選定、適切な表現など)を中心 としたレジメを作成し、プレゼンテーションすること ができる				
		16th	期末試験							
Evaluation	aluation Method and Weight (%)									
	試験		発表	相互評価	態度	ポートフォリオ	その他	Total		
Subtotal	ubtotal 50		50	0	0	0	0	100		
基礎的能力	基礎的能力 50		50	0	0	0	0	100		
専門的能力	専門的能力 0		0	0	0	0	0	0		
分野横断的	能力 0		0	0	0	0	0	0		

А	ıkashi Co	ollege	Year	2021		C	Course Title	Environmental Science	
Course	Informa	tion	•	•		•	· -		
Course Co		0047			Course Catego	ry	General ,	/ Elective	
Class For	mat	Lecture			Credits		Academi	c Credit: 2	
Departme	ent	Mechani Enginee	ical and Electroni ring	c System	Student Grade		Adv. 2nd		
Term		First Ser			Classes per We	eek	2		
Textbook	and/or								
Teaching Instructor		WATANA	ARE Morivoshi HI	RAISHI Toshihiro					
	Objectiv		ADE MONYOSHI, HI	IVAISIII TOSIIIIIIO					
(1) Under to examir perspective (2) Exam	rstand the ne and exp ve. ine the rel	formation lain the relationship b	ationships betwe etween the envir	en life, the natural	environment, a e, think about pr	nd env roblem	vironmenta ns with env	cosystem, and acquire the ability all issues from a multifaceted vironmental issues, and acquire	
Rubric		,					•		
			Ideal Level		Standard Level			Unacceptable Level	
Achievement 1			global enviror basic knowled ecosystem, ar and explain the between life, environment,	and I issues from a	Understand the global environr basic knowledg ecosystem, and relationships be natural environ environmental	ment a ge of th d can e etweer nment,	and the he natural explain the n life, the , and	environment and the basic	
		tment Ob 学習・教育目	ojectives 目標 (C) 学習・教育	計算標 (D)					
	g Metho		3,11	3					
Outline		(1) Lect	3 weeks taugħt b ures on environn	v Watabe)	•			stems, and methods for preserving onal disparities. (7 weeks taught	
Style		The cou taking the	rse is open to stu he course, studer	ng slides and video udents from any de nts should carefully and summarize the	partment. Class read through th	es will ne mat	be taught terials disti	as appropriate. : as simply as possible. Before ributed in advance to fully	
Notice		guarante assignm The leve score fo	eed in classes and lent reports. els of achievemer	d the standard self nt will be evaluated	-study time requal by faculty mem	uired fo bers in	or pre-student or the follow	include the learning time dy / review, and completing wing methods. The minimum evaluation will be "1" for Hiraishi	
Charact	eristics		Division in Le	earning					
	Learning	J. J	☐ Aided by I		☐ Applicable t	to Remote Class			
Course	Plan								
			Theme			Goals			
		1st	The formation of history of polluti	f the global enviror on (Watabe)	nment and the	globa relatio	I environm	process in which the current lent was formed, and the ween pollution and health that has past.	
		2nd	Global environm	ental issues (Wata	be)	Can e issues scale.	s and the r	current state of environmental measures to be taken on a global	
		3rd	Ecosystem basic	s (Watabe)				concept of ecosystems, and about populations.	
	1st	4th	Ecosystem struc cycles (Watabe)	tures, energy flow	, and material		explain eco naterial cy	system structures, energy flow, cles.	
1st Semeste r	Quarter	5th	Various ecosyste	ems (Watabe)		states	explain the sof forest, stems.	functions, roles and present urban, and agricultural	
		6th	Ecosystem conse	ervation technique:	s (Watabe)	restor	ration, and onment ind	nnical classification (conservation, I creation) to protect the cluding ecosystems using concrete	
		7th	Summary			from	weeks 1 to		
		8th	Biodiversity and	the biodiversity cr	isis (Watabe)	curre	nt state ar	ition of the exam. Can explain the id crisis of biodiversity.	
	2nd Quarter	9th	Report assignme Environmental is	ent briefing ssues and history		Set up and implement solutions to environment issues in one's life. Learn about the causes and history of modern environmental issues.			

							1		- 4 - 4 - 1 -			
		10th	Li	fe and society in	the Edo period			Learn about life and society before today's environmental issues arose.				
	11th			atch the "An Inco	onvenient Truth"	and think	Learn about clim	Learn about climate change issues.				
				atch the "An Inco	onvenient Truth"	and think	Learn about clim the challenges.	nate change issue	s and recognize			
			"4	Ancient Futures: L	_earning from La	dakh"	Think about the geographic inequal	time gap in the p ualities.	roblems due to			
		14th	"4	Ancient Futures: L	_earning from La	dakh"	Think about the geographic inequal	time gap in the p ualities.	roblems due to			
		15th	R	eturn and amend	report assignme	ents	Add opinions to the faculty's comments sent via Teams about the assignment in week 9.					
		16th	Α	bout SDGs			Understand SDG	is.				
Evaluation	on Me	ethod ar	id We	eight (%)			•					
		Examinati atanabe)	on(W	Exercise(Watan abe)	Report(Hiraishi	Behavior	Portfolio	Other	Total			
Subtotal		30		20	50	0	0	0	100			
Basic Proficiency			0	0	0	0	0	0				
Specialized Proficiency				20	50	0	0	0	100			
Cross Area Proficiency 0			0	0	0	0	0	0				

А	kashi Co	ollege	Year	2021			ourse Title	Engineering Presentation II			
Course	Informa	tion									
Course Co	ode	0032			Course Categor	ry	Specialize	ed / Compulsory			
Class Forr	mat	Seminar			Credits		School Credit: 1				
Departme	ent	Mechanical Engineering	and Electronic	System	Student Grade	e Adv. 2nd					
Term		Second Ser	mester		Classes per We	ek	後期:2				
Textbook Teaching											
Instructor		HIRAISHI 1	Toshihiro,ONISH	II Shosaku							
Course	Objectiv	es									
(1) Acquire knowledge in a wide range of engineering-related fields through presentations of one's Research Studies presway that students from different specialties can understand (H).											
Rubric											
			Ideal Level	-1	Standard Level			Unacceptable Level			
Achievem	ent 1		students from (es in a way that different fully understand	Can present on Research Studi students from a specialties can discuss it with	es in a differer unders	way that nt	Cannot present one's own Research Studies in a way that students from different specialties can understand and discuss it with them.			
Assigne	d Depar	tment Obje	ctives		•						
学習・教育	育目標 (B) ≒	学習・教育目標	(C) 学習・教育I	目標 (E) 学習・教育	育目標 (H)						
Teachin	g Metho	od									
Outline		presentation	This course will have lectures and exercises on fundamental approaches to written presentations, graphical presentations, oral presentations, etc. in order to enhance students' abilities to express technical matters. Teaching staff will offer their impressions and critiques to raise the levels of the content.								
Style		purposes, a	and their resear	ch plans, followed	d by a question-	and-an	swer sess	ons for their Research Studies, its ion. In the latter half of the ive presentations using slides.			
Notice		guaranteed assignment have prepa students' p	I in classes and t reports. Emph red by themsel resentations.	the standard self	estudy time requessenting and distermined time. S	uired fo cussing Student	or pre-studg the sumits are exp	include the learning time dy / review, and completing maries and slides that students ected to be able to evaluate other			
Charact	eristics (ivision in Lea		viii rioc be eligibi	c ioi a	pussing g	rude.			
☐ Active		01 01000 / 0	☐ Aided by IC		☐ Applicable t	o Remo	ote Class	☐ Instructor Professionally Experienced			
Course	Plan										
			eme			Goals					
		Cr Th 1st Re fro	eating slides (P eme 3 is to pre search Studies om different spe	action to the Rese art 1, Hiraishi) sent the introduc- in 10 minutes so ccialties can under signment, prepar	tion to the that students rstand. After	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 Cr	eme 3 (Introdu eating slides (P me as above	action to the Research art 2, Hiraishi)	arch Studies):	backgr one's o	round nui	rials to communicate the rposes, and research method of arch Studies to students from ties.			
2nd	3rd		nishi) 18-minute pres nutes) 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 th everyone.	Can communicate the background, purposes, an research method of one's own Research Studies to students from different specialties. Can also ask questions about the presentations.					
Semeste			esentations (Pa me as above	rt 2, Hiraishi and	Onishi)	resear to stud	ch method dents from	te the background, purposes, and d of one's own Research Studies of different specialties. Can also bout the presentations.			
			esentations (Pa me as above	rt 3: Hiraishi and	Onishi)	resear to stud	ch method dents from	te the background, purposes, and d of one's own Research Studies of different specialties. Can also bout the presentations.			
			esentations (Pa me as above	rt 4: Hiraishi and	Onishi)	resear to stud	ch method dents from	te the background, purposes, and d of one's own Research Studies n different specialties. Can also bout the presentations.			
	7th Presentations (Part 5: Hiraish Same as above				Can communicate the background, pu			d of one's own Research Studies n different specialties. Can also			

		8th	Presentations (Par Same as above	t 6: Hiraishi and	Onishi)	Can communicat research method to students from ask questions ab	l of one's own Re different special	ties. Can also	
		9th	Theme 4 (Special slides preparation Prepare one's owr review presentation	(Part 1: Onishi) n Research Studie	, '	Can prepare slide Studies review p		for Research	
		10th	Each student shouminutes and join i everyone.			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 (Par Same as above	t 2: Onishi and H	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.			
			Presentations (Par Same as above	t 3: Onishi and H	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.			
		13th	Presentations (Par Same as above	t 4: Onishi and H	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.			
		14th	Presentations (Par Same as above	t 5: Onishi and H	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 (Par Same as above	t 6: Onishi and H	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.			
		16th	No final exam						
Evaluati	on Met	hod and	Weight (%)	1			1		
	Presentation		Mutual Evaluations between students	Number of questions			Others	Total	
Subtotal	tal 60		30	10	0	0	0	100	
Basic Proficienc			0	0	0	0	0	0	
Specialize Proficience	Specialized Proficiency 60		30	10	0	0	0	100	
Cross Are Proficience			0	0	0	0	0	0	

Д	kashi Co	ollege	Year	2021		Course Title	Research Studies		
Course	Informa	tion	•	•					
Course Co	ode	0033			Course Category	/ Specializ	red / Compulsory		
Class For	mat	Seminar			Credits	School C	edit: 8		
Departme	ent	Mechanic Engineer	cal and Electroni ing	c System	Student Grade	udent Grade Adv. 2nd			
Term		Year-rou							
Textbook					,	4 -			
Teaching									
Instructo									
(1) Can ir perspectiv (2) Can e (3) Can w	ve toward ingage in l vrite techn	nd deepen e solving prol earning and ical docume	blems. Fresearch indepo ents in English by	kamine it theoretic endently and conti y creating an Engli ne at the research	nuously. sh abstract of the	annual researe	and creatively from a wide		
Rubric									
			Ideal Level		Standard Level		Unacceptable Level		
Achievem	nent 1		lapply it theor	d examine and etically, , practically, and n a wide	Can integrate ar expertise, and e theoretically, sy practically, and a wide perspect solving problem	xamine it stematically, creatively from ive toward	Cannot integrate and deepen expertise, and examine it theoretically, systematically, practically, and creatively from a wide perspective toward solving problems		
Achievem	ent 2		Can actively e	engage in learning independently and	Can engage in le research indepe continuously.	earning and ndently and	Cannot engage in learning and research independently and continuously.		
Achievem	ent 3		in English and international of creating an En	nnical documents I papers for conferences by nglish abstract of search report.	Can write technin English by creabstract of the areport.	ating an Englis	sh documents in English by		
			Can improve	and apply skills by giving one	Can improve pre by giving one at presentation.	esentation skills the review	cannot improve presentation skills by giving one at the review presentation.		
Assigne	d Depar	tment Ob	jectives						
学習・教育	育目標 (D) :	学習・教育目	標 (E) 学習・教育	育目標 (G)					
Teachin Outline	ig Metho	The aim that the They will questions	students have le l also learn pract	earned so far and a cical techniques for	pplying it to indiv engineering rese	idual research arch. Research	ntegrating engineering knowledge assignments of their own choice. subjects, unlike exercise ing unknown areas while repeating		
Style		Students	will be assigned	to each laborator	y and receive rese	earch guidance	from the supervisors.		
Notice		guarante assignme knowledo voluntari approach	eed in classes an ent reports. Stuc ge they have gai ly and based on methods until t	d the standard seli dents should proce ned from previous self-judgment, as they arrive at an a	f-study time requi ed with research study. Specificall much as possible	red for pre-stu voluntarily and v. each researd	rs include the learning time dy / review, and completing proactively based on their ch process should be carried out e issues given and think about		
Charact	eristics	of Class /	Division in Lo	earning					
□ Active	Learning		☐ Aided by I	СТ	☐ Applicable to	Remote Class	☐ Instructor Professionally Experienced		
Course	Plan								
Course	lull		Theme		1	Goals			
				rah			rately under each supervisor's		
			Individual resea	rcn	i	nstruction. '	,		
ı			Same as above			Same as above			
	1st		Same as above			Same as above			
	Quarter		Same as above			Same as above			
			Same as above Same as above			Same as above Same as above			
1st Semeste			Same as above			Same as above			
Semeste r			Same as above			Same as above			
			Same as above			Same as above			
			Same as above			Same as above			
	2nd	11th :	Same as above		9	Same as above			
	Quarter		Same as above		ļ	Same as above			
			Same as above			Same as above			
		14th	Same as above		9	Same as above			

		15th	Same as abo	ve		Same	as above				
		16th	No final exan	n							
		1st	Same as abo	ve		Same	as above				
		2nd	Same as abo	ve		Same	Same as above				
		3rd	Same as abo	ve		Same	as above				
	3rd	4th	Same as abo	ve		Same	Same as above				
	Quarter	5th	Same as abo	ve		Same	as above				
	6th 7th		Same as abo	ve		Same	as above				
			Same as abo	ve		Same	as above				
2nd	8th Same as a			ve		Same	as above				
Semeste	neste 9th Same as			ve		Same	as above				
l i			Same as abo	ve		Same as above					
		11th	Same as abo	ve		Same	as above				
	4th	12th	Same as abo	ve		Same	as above				
	Quarter	13th	Same as abo	ve		Same	as above				
		14th	Same as abo	ve		Same	Same as above				
		15th	Review prese	entation		Can present one's research results and answer questions, etc.					
		16th	No final exan	n							
Evaluat	ion Meth	od and	Weight (%))							
		Resea	rch paper	Research activities	Annual researd	ch	Research publication	Total			
Subtotal		40		20	20		20	100			
Basic Pro	Basic Proficiency			0	0		0	0			
Specialize Proficience	Specialized Proficiency			20	20		20	100			
Cross Area Proficiency		0		0	0		0	0			

А	kashi Co	ollege		Year	2021			ourse Title	Mechatro-system			
Course	Informat	tion						•				
Course Co		0034				Course Categor	ν	Specialize	d / Elective			
Class For		Lecture				Credits	,	Academic				
Departme				and Electronic	System	Student Grade		Adv. 2nd				
Term		First Ser	nest	er		Classes per We	ek	2				
Textbook Teaching												
Instructor	r	SEKIMO	IMORI Daisuke									
Course	Objectiv	es										
(1) Under (2) Under (3) Can n	rstand the rstand how nake the e	basic know to fuse se ntire syster	vledg ensor m int	ge and operations and actuator telligent by pro	ng principles of sers and can create ogramming.	nsors and actua a basic system.	itors ar	nd can con	trol them with a computer.			
Rubric												
			I	deal Level		Standard Level			Unacceptable Level			
Achievement 1			U k p a	Inderstand the nowledge and principles of ser actuators and c	operating asor and	Understand the knowledge and principles of se actuators and c with a compute	operat nsor ar can con	nd	Do not understand the basic knowledge and operating principles of sensor and actuators and cannot control them with a computer.			
Achievement 2			a a	Inderstand how and actuators a accurately creaty ystem.		Understand how and actuators a basic system.			Do not understand how to fuse sensors and actuators and cannot create a basic system.			
Achievem	chievement 3			Can accurately ystem intellige programming.	make the entire nt by	Can make the eintelligent by pr			Cannot make the entire system intelligent by programming.			
Assigne	d Depart	tment Ol	pjectives									
学習・教育	育目標 (D) ≒	学習・教育目	1標((F) 学習・教育E	目標 (H)							
Teachin	g Metho	d										
Outline		This cou informat machine	tion (ery. (ems: s will	engineering ne Class content i	ecessary for mech s based on the su	atronics. In add biect of autonor	ition, ti mous n	here will b nobile robo	nanical, electrical, electronic and e exercises using the actual ots and focuses on their mechanisms and specific control idea of integrating these will be			
Style		Lectures	will s.	be conducted	in accordance wi	th the handouts	. The c	ourse also	includes exercises using robot as			
Notice		guarant	eed i ent i	in classes and reports.	mount to 90 hou the standard self- more of classes w	study time requ	iired fo	r pre-stud	include the learning time y / review, and completing rade.			
Charact	eristics o	of Class /	Div	vision in Lea	arning							
☐ Active	Learning	•		Aided by IC	Т	☐ Applicable to Remote Class			☐ Instructor Professionally Experienced			
Course	Plan											
			The	me			Goals					
		1st	An d	outline of mob	ile robots		robots interfa	such as h ces. Can a	basic configurations for mobile ardware, software, and also operate an actual mobile ale program.			
2nd		2nd	Micr	rocomputer co	ntrol		Understand the functions and basic configuratio of microcomputers that control entire robot systems. Also understand specific control methods using microcomputer programming language.					
Semeste 1st Quarter .		3rd	Sen	sor principles a	and control metho	ods	Understand the principles and control methods o devices such as optical sensors, force sensors, visual sensors, rotary encoders, which are widely used as sensors for robots.					
		4th	Infr	ared proximity	sensor control		Understand control circuits and interface circuit by doing infrared proximity sensors control exercises. Can use an actual infrared proximity sensor to learn about how to detect objects.					
		5th	Rota	ary encoder co	ontrol		Understand control circuits, etc. by doing rot encoder control exercises. Can use an actual rotary encoder to learn how to measure a morotation angle, angular speed, etc.					
		6th	Actı	uator principles	s and control met	hods	Understand their principles and control methods of the main types of actuators of robots, such as stepping motors and DC motors.					

		7th	DC motor co	entrol (1)		Understand control circuits and interface circuits by doing DC motor control exercises. Can use an actual DC motor to learn driving methods for a motor's forward-reverse, PWMs, etc.				
		8th	DC motor co	ontrol (2)			Under contro learn	rstand PID cor of exercises. C how to contro	ntrol theory by an use an acti I a motor's sp	doing DC motor ual DC motor to eed.
		9th	DC motor co	ntrol (3)			Same	as above		
		10th	Position cont	trol of a mobile	robot (1)		mobile		understand p	kinematics of osition control d feedback.
	11th 2nd Quarter 12th		Position cont	trol 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 esti	mation of a mo	bile robot		Understand dead reckoning, a practical method of estimating a mobile robot's position, and learn about position estimation methods that use an actual mobile robot.			
		13th	Obstacle avo	oidance (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	oidance (2)			Same as above			
		15th	Obstacle avo	oidance (3)			Same as above			
		16th	Final exam							
Evaluat	ion Metl	hod and	Weight (%))						
		mination	Presentation	Mutual Evaluations between students	Behavior	Portfoli	0	Other	Exercise	Total
Subtotal	50		0	0	0	0		0	50	100
Basic Proficienc	ency 0		0	0	0	0		0	0	0
Specialize Proficienc	ecialized ficiency 50		0	0	0	0		0	50	100
Cross Are Proficienc	Area o		0	0 0 0			0	0	0	

Д	Akashi Co	ollege	Y	ear	2021		Cour		Computational Mechanics	
Course	Informa	tion	·							
Course Co		0035				Course Categor			red / Elective	
Class For	mat	Lecture			<u> </u>	Credits	Aca	demi	ic Credit: 2	
Departme	ent	Enginee	cal and Ele ring	ectronic	System	Student Grade	Adv. 2nd			
Term		First Ser	mester			Classes per Wee	ek 2			
Textbook Teaching	and/or Materials									
Instructo		KUNIMII	NE Kanji							
Course	Objectiv	es es								
(2) Can d (3) Can d	letermine letermine	numerical s	solutions fo solutions fo	or two-dor one-d	dimensional stead	dy-state problems. eady-state problen blems.	ns.			
Rubric						ı				
			Ideal Le			Standard Level			Unacceptable Level	
Achievem	nent 1		Fully ur differer	ndersta ntial me	nd the basics of thods.	Understand the differential method			Do not understand the basics of differential methods.	
Achievem	nent 2		solution	ns for to	rmine numerical wo-dimensional roblems.	Can determine solutions for two steady-state pro	o-dimensi	onal	Cannot determine numerical solutions for two-dimensional steady-state problems.	
Achievement 3			solution	ns for o	rmine numerical ne-dimensional e problems.	Can determine solutions for on unsteady-state	e-dimension		Cannot determine numerical solutions for one-dimensional unsteady-state problems.	
				ns for m	rmine numerical noving boundary	Can determine solutions for mo		ndary	Cannot determine numerical solutions for moving boundary problems.	
Assigne	d Depar	tment Ob	ojectives							
		学習・教育目	目標 (H)							
Teachin	ng Metho									
Outline		Iproblem	s. The cou ca numeric	ırse will	l explain the basi	c theory and speci	fic wavs to	o calc	esent physical phenomena with the e basic formula of heat conduction culate differential methods, which ving boundary problems, such as	
Style		Engineer	ring Depar s are based	tment a	and Advanced He	eat Transfer from t	he school'	's àdv	ected for year 5) at the Mechanica vance courses, as the study hts to meet the Course Objectives	
Notice		guarante assignm In order The eval	eed in clas ent report to achieve luation will	ses and s. e the go I be bas	d the standard se pals, students are sed on four assig	lf-study time requi	ired for pr ughly pre-s uizzes.	e-stu study	s include the learning time dy / review, and completing and review each week's class. grade.	
Charact	eristics	of Class /	Divisior	in Le	earning		•			
☐ Active	Learning		□ Aide	ed by IO	СТ				☐ Instructor Professionally Experienced	
Course	Dlan									
Course	Fiaii		Theme				Goals			
		1st		luction	equations		Can derive	e a th	ermal conduction equation of a	
		2nd			erence method		Can derive	e the	dinate system. differential formula for the he first and second floors	
		3rd	Quiz on tv	vo-dim	ensional steady-s	state problems	Understan dimension	d the	mathematically. differential formula for two- eady-state problems and how to n do a quiz on content from Week	
1st Semeste	1st Quarter	4th	Exercise (1)				e a pr ite pr	rogram for two-dimensional oblems.	
r		5th	Exercise (2)					numerical solutions using the ed in Week 4.	
		6th	One-dime	nsional	unsteady-state	problems (1)	differentia	I met	e solution by the forward hod and its algorithm.	
		7th	One-dime	nsional	unsteady-state	problems (2)	differentia	I met	d the solution by reverse hod and its algorithm.	
		8th	Exercise (3)			Can create programs for one-dimensional unsteady-state problems.			
	2nd Quarter 9th Exercise (4)					Can determine numerical solutions using the program created in Week 8.				

	10	th N	Moving boundary	/ problem		boundary co	Understand the basic equations and initial and boundary conditions, and can find an approximate solution for heat conduction problems with phase changes.				
	11		Quiz on the hanc 1)	lling moving l	boundary surfaces	as a typical e surfaces that	the fixed tempe example of han may move ov om Week 10.	erature point method Idling boundary er time. Can do a quiz			
	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			
Specialized Proficiency	70	70 30 0		0	0	0	100				
Cross Area Proficiency	0	0 0 0				0	0	0			

Δ.	ll-: C-			2024			ourse	For a way of Tarabara Languitt
	kashi Co		Year	2021			Title	Energy Technology II
	<u>Informat</u>				T		I	
Course Co Class Forn		0036			Course Catego Credits	ry	<u> </u>	ed / Elective c Credit: 2
		Lecture Mechanic	cal and Electron	ic System				
Departme	nt 	Engineer			Student Grade		Adv. 2nd	
Term		First Sen	nester		Classes per We	eek	2	
Textbook Teaching								
Instructor		TANAKA	Seiichi					
Course (Objective	es						
(1) Can re (2) Unders (3) Unders To achieve (a) Solve (b) Descri	ecognize fustand and stand the these go each week be the app	can explair basic issues als, studen s's exercise propriate ex	ems and discuss the principles s of each therm ts will need to c questions and r	of structural and en o-fluid machine and lo the following self research the relevar ults and consideration	ergy conversion I plan, conduct, -study: nt topics to enha	of the and ev ance un	rmal engi aluate pe iderstandi	support livelihoods. nes and fluid machinery. rformance tests. ng. o prepare experimental reports for
Rubric								
			Ideal Level		Standard Leve			Unacceptable Level
Achievem	ent 1				Can recognize and discuss me energy convers that support liv	easures sion tec	for chnologies	for energy conversion
Achievem	ent 2		logically explanation	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.
Achievem	ent 3		issues of eacl	nderstand the basic n thermo-fluid can properly plan, evaluate tests.	uid each thermo-fluid machine and can plan, conduct, and evaluate norfermance tests.			
Assigned	d Depart	ment Ob	jectives					
学習・教育	目標 (D) 🗄	学習・教育目	l標 (H)					
Teachin	g Metho	d						
Outline		learn the specifica practical plan and	e approaches to lly, they will und use and learn t implement per	performance calcul lerstand the structu he approaches to p formance evaluation	ation and experiures and principler erformance evalus through	menta es of th uations	l evaluation ermal en s. To do tl	technologies and will practically on that designing requires. More gines and fluid machinery in nese things, students will actually
Style		each uni	t and two labs.	In order to achieve and answers and we	the goals, stud	ents sh ell as t	nould ensu	e will be assignment exercises for ure their understanding by ses assigned in each class. If a ney don't understand, they should
Notice		Heat Tra not mean students Students based or first class This could	insfer. Therefore in that students should come are is need to submit in the results of t is. rse's content wi and the standard	e, keep the textbool who have not taker nd discuss it with the a lab report as par he planned experin Il amount to 90 hou	ks for those sub, a those courses is faculty as must of a prerequishent. Other detaurs in total. Thes	jects at are una ch as p ite for e iled ev e hour	t hand and and able to take to	modynamics, Fluid Mechanics, and d review them. However, this does to this course. In these cases, we credit. They will be evaluated riteria will be explained during the the learning time guaranteed in the completing assignment reports.
Characte	eristics c	of Class /	Division in L	earning				
□ Active	Learning		☐ Aided by	ICT	☐ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced
C	Dla :-							
Course I	rian		Thoma			Cools		
			Theme Energy convers	ion		Goals Understand and explain types of energy conversions, especially thermal engine classification.		
1st Semeste	1st Quarter	2nd	Cycle and thern (1)	nal efficiency of the	rmal engines	Under	stand an	air theory cycle hypothesis and ermal efficiency of a cycle for a engine.
r	Yuui (CI	3rd	Cycle and thern (2)	nal efficiency of the	rmal engines	Can ca a typic differe in an a	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	I	Energy conversion in f	luid machinery	Can introduce fluid mac water vehicles, windmil and explain their princip	ls, etc., and understand		
		9th	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	experiment for an interiwas planned the previous	Can conduct the performance evaluation experiment for an internal combustion engine that was planned the previous week, and compile it into a report. (Report assignment)		
		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	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	2021				Strength and Fracture of
	Informa						Title	Materials
Course Co		0037			Course Categor	ν	Specialize	ed / Elective
Class Forr		Lecture			Credits	,		Credit: 2
Departme	ent		cal and Electror	nic System	Student Grade		Adv. 2nd	
Term		Enginee Second	Semester		Classes per We	ek 2		
Textbook		Jecona	<u> </u>		Toldooco per 110		1-	
Teaching		CALCATO	A A1: 1:					
Instructor	Objectiv		A Akiyoshi					
1) Learn t goals [D a (2) Under education (3) Under education	the approper the stand the goal [D])	oriate applionstatistical properties.	properties of ma	aterial strength and	learn about relia	bility e	ngineering	sment (Learning and educational g handling (Learning and n them to others (Learning and
Rubric								
			Ideal Level		Standard Level			Unacceptable Level
Achievement 1 appropria fracture n for mater			appropriate	ally explain the application of chanic methodology strength	Can explain the application of from thodology for strength assess	racture or mate	'mechanio erial	Cannot explain the appropriate application of fracture mechanic methodology for material strength assessment.
Achievem	ent 2		properties of and can spec	the statistical f material strength cifically explain gineering handling.	Understand the properties of m and can explair engineering ha	aterial reliab	strength oility	Understand the statistical properties of material strength and can explain reliability engineering handling.
Achievem			effects of va material stre	ally explain the rious factors on ength.	Can explain the various factors strength.			Cannot explain the effects of various factors on material strength.
		tment Ob						
			目標 (F) 学習・教	育目標 (H)				
reacnin	g Metho							
Outline		deforma other fie mechan structure	ition and destru elds, including e ics, and reliabili es and various f	ction, which occur with the country of the country	when external for s like metal struc e aim of this cou crength propertie	ces are ture, tl rse is t s, and	e applied t he strengt to underst	behavior of materials, such as to solid materials. It is related to h of materials and continuum and the effects of microscopic bout material selection and
Style		Classes	will be held in a	lecture style.				
Notice		Akashi k basics a include t	(osen Mechanica s much as poss the learning tim	al Engineering Depa ible. This course's c	rtment and other ontent will amour sses and the star	r relate nt to 9 ndard s	ed subject 0 hours of self-study	Strength of Materials offered at specifies, classes will be taught from the study in total. These hours time required for pre-study / rade
Charact	eristics o	of Class /	Division in I	_earning				
☐ Active	Learning		☐ Aided by	ICT	☐ Applicable to	o Rem	ote Class	☐ Instructor Professionally Experienced
	D.I.							
Course	Pian	Ī	Thoma		T	Coole		
		1st	Learn about ba	strength and fractusic concepts and coacture of materials add it.	ntents of			basic concepts and topics of cture of materials.
		2nd	loads (1) Learn about the	trength, and fractur e static strength and tion of metal mater	d sliding and	Can explain the static strength and sliding plastic deformation of metal materials.		static strength and sliding and ion of metal materials.
2nd Semeste	3rd	3rd	loads (2)	trength, and fractur trengthen metal ma	Can explain how to strengthen meta			to strengthen metal materials ork.
r	Quarter	4th	loads (3)	trength, and fractur pes of fractures in n echanisms.		Can ex	xplain type acture me	es of fractures in metal materials chanisms.
		5th	An overview of Learn about the	fracture mechanics e basics of mechani crack tips, and the	cs of elasticity,		fields at c	basics of mechanics of elasticity, rack tips, and the stress intensity
		6th	An overview of	fracture mechanics e crack tip's plastic rate.	(2) zone and the		xplain the y release r	crack tip's plastic zone and the ate.

		7th	An overview of fr Learn about plane	acture mechanics e strain fracture to		Can explain plan	e strain fracture	toughness.	
		8th	Fatigue (1) Learn about the b	basics of fatigue.		Can explain the l	pasics of fatigue.		
		9th	Fatigue (2) Learn about vario fatigue characteri	ous fatigue test mo stics.	ethods and	Can explain various fatigue test methods and fatigue characteristics.			
		10th	Fatigue (3) Learn about the opropagation.	characteristics of f	atigue crack	Can explain the opropagation.	characteristics of	fatigue crack	
		11th	strength	e strength and envo		Can explain cree corrosion.	p deformation, c	reep fracture and	
	4th Quarter Lear probupor		Statistical propert Learn about the f probability distrib upon considering material strength	undamental topic ution that become the statistical pro	s such às´ e necessary	Can explain the fundamental topics such as probability distribution that become necessary upon considering the statistical properties of material strength.			
		Statistical properties of material stren Learn about various types of probabil and their uses.		ength (2) bility paper	Can explain various types of probability paper and their uses.				
		14th	Statistical propert Learn about the s strength for meta	tatistical propertie	rength (3) es of the static	Can explain the statistical properties of the static strength for metal materials, etc.			
		15th	Statistical propert Learn about the s fatigue strength f	ties of material str statistical propertion or metal materials	es of the	Can explain the statistical properties of the fatigue strength for metal materials, etc.			
		16th	Final exam						
Evaluati	ion Me	thod and	Weight (%)						
	E	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total	
Subtotal	8	80 20 0 0		0	0	0	100		
Basic Proficienc	y	10	20	0	0	0	0	60	
Specialize Proficienc	ed y	10	0	0	0	0	0	40	
Cross Are Proficienc)	0	0	0	0	0	0	

A	kashi Co	llege	Year	2021			ourse Title	Optoelectronics Devices
Course	Informat	ion	-	-				
Course Co	ode	0038			Course Categor	ry	Specializ	ed / Elective
Class Forr	mat	Lecture			Credits		Academi	c Credit: 2
Departme	ent	Mechanic Engineeri	al and Electronions	c System	Student Grade		Adv. 2nd	i
Term		First Sem	nester		Classes per We	eek	2	
Textbook Teaching								
Instructor	-	SUYAMA	Taikei					
Course	Objective	es						
the basis 2) Unders display de	for optical stand the ovices and on the contract of the contract and other contracts a	devices. perating pr can explain	inciples and cha the important p	racteristics of vario	ous light emitting	g device	es, photo	n optical waves and electrons as sensitive devices, and solid-state anology from one's field of
Rubric								
			Ideal Level		Standard Level			Unacceptable Level
Achievem	ent 1				Understand the characteristics mechanics, and semiconductors	of light d	z, quantui	Do not understand the basic characteristics of light, quantum mechanics, and semiconductors.
Achievem	ent 2		Understand the between light electrons and problems.	waves and	Understand the between light velectrons.			Do not understand the interaction between light waves and electrons.
Achievem	ent 3		and application		Understand the of optical device optical wavegulasers.	es such	Do not understand the basic principles of optical devices such as optical waveguides, LEDs, and lasers.	
			detail photose	es, optical fibers, unication, optical and medical optical power	Understand phidisplay devices optical communeasurement applications, opapplications, et	i, optica nicatior and me otical p	al fibers, n, optical edical	Do not understand photosensitive and display devices, optical fibers, optical communication, optical measurement and medical applications, optical power applications, etc.
Assigne	d Depart	ment Ob	jectives					
学習・教育	晉目標 (D) 学	望・教育目	標 (F) 学習・教育	引標 (H)				
Teachin	g Method	d						
Outline		engineeri a wide ra advanced second h	ing. It has helpe inge of content. I significantly. Ir alf will explain v	ed diversify and imp Optical devices man this course, the fi	prove the perform like up the core of rst half will focu- ces used for opti	mance devices s on the cal info	of electro within the basics	engineering, and electronics onic engineering functions and has nis, and this technology has and theory of optical devices. The transmission, optical recording,
Style		The over	rall evaluation w a pass will be 6	0%. The periodic e	n periodic exam exam will assess	s and 2 studen	20% on r nts' level (grade eport assignments. The minimum of understanding of the class Objective 2) has been achieved.
Notice		This cou guarante assignme	rse's content wi ed in classes and ent reports. It is	ll amount to 90 ho	urs of study in to -study time requ t students have	otal. Thuired fo master	nese hour or pre-stu red subje	s include the learning time dy / review, and completing cts related to electronic properties.
Charact	eristics o		Division in Le		- 5.4-			
☐ Active			☐ Aided by I		☐ Applicable t	o Rem	ote Class	☐ Instructor Professionally Experienced
Course	Plan							
		-	Theme			Goals		
1st Semeste r	Ist T		Optical electronic characteristic ha Telecommunicat engineering, and	tions engineering, i d light energy. Base m of optical devices	whose maging ed on this, Optical electronic Understand the f			nics and optical devices form of optical electronics.
		2nd	reflection, interfe	operties of light c properties of light erence, diffraction, peen learned so far	polarization,	Under	stand the	fundamental properties of light.

	3rd	Basics of quantum Describe the back development, the waves of matter, Schrödinger equal make up the theo mechanics require between optical w	ground of quantu dual nature of pa the wave equatio tion, and wave fu retical backgroun ed to understand	articles and on of the inctions, which of quantum the interaction	Understand the	basics of quantu	ım mechanics.
	4th	Optical properties Materials absorb a to interactions bet Think phenomeno and emission in se	and emit light. Th tween electrons i logically about lig	is is mainly due no substances.	Understand light semiconductors.		emission in
	5th	Electrical propertic Describe the elect semiconductors, v devices.	rical properties o	f	Understand the semiconductors.		ties of
	6th	Quantum theory of waves and electron Think about a mel representation of and electrons. Del material (the real accumulation of ethat represents at emission) by the approximation usi	thod of quantum the interaction be rive the polarizati part that indicate nergy and the im psorption and stir second-order syst	mechanical etween light ion factor of a es the laginary part nulated tem	Understand the between light w	quantum theory aves and electro	of the interaction ns.
	7th	Quantum theory of waves and electron stimulated emission Derive the rate equipment of the percentage of tempelectron density because amplification week. Think about level system, base	ons (electron tran on) puation represent iporal changes in ased on the anal on process from the t the polarization	sition and ing the photon and ysis of the light previous	Understand elec	tronic transitions	s and stimulated
	8th	Exercise			Exercise		
	9th	Photoelectric wave Using mainly light of photoelectric was an optical wave reflection, waveguindex, containmer light propagation, power matching oloss, power match propagation, mod bluster angle and	approximation for aveguide, describe eguide's basic properties to be propertied to be propertied to be properties to be prope	pe topics súch operties (total alent refractive ver matching of and bending r light	of photoelectric waveguide, understand such as an optical waveguide's basic pre (total reflection, waveguide mode, equ refractive index, containment coefficier matching of light propagation, light gat		erstand topics pasic properties le, equivalent efficient, power ght gathering and ht propagation ng conditions for
	10th	Periodic structures projection Explain periodic st Understand light of	ructures and pho	otonic crystals.	Understand peri concentration ar and photonic cry projection.	nd projection, pe	light eriodic structures concentration and
24	11th	Light emitting diod Describe the structure materials of light of the important light light emitting characteristics curves are think about its curves.	ture, production emitting diodes (t emitting device racteristics and fe	LEDs), one of s. Explain its	Understand the	principles of ligh	t emitting diodes.
2nd Quart	er 12th	Semiconductor las Explain the proper a light sources and threshold, optical amplification gain, structure, type, et semiconductor las	ties of semicond d determine an o output, oscillation , and so on. Desc mission character	scillation n wavelength, cribe the	Understand the lasers.	principles of sen	niconductor
	13th	Photosensitive and Describe the structure photosensitive desphotodiodes, solar devices with a foc	ture, properties, vices such as pho cells, etc. Descr	and features of todetectors,	Understand the features of photoells, etc.		
	14th	Optical fiber lines Describe optical fi circuit elements, o	and optical comp	onding, optical	Understand opti optical circuit ele	cal fiber and deve ements, optical p	vice bonding, polarizers, etc.
	15th	Applications of op Describe topics wi communications, medical applicatio etc.	th a focus on opt optical measuren	nent and	Understand the	applications of o	ptical devices.
	16th	Final exam			Final exam		
Evaluation M	ethod and	Weight (%)					
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Exercise	Total
Subtotal	80	0	0	0	0	20	100
Basic Proficiency	80	0	0	0	0	20	100
Frontiericy				1		1	

Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

А	kashi Co	llege	Υ	/ear	2021		C	ourse Fitle	Algorithms
Course	Informat	ion	•				•	•	
Course Co	ode	0039				Course Categor	у	Specialize	d / Elective
Class Forr	mat	Lecture				Credits		Academic	Credit: 2
Departme	ent	Mechani Enginee	ical and El ring	lectronic	System	Student Grade		Adv. 2nd	
Term		Second	Semester			Classes per We	ek	2	
Textbook Teaching									
Instructor	-	HAMAD	4 Yukihiro						
	Objectiv								
[2] Can Underst [3] Algo [4] Algo [5] Algo [6] Algo	formulate	real probl gorithms lint constitut explore grands solving shool	ems on gristed belov te a minimaphs nortest pal aximum f	raphs (F) w and th num spai th proble low prob	eir time complexit nning tree m	·	(D).		
Rubric			T do al I	ovel.		Ctondond Loval			Line coorteble Lovel
			Ideal L	<u>evei</u> curately	evnlain	Standard Level			Unacceptable Level
Achievem	Achievement 1			ıtational	complexity, acks, queues,	Can explain cor complexity, ord queues, graphs	ers, lis	ts, stacks,	Cannot explain computational complexity, orders, lists, stacks, queues, graphs, and trees.
Achievem	Can accurately formulate a problem for determining the determining the determining the meeting dates of various.				Cannot formulate a problem for determining the meeting dates of various committees.				
Achievem	ent 3	Can accurately explain Kruskal's Can explain Kruskal's and Prim's and Prim's algorithms and their time complexities.				Cannot explain Kruskal's and Prim's algorithms and their time complexities.			
			first se search	earch anc	explain depth- I breadth-first ms and their ies.	Can explain depth-first search and breadth-first search algorithms and their time complexities.		ch	Cannot explain depth-first search and breadth-first search algorithms and their time complexities.
			Dijkstr Floyd's	ccurately a's, Bellr algorith omplexit	nan-Ford, and ms and their	Can explain Dijkstra's, Bellman- Ford, and Floyd's algorithms and their time complexities.			Cannot explain Dijkstra's, Bellman-Ford, and Floyd's algorithms and their time complexities.
			Fulkers Push-r	son, Edŕr	explain the Ford- nonds-Karp, and gorithms and plexities.	Can explain the Edmonds-Karp, relabel algorithi time complexiti	and Po	ush- [']	Cannot explain the Ford- Fulkerson, Edmonds-Karp, and Push-relabel algorithms and their time complexities.
			Can ac Knuth- Moore comple	algorith	explain the ratt and Boyer- ns and their time	Pratt and Boyer-Moore			Cannot explain the Knuth- Morris-Pratt and Boyer-Moore algorithms and their time complexities.
Assigne	d Depart	ment Ol	ojectives						
	育目標 (D) 🖹		目標 (F) 学	習・教育	目標 (H)				
Teachin	g Metho								
Outline		binomia betweer get the compute	l sets of v n "things" solution fo	ertex and in real-wor it by sents will I	d edge sets, and a vorld problems. It olving it on a grap earn about algorit	are often used to is possible to for h. Strings are or	repres rmulate ne of th	sent the "r e a real prone ne most in	ns. Graphs are defined as elationships" or "connections" oblem as a graph problem and aportant kinds of data handled by strings in string data, such as
Style		Classes	will be he	ld in a le	cture style.				
This course's content will amount to 90 hours of study in total. These hours include the lead guaranteed in classes and the standard self-study time required for pre-study / review, an assignment reports. It is recommended for students to have mastered programming in C taking this course. Students who miss 1/3 or more of classes will not be eligible for a passing grade.						y / review, and completing amming in C language before			
Charact	eristics o	of Class /	[/] Divisio	n in Le	arning				
☐ Active Learning ☐ Aided by ICT					Т	☐ Applicable to	o Remo	te Class	☐ Instructor Professionally Experienced
·									
Course	Plan		l .						
			Theme				Goals Can ex	nlain algo	rithms computational
2nd		1st	_		of algorithms	Can explain algorithms, computational complexity, and orders.			orders.
Semeste	3rd Quarter	2nd	Basic dat				Can explain lists, stacks, queues, and heaps. Can explain graphs and trees. Can formulate a		
1		3rd	How to fo problems		real-world proble	ilis as grapii	problei	n for dete	rmining the meeting dates of ees 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 dep search algorithn	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 Dijkstra's algorithm for finding the shortest path from a single vertex and its time complexity.				
		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	shortest path from	om a single vert e shortest path	lgorithm for the tex and the Floyd between all time complexities.		
			Algorithms for sol 1/2	ving maximum fl	ow problems	Can explain the Karp algorithms	Ford-Fulkerson and their time	and Edmonds- complexities.		
		11th	Algorithms for sol 2/2	ving maximum fl	ow problems	Can explain the Push-relabel algorithm and its time complexity.				
	4th Ouarte	12th	Algorithms for str	ing pattern matcl	ning 1/3	Can explain the its time complex	Knuth-Morris-P kity.	ratt algorithm and		
	Q	13th	Algorithms for str	ing pattern matcl	ning 2/3	Can explain the (acceleration ide	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							
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	y	0	0	0	0	0	0	0		
Specialize Proficiency	zed 100 0 0		0	0	0	100				
Cross Area		0	0	0	0	0	0	0		

A	kashi Co	ollege	Year	2021			ourse Title	Advanced Electronic Circuit
Course	Informa	tion						
Course C		0040			Course Category	у	Specialize	d / Elective
Class For	mat	Lecture			Credits		Academic	Credit: 2
Departme	ent	Mechanica Engineerin	ll and Electronic	: System	Student Grade		Adv. 2nd	
Term		First Seme	ester		Classes per Wee	ek	2	
Textbook Teaching								
Instructo		INOUE Ka	 zunari					
	Objectiv							
This cour understar understar	se will tead nd the CMO nd the road n taken in	ch VLSI devic OS logic circu dmap for elec	it, apply it to co tronic circuit te	omputer and controchechnology. Further	ol circuits, learn t more, the aim is	the fea to unc	atures of v derstand th	the objective is to correctly arious memory LSIs, and ne challenges and measures that Imption and reliability
Rubric								
			Ideal Level		Standard Level			Unacceptable Level
Achievem	ent 1		Fully understa and operation techniques.	nd circuit design verification	Understand circle operation verificatechniques.	uit des	sign and	Do not understand circuit design and operation verification techniques.
Achievem	ent 2			nd technologies consumption and	Understand tech power consump speed.			Do not understand technologies for low power consumption and high speed.
Achievem	ent 3		Fully understa	nd high-density it technologies , DRAM, and	Understand high memory circuit such as SRAM, I Flash.	techno	ológies	Do not understand high-density memory circuit technologies such as SRAM, DRAM, and Flash.
Assigne	d Depar	tment Obje	ectives					
学習・教育	引標 (D) :	学習・教育目標	票 (F) 学習・教育	 i目標 (H)				
Teachir	g Metho	od						
Outline Style		performan memory a Classes wi exams, an 1) Undersi 2) Undersi 3) Undersi	nce design elect nd application pill be taught in l d evaluation witand circuit des tand technologi tand high-densi	ronic circuits of rec processor design. ecture and exercis ill be based on the ign and operationa es for low power c ity memory circuit	ign techniques for achieving them. s will be conducted in a lecture style format. Students will be introduced to the hi lectronic circuits of recent years by faculty members with practical experience in on processor design. in lecture and exercise formats for the following numbers 1) to 3). There will be n will be based on the submitted assignment. design and operational verification technologies. logies for low power consumption and high speed. ensity memory circuit technologies such as SRAM, DRAM, and Flash.			
Notice		This cours	e's content will					
Charact		assignmer	nt reports.	d the standard self	urs of study in total -study time requi	ired fo	ese hours or pre-stud	include the learning time y / review, and completing
	haracteristics of Class / Division in Learning			d the standard self r more of classes v	urs of study in total -study time requi	ired fo	ese hours or pre-stud	include the learning time y / review, and completing
☐ Active	Learning	assignmer Students v	nt reports. who miss 1/3 o	d the standard self r more of classes v earning	urs of study in total -study time requi	ired fo	ese hours or pre-stud passing g	include the learning time y / review, and completing
	Learning	assignmer Students v	nt reports. who miss 1/3 or Division in Le	d the standard self r more of classes v earning	urs of study in tot: -study time requi will not be eligible	ired fo	ese hours or pre-stud passing g	include the learning time y / review, and completing rade. Instructor Professionally
Course	Learning	assignmer Students v of Class / [nt reports. who miss 1/3 or Division in Le	d the standard self r more of classes v earning	urs of study in tot: -study time requi will not be eligible Applicable to	e for a	ese hours or pre-stud passing g	include the learning time y / review, and completing rade. Instructor Professionally
	Learning	assignmer Students v of Class / [heme ecture overview erformance VLS explain the lecture	d the standard self r more of classes vearning CT v and trends towar for re overview for Ad	rs of study in tot: -study time requivalent in the study time requivalent in the study in tot: - Applicable to the study in the study in tot: - Applicable to the study in th	Goals Lectur perfori	ese hours or pre-stud passing g ote Class e overviev mance VL stand the	include the learning time y / review, and completing rade. Instructor Professionally Experienced and trends toward higher SI ecture overview for Advanced
	Learning	assignmer Students vof Class / E	ht reports. who miss 1/3 or Division in Le Aided by IG heme ecture overviewerformance VLS xplain the lecture lectronic Circuit MOS/pMOS trar xplain nMOS/pM	d the standard self r more of classes vearning CT v and trends towar for re overview for Ad	Applicable to de digible de la companya de la compa	Goals Lectur perfori Unders Electror MOS Unders	ese hours or pre-stud passing g ote Class ote Class e overviev mance VLs stand the onic Circuit /pMOS tra stand nMC	include the learning time y / review, and completing rade. Instructor Professionally Experienced and trends toward higher sliecture overview for Advanced s. Insistors and CMOS inverters S/pMOS transistor and CMOS
	Learning	assignmer Students v of Class / E	heme ecture overviewerformance VLS xplain the lecturedirectronic Circuit MOS/pMOS tranxplain nMOS/pMoperation. MOS logic circuit	d the standard self r more of classes vearning CT v and trends towar of ire overview for Ad s. nsistors and CMOS MOS transistor and	Applicable to Ap	Goals Lectur perfori Unders Electror Nunders CMOS	ese hours or pre-stud passing g ote Class e overviev mance VL' stand the onic Circuit /pMOS tra stand nMC er operatic logic circu	include the learning time y / review, and completing rade. Instructor Professionally Experienced y and trends toward higher of I ecture overview for Advanced of S. hisistors and CMOS inverters of S/pMOS transistor and CMOS on.
	Learning	assignmer Students voor Class / E	heme ecture overviewerformance VLS xplain the lecturilectronic Circuit MOS/pMOS trar xplain nMOS/pM peration. MOS logic circuit xplain the vario ombinational circuit xplain the comb	d the standard self r more of classes vearning CT v and trends towar ire overview for Ad s. nsistors and CMOS MOS transistor and its	Applicable to Ap	Goals Lectur perfor Unders Electro Unders CMOS Unders CMOS Unders CMOS Unders Unders Unders Unders Unders Unders Unders	ese hours or pre-stud passing g ote Class e overviev mance VLS stand the r operatic logic circu stand CMC national c	include the learning time y / review, and completing rade. Instructor Professionally Experienced and trends toward higher of and trends toward higher si ecture overview for Advanced s. nsistors and CMOS inverters S/pMOS transistor and CMOS n. its
Course 1st	Plan	assignmer Students voor Class / E	heme ecture overviewerformance VLS xplain the lecturilectronic Circuit MOS/pMOS trar xplain nMOS/pM peration. MOS logic circuit xplain the vario ombinational cir xplain the comb mposed of CM MOS-based seq	d the standard self r more of classes vearning CT A and trends toward re overview for Admissions and CMOS MOS transistor and the companient of the compani	Applicable to Ap	Goals Lectur Undersinverte CMOS Underscompto CMOS Underscompto CMOS Underscompto Un	passing g ote Class e overview mance VL stand the onic Circuit /pMOS tra stand nMC er operatio logic circu stand CMC national ci stand the osed of CM -based sec stand the	include the learning time y / review, and completing rade. Instructor Professionally Experienced and trends toward higher of the control of
Course 1st	Plan	assignmer Students vof Class / E	heme Aided by IG Aided by IG	d the standard self r more of classes vearning CT A and trends toward recoverview for Admissors and CMOS MOS transistor and its us CMOS logic circuits using CMOS oinational circuits to OS logic circuits. In the country of the cou	Applicable to Ap	Goals Lectror Unders CMOS Unders COMOS	ese hours or pre-stud passing gote Class ote Class ote Class of CMC national costand the osed of CMC	include the learning time y / review, and completing rade. Instructor Professionally Experienced and trends toward higher of I ecture overview for Advanced s. Insistors and CMOS inverters of pMOS transistor and CMOS of I its of I combinational circuits that are of I combinational circuits that are of I combinational circuits of I comb

		8th	Volatile memory ci Explain SRAM and operation.	rcuits DRAM circuit cor	nfiguration and	Volatile memory Understand SRAN and operation.	circuits 1 and DRAM circu	uit configuration	
		9th	Non-volatile memo Explain non-volatil and operation.		configuration	Non-volatile memory circuits Understand non-volatile memory circuit configuration and operation.			
		10th	Circuit design exer Explain circuit inpu	cises using SPICI Its using SPICE.	∃ 1	Circuit design exe Understand circu	Circuit design exercises using SPICE 1 Understand circuit inputs using SPICE.		
		11th	Circuit design exer Explain circuit inpuusing SPICE.			Understand circu	Circuit design exercises using SPICE 2 Understand circuit inputs and operation verification using SPICE .		
	2nd	12th	Circuit design using submission 1 Solve the problems operation verification.	Circuit design usi submission 1 Solve the probler operation verifica	ns regarding circ	uit inputs and			
	Quarte	r 13th	Circuit design using submission 2 Solve and submit to inputs and operations.	the problems reg	arding circuit	Circuit design using SPICE; Assignment submission 2 Solve the problems regarding circuit inputs and operation verification using SPICE.			
		14th	Testing and reliabi Explain coverage a		stability.	Testing and relial Understand cove		for testability.	
		15th	Summary and futu Explain topics such sensor nodes, and trends in VLSI tech	n as more than M other future dev	oore, IoT elopment	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	y	0	0	0	0	0	0	0	
Specialize Proficiency		100	0	0	0	0	0	100	
Cross Area Proficiency		0	0	0	0	0	0	0	

A	kashi Co	ollege	,	Year	2021		Course Title	Mathematical Informatics	
Course :	Informa	tion							
Course Co	ode	0041				Course Category	Specializ	zed / Elective	
Class Forr	nat	Lecture				Credits	Academ	ic Credit: 2	
Departme	nt	Mechani Enginee	ical and E ring	lectronic	System	Student Grade	Adv. 2n	d	
Term		First Ser	nester			Classes per Wee	k 2		
Textbook Teaching									
Instructor		TSUCHI	DA Shuhe	ei					
Course	Obiectiv	es							
[1] Learn [2] Under [3] Under [4] Under [5] Under	and can e stand and stand and stand and stand and	explain the can config can config can config can config	lure the r lure the r lure decis	earest naive Bay ion trees ssion m	5.				
Rubric									
			Ideal	_evel		Standard Level		Unacceptable Level	
Achievem	Learn and can fully explain basic knowledge of statist analysis.				Learn and can ex knowledge of sta analysis.		ic Do not learn and cannot explain the basic knowledge of statistical analysis.		
Achievem	ent 2		Under config rule.	stand ar ure the	nd can fully nearest neighbor	Understand and the nearest neig	can configure hbor rule.	Do not understand and cannot configure the nearest neighbor rule.	
Achievem	ent 3				nd can fully naive Bayes.	Understand and the naive Bayes.		Do not understand and cannot configure the naive Bayes.	
			config	ure deci	nd can fully sion trees.	Understand and decision trees.		configure decision trees.	
					nd can fully ession methods.	Understand and regression method		Do not understand and cannot configure regression methods.	
	Understand and can fully configure other algorithms such as SVM. Understand and can configure other algorithms such as SVM.								
Assigne	d Depar	tment Ol	ojective	S					
学習・教育	百標 (D) 🖰	学習・教育目	目標 (F) 学	習・教育	目標 (H)				
Teachin	g Metho	od							
Outline		informat of statis laws and	tion engir tical anal d pattern:	ieering, /sis calle s in data	by regarding ther ed machine learni . After learning t	m as mathematical ng and data mining	models. Stud with the goa cal analysis, tl	world, especially those related to ents will learn about the applicatio I of configuring algorithms to find ney will take practical algorithms	
Style		the exer	cises will nt for stu	be the a dents to	assignment subje solve the exercis	cts that will be cov es conducted durir	ered in the fin	vercises that use computers. Since al report for evaluation, it is better understanding.	
English introduction plans: Technical terms This course's content will amount to 90 hours of study in total. These hours include the learning tim guaranteed in classes and the standard self-study time required for pre-study / review, and comple assignment reports. To achieve these goals, students are required to self-study outside of classes: (1) Pre-study and review lecture content. (2) Work on the six assignments given in class. Evaluation method: Six assignment reports (100%) Evaluation criteria: The following should be learned to achieve the Course Objectives and Aims: [1] Can implement basic processing of statistical analysis in R language. [2] Can implement programs using the nearest neighbor rule in R language. [3] Can implement programs that apply the naive Bayes in R language. [4] Can implement a program that uses decision trees in R language. [5] Can implement programs that apply the regression method in R language. [6] Can implement other programs that apply algorithms such as SVM in R language.					ody / review, and completing es: Objectives and Aims: e. ge. language.				
<u> </u>						will not be eligible	for a passing	grade.	
Charact	eristics (of Class /	' Divisio	n in Le	earning	1			
□ Active	Learning		□ Aid	ded by I	СТ	☐ Applicable to	Remote Class	☐ Instructor Professionally Experienced	
Course	Plan								
			Theme				Goals		
		1st	Introduc	tion to n	nachine learning	C	Can explain the	e evolution of machine learning and not future learning.	
1st Semeste	1st Quarter	2nd	Statistica	al analys	is review 1	b	Can explain what has been learned about basic statistics used in statistical analys mean, dispersion, and deviation.		
'		3rd	Statistica	al analys	is review 2	s	Can handle bas uch as mean, anguage.	sic statistics for statistical analysis dispersion, and deviation in R	

		4th	Nearest neighbo	or algorithms 1		Can explain w	hat has been e bor algorithms.	xplained about		
			Nearest neighbo	Nearest neighbor algorithms 2			Can verify a nearest neighbor algorithm in R language.			
			Naive Bayes alg	orithm 1		Can explain w naive Bayes a	hat has been e lgorithm.	xplained about the		
			Naive Bayes alg	orithm 2		Can verify a n	aive Bayes algo	orithm in R language.		
		8th	Decision tree alg	gorithms 1		Can explain w decision tree a	hat has been e algorithms.	xplained about		
			Decision tree alo	gorithms 2		Can verify a d language.	ecision tree alg	orithms in R		
		10th	Regression met	nods 1			Can explain what has been explained about regression methods.			
		11th	Regression met	Regression methods 2			Can verify a regression algorithm in R language.			
	2nd	2nd 12th	Pattern recognit	ion algorithm SVN	1	Can explain what has been explained about the pattern recognition algorithm SVM.				
	Quarte	r 13th	Correlation rules	5		Can explain what has been explained about correlation rules.				
		14th	k-means cluster	ing			Can explain what has been explained about k-means clustering.			
		15th	Methods for eva	luating a model's	performance	Can explain what has been explained about methods for evaluating a model's performance.				
		16th	No final exam							
Evaluat	ion Me	thod and	l Weight (%)							
	R		Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total		
Subtotal	Subtotal 1		0	0	0	0	0	100		
Basic Proficienc	Basic Proficiency 0		0	0	0	0	0	0		
	Specialized Proficiency		0	0	0	0	0	100		
Cross Are Proficienc		0	0	0	0	0	0	0		

Akashi College		Year	2021		Course Title	Digital Circuit Design		
Course	Informa	tion						
Course C	ode	0042			Course Category		red / Elective	
Class For	mat	Lecture			Credits	Academi	c Credit: 2	
Departme	ent	Mechanica Engineerin	l and Electronic g	System	Student Grade	Adv. 2nd	i	
Term		First Seme	J		Classes per Wee	/eek 2		
Textbook	and/or Materials	特に指定し	ない。					
Instructo		IWAMOTO	Hisashi					
	Objectiv							
プロセッサ 1) アーキ 2) 低消費	ナを中心とし レクチャレ 電力化のた	」たディジタル ベル、回路レ^ めの制御技術を	ジルでプロセッサ		ぶ。 別処理による高速化:	技術を理解する。	,	
Rubric								
			理想的な到達レ	ベルの目安	標準的な到達レベ	ルの目安	未到達レベルの目安	
評価項目1			アーキレクチャールの並列処理に、 十分に理解でき	レベル、回路レベ よる高速化技術を る。	アーキレクチャレ ルの並列処理によ 理解できる。	ベル、回路レベ る高速化技術を	アーキレクチャレベル、回路レベルの並列処理による高速化技術を 理解できない。	
評価項目2	!		十分に理解でき		低消費電力化のた 理解できる。	めの制御技術を	低消費電力化のための制御技術を 理解できない。	
評価項目3	.		SRAM, DRAM, メモリ回路技術; る。	FLASHなど高集積 を十分に理解でき	SRAM, DRAM, FI メモリ回路技術を		SRAM, DRAM, FLASHなど高集積 メモリ回路技術を理解できない。	
Assigne	d Depar	tment Obje	ectives					
学習・教育] 	学習・教育目標	(G) 学習・教育	目標 (H)				
Teachin	ig Metho							
Outline		VLSIデバイ 本科目では する。	スは、高速化、個 これらを実現する	低消費電力化、高集 なためのディジタル	積化の3つの軸でB 回路設計技術につい	目覚ましい発展を Nて、アーキテク	z遂げた。 アチャ技術、回路技術の視点から講義	
Style		1) アーキレ 2) 低消費電 3) SRAM, I	·クチャレベル、[記力化のための制行 DRAM, FLASHな	授業を行う。試験() 回路レベルの並列収 卸技術を理解する。 ど高集積メモリ回路)連絡員:周山大慶	は実施せず課題演習 ^L 理による高速化技行 各技術を理解する。)	で評価を行う。 析を理解する。		
Notice		習時間の総 合格の対象	計が、90時間に村 としない欠席条件	目当する学習内容で F(割合) 1/3以上の	ある。	復習及び課題レ	ポート作成に必要な標準的な自己学	
Charact	eristics	of Class / D	<u> Division in Le</u>	arning	1		To	
□ Active	Learning		☐ Aided by IC	T	☐ Applicable to	Remote Class	☐ Instructor Professionally Experienced	
Course	Plan							
Course		Tr	neme			Goals		
		1st 講	構義の概要とVLSI高性能化動向			電子回路特論の講義概要について理解する。		
		2nd パ	イプラインアーキ	 トテクチャ – 1		モデルCPUを定義し、時間並列アーキテクチャにJ 亨速化を理解する		
		2 1	/ 	L- <i>h</i> -r -		高速化を理解する。 パイプラインハザードとその回避技術について理解す		
ı			イプラインアーキ			3.		
	1st	4th ス	ーパースカラーフ	アーキテクチャ			テクチャによる高速化を理解する。	
	Quarter	5th VI	_IWアーキテクチ	ヤ		別な例の空間亚タ する。	アーキテクチャによる高速化を理解	
I		6th ベ	クトル演算アーコ	キテクチャ	Ī	,。。 画像処理などのベクトルデータ処理に最適化されたア ーキテクチャを理解する。		
		7th マ	ルチコアアーキラ	テクチャ		近年の主流であるメニーコアおよびヘテロジーニャス マルチコアを理解する。		
1st Semeste		8th 並	列加算回路			種々の並列加算回路技術を紹介し、それらの得失について理解する。		
r		9th 算	術論理演算回路			ALUの設計を実施 ハて理解する。	をするとともに、CMOS構成ALUにつ 	
		10th 並	列乗算回路 – 1		7	種々の並列乗算を高速化するアルゴリズム、回路技術 を紹介し、それらの得失について理解する。		
		11th 並	列乗算回路 – 2				を高速化するアルゴリズム、回路技術 らの得失について理解する。	
	2nd	12th 揮	発性メモリ回路				ご動作について理解する。	
	Quarter		揮発メモリ回路				回路構成と動作について理解する。	
		14th 低	消費電力技術			マルチ閾値、パワ 解する。	フーゲーティング、動的制御技術を理	
			後の動向				re、IoTセンサーノードなど今後の 動向を理解する。	
		16th 期	末試験実施せず					

Evaluation Method and Weight (%)										
	試験	発表	相互評価	態度	ポートフォリオ	課題	Total			
Subtotal	0	0	0	0	0	100	100			
総合評価割合	0	0	0	0	0	0	0			
基礎的能力	0	0	0	0	0	0	0			
専門的能力	0	0	0	0	0	80	80			
分野横断的能力	0	0	0	0	0	20	20			

Akashi College			Year	2021		Course Title	Optimization Design			
Course	Informat	tion	'			1.0.0				
Course Co		0043			Course Categor	y Specia	alized / Elective			
Class Forr	nat	Lecture			Credits		mic Credit: 2			
Departme	ent	Mechani Enginee	cal and Electronic ring	System	Student Grade	Adv. 2	Adv. 2nd			
Term		Second	Semester		Classes per We	ek 2				
Textbook Teaching										
Instructor		SHI Fen	ghui							
Course	Objectiv	es								
(2) Under (3) Under (4) Can e	stand and stand the xplain and	can calcula concepts a practice th	nd mathematical one principles of option	atical formulas for expressions of mu timal design for ge	'linear and nonli Iti-objective opt enetic algorithms	near program imization. (D) s. (F) and (H)	nming optimization techniques. (D)			
Rubric										
			Ideal Level		Standard Level		Unacceptable Level			
Achievem	ent 1		Understand an about the know methods for optimal design	vledge and otimization and	Understand and knowledge and optimization an	methods for	about the knowledge and			
Achievem	ent 2		Understand an calculate the backer mathematical for linear and nonl programming of techniques.	asic ormulas for inear	Understand and basic mathema linear and nonli programming of techniques.	tical formulas inear				
Achievem	ent 3		and mathemat	nd the concepts ical expressions ive optimization	Understand the mathematical emulti-objective	expressions of	f and mathematical expressions			
			Fully understar genetic algorith mathematical e	nms and	Fully understan genetic algorith mathematical e	ıms and	Fully understand the idea of genetic algorithms and mathematical expressions			
				nd calculate the for a helical gear	Can program a optimal design reducer					
Assigne	d Depart	tment Ol	ojectives							
学習・教育	î目標 (D) ≒	学習・教育目	目標 (F) 学習・教育	目標 (H)						
Teachin	g Metho	d								
Outline		actively As comp in the fu	used in a variety of outers continue to oture. In this cou	of fields in respons develop, the impourse, students will primization technic	se to the deman ortance of optimi learn about the gues. They will a	d for higher p ization and or concepts and also learn spe	which covers design fields) are being performance in mechanical systems ptimal design is expected to increas if processes of optimization and cific examples of optimal design for je.			
Style				l be held in a lecture style. There will be assignments as appropriate.						
Notice		guarante	irse's content will eed in classes and ent reports. s who miss 1/3 or	the standard self-	-study time requ	iired for pre-s	urs include the learning time study / review, and completing			
Charact	eristics (<u> </u>	Division in Le		···· ···oc be engible	<u> </u>	g grader			
☐ Active		or Class /	☐ Aided by IC		☐ Applicable to	o Remote Cla	Instructor Professionally Experienced			
			'							
Course	Plan									
			Theme			Goals				
		1st	Course guidance			Explain the course content in accordance with the syllabus				
		2nd	Optimization cond	cepts and termino	logy	Explain concepts, terminology, and techniques of optimization through examples of optimal design, and optimization and optimal design problems.				
2nd Semeste	3rd Quarter	3rd	(Matlab) Learn the basic o	hods using Optimi perations of Matla box for calculating	b/Simulink and	How to use N Toolbox	MATLAB/Simulink and Optimization			
r	Quarter	4th	•	ing optimization (1)	An outline of	linear programming optimization differentiation discrimination methods.			
		5th	Linear programm	ing optimization (hod and examples of its application			
		6th		ing optimization (Example applications of linear programming methods. Linear programming optimization using Matlab's Continuization Toolbox				

		1							
	7th	Multi-objective optimization report objective optimization of new bus r		Learn about the weighted method for the multi- objective optimization method. Take application examples to learn how to do multi-objective optimization in the exercise.					
	8th	Report 1: Multi-objective optimizat routes (2)	ion of new bus	Plan a new bus route to maximize customer satisfaction and profit for the bus operator using multi-objective optimization. Multi-objective optimization using Matlab's Optimization Toolbox.					
	9th	Nonlinear programming optimization	on (1)	An overview of non-linear optimization problems and optimization techniques. Explain application examples of nonlinear programming in engineering and unconstrained optimization techniques.					
	10th	Nonlinear programming optimization	on (2)	Explain constrained optimization techniques and learn SUMT, linear minimization techniques, and Powell's conjugate direction method. Learn about modeling, formulation, preprocessing, optimization calculation programs and examination of optimization results.					
4th Ouarter	11th	Nonlinear programming optimization	on (3)	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.					
	12th	Report 2: Optimal designs for helic reducers (1)	al gear	Use the gear design knowledge learned in Engineering Design and Design and Drawing, and create the optimal design for a helical gear reducer.					
	13th	Report 2: Optimal designs for helic reducers (2)	al gear	Formulate methods for objective functions, design variables, and constraints.					
	14th	Report 2: Optimal designs for helic reducers (3)	al gear	Promote 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.					
	15th	Summary and evaluation		Summarize and review the content learned on this course.					
	16th	Final exam							
Evaluation Method and Weight (%)									
		Examination	Exercise&Repo	ort	Total				
Subtotal		40	60		100				
Basic Proficiency		30	30		60				
Specialized Proficier		10	20		30				
Cross Area Proficien	су	0	10		10				

Akashi College			Year	2021		(Course Title	Micromachine			
Course	Informa	tion						_			
Course C	ode	0044				Course Categor	ry	Specialized / Elective			
Class For	ormat Lecture					Credits		Academic	Credit: 2		
Departme	ent	Mechani Enginee	ical and Electronic System ring		Student Grade		Adv. 2nd				
Term		Second	Seme	ester		Classes per We	ek	2			
Textbook Teaching	and/or Materials										
Instructo	r	MATSUZ	ZUKA	Naoki							
Course	Objectiv	es es									
(2) Unde (3) Can 6 (4) Unde	rstand and explain mid rstand and	l can explai cromachine: l can explai	n the s fron n det	principles of n their structu ection princip	materials and car typical semicondure to the fabricat eles of sensors and niques. (F) and (H	uctor micromach ion process. (F) d driving princip	nińing	techniques			
Rubric											
			Id	eal Level		Standard Level		<u> </u>	Unacceptable Level		
Achievem	nent 1		ch m ca	aterial and ca	of anisotropic In accurately Invsical property	Understand the of anisotropic r calculate the pl values of crysta	nateri hvsica	als and car I property	Do not understand the characteristics of anisotropic materials and cannot calculate the physical property values of crystal orientation.		
Achievem	nent 2		ac of	ully understar ccurately expl typical semic icromachining	ain the principles conductor	Understand ar the principles of semiconductor techniques.	of typic	cal [']	Do not understand and cannot explain the principles of typical semiconductor micromachining techniques.		
Achievem	nent 3		de			Can explain micromachines from their structure to the fabrication process.			Cannot explain micromachines detail from their structure to the fabrication process.		
			ac pr	ully understant ccurately expl inciples of sei inciples of ac	ain detection nsors and driving	Understand and can explain detection principles of sensors and driving principles of actuators.		of sensors	Do not understand and cannot explain detection principles of sensors and driving principles actuators.		
				an accurately ctuator design		Can apply sensor and actuator design techniques.			Cannot apply sensor and actuator design techniques.		
Assigne	ed Depar	tment Ol	oject	tives							
学習・教育	育目標 (D)	学習・教育目	目標 (F	F) 学習・教育E	目標 (H)						
Teachir	ng Metho	od									
Outline		sensors, in a wid techniqu	, actu e ran ues ar	ators, and ele ge of fields. T nd micromach	ectronic circuits us he first half of thi nine fabrication m	sing semiconduc s course will exp ethods. The sec	ctor mi plain to ond ha	icromachin ypical semi alf will exp	It integrate micro structures, ing technology. They are applied iconductor micromachining lain the principles of sensors used tor design techniques.		
Style		Classes	will b	ill be held in a lecture-style format and will be taught with handouts.							
This cours guarantee assignmer strength o				n classes and eports. It is ro naterials, and ill be explaine	the standard self- ecommended that electronic circuits	-study time requ t students have s. However, this	uired fo a basi course	or pre-stud c knowledg e is open to	include the learning time dy / review, and completing ge of engineering materials, o all students as the necessary rade.		
Charact	eristics	of Class /	Div	rision in Lea	arning						
□ Active	Learning	,		Aided by IC	Т	☐ Applicable t	o Remote Class		☐ Instructor Professionally Experienced		
Course	Plan										
			Then	me			Goals				
		1st	An o	verview of m	icromachines		Understand micromachine development history and scaling laws.				
		2nd	Phys	ical propertie	es of single-crystal silicon (1)		Understand the crystal structure, manufactu methods and anisotropic properties of single crystal silicon.		crystal structure, manufacturing		
2nd	2rd	3rd	Phys	ical propertie	s of single-crystal	silicon (2)	Understand the calculation method for the physical properties in arbitrary crystal orientation of single-crystal silicon.				
Semeste	3rd Quarter	4th	Phot	olithography			Understand the principles of photolithography.				
ľ		5th	Film	deposition (1)		Understand the sputter, vapor deposition, a chemical vapor deposition methods.				
		6th	Film	deposition (2)			rstand thei	rmal oxidation and impurity		
		7th	Etchi	ing (1)			Unde	rstand liqu	id-based isotropic and anisotropic		
		8th					etching of single-crystal silicon.				
	1	loui	8th Etching (2)					Understand gas-based dry-etching.			

		9th	Micromachine fab	Micromachine fabrication technology			Understand micromachine fabrication processes using semiconductor micromachining techniques.			
		10th	Sensor design ted	chnology (1)		Understand ty principles.	Understand typical micro-sensors and sensing principles.			
	4th Quarter	11th	Sensor design ted	Sensor design technology (2)			Understand how to design piezoresistive pressure sensors.			
		12th	Sensor design ted	chnology (3)		Design a piezo	oresistive press	ure sensor.		
		13th	Actuator design t	echnology (1)			Understand typical micro actuators and their driving principles.			
		14th	Actuator design t	echnology (2)		Understand he actuator.	Understand how to design an electrostatic drive actuator.			
		15th	Actuator design t	ator design technology (3)			Design a electrostatic drive actuator.			
		16th	Final exam							
Evaluati	ion Me	thod and	Weight (%)							
	E	xamination	Assignments	Mutual Evaluations between students	Behavior	Portfolio	Other	Total		
Subtotal	Subtotal 60		40	0	0	0	0	100		
Basic Proficiency)	0	0	0	0	0	0		
Specialized Proficiency		50	40	0	0	0	0	100		
Cross Are Proficienc)	0	0	0	0	0	0		