Course number	U-ENG29 22050 LJ55	U-ENG29 22050 LJ	10	
Course title (and course title in English)	女学A 1 d Mathematics A1	Instructor's name, job title and departmer of affiliation	Oraduate D	chool of Informatics essor,SHIBAYAMA MITSURU
Target year 2nd	l year students or above Number	of credits 2	'ear/semesters	2020/Second semester
Days and periods Thu	1.2 Class style	Lecture	Language of instructi	n Japanese
[Overview and p	ourpose of the course]			
mathematical analy apply it to compute				
[Course objective				
To understand prop mathematics and pl	erties of complex functions sysics.	s with a skill for evalua	tion of integrals	appearing in applied
[Course schedu	le and contents]			
 Application to Point at infinity 	actions tions omplex plane l theorem ities actions uation ing trigonometric functions improper integral a and Riemann sphere	5		
[Course require	-			
Calculus, Linear al	gebra			
[Evaluation met	hods and policy]			
Evaluation depends needed.	mainly on marks of exami	nation, but marks of ex	ercises are take	n into account when
[Textbooks]				
Not used				
			Continue to	o 工業数学A 1 (2)↓↓↓

Course title (and course title in English)		文学F1(将 ed Mathema				nam and	uctor's e, job tit departm filiation	nent		nool of Engineering sor,NISHIKAWA MASAA
Target yea	• 2n	d year students (or above	Number	of cred	lits	2	Year	/semesters	2020/Second semeste
Days and perio	ds Tue	e.3	Class	s style	Lectur	e			Language of instruction	Japanese
[Overview	and p	ourpose o	f the	course]						
	e is to The di	explain the ifferential a	funda	mentals of	comple	x ana				ication to engineering asic ideas, and the
[Course o	hiecti	veel								
Understandi			mnle	x analysis a	and obta	ining	ability	to pre	ctice it	
			pic.					.o pru		
 Line integ Cauchy' Taylor Taylor Applicat Applicat Concept Feedback Confirmation 	s theor and L lar poi ion to of con c n of lea	rem and inte aurent serie ints and res definite inte formal map arning achie	egral f s idue tl gral ping,	formula neorem other topic		natior	1			
[Course re										
Fundamenta	ls of di	ifferential a	nd int	egral calcu	lus					
[Evaluatio	n met	hods and	polic	cy]						
	vill be s, eval es, the n stand	mainly base luation for l ratio of the lard]	omev evalu	vork (short lations for 1	reports: regular e	abou exami			will be also c omework is a	

工業数学 A 1 (2)	工業数学F1 (機材エネ原:学番奇数) (2)
	[Textbooks]
[References, etc.]	A. Fujimoto 『Outline of complex analysis (Fukuso-kaisekigaku Gaisetsu)』 (Baifukan) ISBN:978- 4563005719 (in Japanese, published in 1990.)
(Reference books)	4363003719 (In Japanese, published in 1990.)
Lars V. Ahlfors "Complex Analysis." (McGraw-Hill Education) ISBN:978-0070006577	
	[References, etc.]
(Related URLs)	(Reference books)
(KULASIS)	To be referred to during the course
[Study outside of class (preparation and review)]	[Study outside of class (preparation and review)]
Students need to solve exercises.	Homework (short reports) for the problems stated in the textbooks will be assigned.
(Other information (office hours, etc.))	(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.	*Please visit KULASIS to find out about office hours.

	ber	U-EN	G25 2	2055 LJ75	U-ENO	325 2	22055	LJ55		
	工業数学F1 (機材工永原:学番偶数) Applied Mathematics for Engineering F1 and department of affiliation Part-time Lecturer,							cturer,		
Farget year	2nd ye	ear students (Number	of credits 2 Yea				semesters	2020/Second semester	
Days and periods	Tue.3		s style	Lecture		Japanese				
[Overview a	nd pu	rpose o	course]							
Introduction to	comp	lex analy	sis and	d some app	lications					
[Course obj	ective	s]								
Understanding	the ba	sics of co	omple	k analysis a	nd obtai	ning a	ability	to prac	tice it	
[Course sch	edule	and co	ntent	s]						
based IDS by s	tudyin	g open se	ource a	signature-b	ased IDS	and a	attack	s, such	as correspor	help the intrusion detection by signature- ndence between alarms
based IDS by s issued from ID Intrusion Detectraffic by mach Presentation, It machine learni [Course req	tudyin S and ction b ine lea ime,Ba ng, and uirem	g open se commun y Machir arning alg ased on the d discuss	ource s icatior ne Lea gorithr he exe it with	signature-b: is, and addi rning,7time ns and pub/ rcise, stude n other stud	ased IDS ng signa es,Learn lic datase nts prese ents and	and a tures the m et for ents th	attack to det nethod bench heir m	s, such ect atta of clas markin ethods	as correspor cks. sifying norm g intrusion d	detection by signature-
based IDS by s issued from ID Intrusion Detec traffic by mach Presentation,1t machine learni [Course req Fundamentals	tudyin S and ction b ine lea ime,Ba ng, and uirem of diffe	g open se community y Machir arning alg ased on the d discuss ents] erential a	ource s icatior ne Lea gorithr he exe it with	signature-b is, and addi rning,7time ns and publ rcise, stude n other stud egral calcul	ased IDS ng signa es,Learn lic datase nts prese ents and	and a tures the m et for ents th	attack to det nethod bench heir m	s, such ect atta of clas markin ethods	as correspor cks. sifying norm g intrusion d	detection by signature- ndence between alarms nal and malicious letection performance.
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based IDS by s issued from ID Intrusion Detectraffic by mach Presentation, 1t machine learni [Course req Fundamentals [Evaluation]	tudyin S and ction b ine lea ime,Ba ng, and uirem of diffe	g open so communi y Machir arning alg ased on th d discuss ents] erentsal a	purce sication ne Lea gorithm he exe it with nd inte polic	signature-b is, and addi rning,7time ns and publ rcise, stude n other stud egral calcul	ased IDS ng signa es,Learn lic datase nts prese ents and	and a tures the m et for ents th	attack to det nethod bench heir m	s, such ect atta of clas markin ethods	as correspor cks. sifying norm g intrusion d	detection by signature- ndence between alarms nal and malicious letection performance.
based IDS by s issued from ID Intrusion Detec Traffic by mach Presentation, It machine learni [Course req Fundamentals [Evaluation Regular exami	tudyin S and ction b ine lea ime,Ba ng, and uirem of diffe metho nation	g open so community Machir arning alg ased on the d discuss ents] erential a ods and and Repo	ource s ication ne Lea gorithr he exe it with nd into polic orts	signature-bis, and addi rning,7time ns and publ rcise, stude a other stud egral calcul	ased IDS ng signa es,Learn lic datase nts prese ents and us	and a tures the m et for ents th instru	attack to det nethod bench heir m ructors	s, such ect atta of clas umarkin ethods	as correspor cks. sifying norm g intrusion d	detection by signature- ndence between alarms nal and malicious letection performance.
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based IDS by s issued from ID Intrusion Detectraffic by mach Presentation, It machine learni [Course req Fundamentals [Evaluation Regular exami [Textbooks] To be referred	tudyin S and tition b S and tition b line leases ime,Ba ng, and uirem uirem to diffe methon nation to duri , etc.]	g open so communy Machin arming alg ased on til d discuss eents] erential a ods and and Repo ing the co ks)	pource s ication ne Lea gorithme execution it with nd inter polic ports	signature-bis, and addi rning,7time ns and publ rcise, stude a other stud egral calcul	ased IDS ng signa es,Learn lic datase nts prese ents and us	and a tures the m et for ents th instru	attack to det nethod bench heir m ructors	s, such ect atta of clas umarkin ethods	as correspor cks. sifying norm g intrusion d	detection by signature- ndence between alarms nal and malicious letection performance.
based IDS by s issued from ID Intrusion Detectraffic by mach Presentation, It [Course req Fundamentals [Evaluation Regular exami [Textbooks] To be referred [References (References	tudyin S and tion b ine lee ime,B3 ang, and uirem of diffe methon nation to duri to duri to duri	g open so commun y Machin arning alg ased on ti d discuss ents] erential a ods and and Repo ing the co	pource s ication ne Lea gorithm he exe it with nd into polic ports pourse (signature-b. ss, and addi rrning.7time ms and publicrise, stude a other stud egral calcul egral calcul Nishikawa)	ased IDS ng signa es,Learn lic datassi ents prese ents and us	s and a tures the m et for l ents th instru-	attack to det nethod bench heir m ructors	s, such ect atta of clas umarkin ethods	as correspor cks. sifying norm g intrusion d	detection by signature- ndence between alarms nal and malicious letection performance.
based IDS by s issued from ID Intrusion Detectraffic by mach Presentation, It [Course req Fundamentals [Evaluation Regular exami [Textbooks] To be referred [References (References To be referred	tudyin S and ction b ine lease inme,B- ng, and uirem of diffe metho nation to duri to duri de of	g open so community of Machine arming alg ased on til d discuss ents] erential a ods and and Repo- ing the co- ks) class (p	pource s icatior le Lea gorithm he exe it with nd into polic ports pourse (pourse pourse	signature-b. ss, and addi rning,7time ms and public ress, stude a other stud egral calcul egral calcul xy Nishikawa) ration and	ased IDS ng signa es,Learn lic datassi ents prese ents and us	s and a tures the m et for l ents th instru-	attack to det nethod bench heir m ructors	s, such ect atta of clas umarkin ethods	as correspor cks. sifying norm g intrusion d	detection by signature- ndence between alarms nal and malicious letection performance.

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Course n	umber	U-ENO	329 32	2060 LJ54	U-EN	G29	9 32060	LJ55	U-ENG29 3	2060 LJ10
Course title (and course title in English)		学A 2 Instructor d Mathematics A2 and depar of affiliatio						nent	Professor,NAI Graduate Sch	nool of Informatics KAMURA YOSHIMASA nool of Informatics ssor,TSUJIMOTO SATOSHI
Target yea	ı r 3rd	year students o	or above	Number	of cred	its	2	Yea	r/semesters	2020/First semester
Days and peri	ods Mor	n.2	Class	s style	Lecture	e			Language of instruction	Japanese
singular valupolynomials and informathe first class	ue deco s, and nu ition pro ss. bjectiv ing both	mposition, umerical in ocessing. /es]	iterati tegrati *Ther	on method ion method e is a possi ractical me	s for nor ls are ex bility to ethods for	nlin plai rep	ear equa ned whi lace Co	tions, ch are urse T	interpolation important esp opics. Detail	alue problem and methods by secially in data science will be announced at purpose softwares and/
Gershgorin method with matrix singu	theorem theorem the Ho the Ho thods fo	problem,6tin n, the powe ouseholder ne decompo or nonlinear	mes,co r meth transfo osition r equa	omputation od and the prmations f ,1time,con tions,3time	inverse for prepr putations,the pri	iter oce n of inci	ration, th ssing, S matrix ple of co	turm t singul	method and theorem ar value decor ive mapping a	s by the Jacobi method, he divide amp conquer nposition and the Newton method
polynomials	s, and th ntegration tegration	e spline fui on methods on formula	nction ,2time	s es,Newton-	Cotes n	ume	erical int	egrati	on formula,an	terpolation formula by d the Gauss type
[Course r	equire	ments]								
Linear Alge	bra A, I	Linear Alge	ebra B	, Numerica	d Analy	sis				
[Evaluatic mainly evaluation			•		orts of e	xer	cises wi	ll be t	aken into acco	ount in a case.

Continue to 工業数学A 2 (2)↓↓↓

quotIntroduction of Numerical Analysisquot (in Japanese) by T. Yamamoto, SAIENSU-SHA isbn{}{ 4781910386}

工業数学A2(2)

[Textbooks]

[References, etc.] (Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) Please visit KULASIS to find out about office hours

U-ENG25 32065 LJ75 U-ENG25 32065 LJ55 Course number Course titl Graduate School of Informatics 工業数学 F 2 (機:学番奇数) name, job title, and department of affiliation (and cours Professor, KANOU MANABU title in Applied Mathematics for Engineering F2 Graduate School of Informatics Professor,OOTSUKA TOSHIYUKI English) Brd year students or above Number of credits 2 Year/semesters Target year 2020/First semester Days and periods Tue.2 Class style nguage of instruc Japanese Lecture [Overview and purpose of the course] Fourier analysis and its application will be described. The major part consists of Fourier series, Fourier transform, and Laplace transform. [Course objectives] The goal is to understand the basics and applications of Fourier analysis. [Course schedule and contents] Preliminaries, Itime, The goal and outline of this class are presented. Then, basic knowledge necessary to learn Fourier analysis is briefly reviewed. Fourier series, ltime, Fourier series expansion of periodic functions is described. Complex Fourier series, ltime, Complex Fourier series, its differential and integral, and spectrum are escribed. Characteristics of Fourier series. Itime. Characteristics of Fourier series are described. Fourier transform, I time, In order to cope with aperiodic functions, Fourier transform is described. Characteristics and applications of Fourier transform is explained together with the Parseval#039s equation and its applications. Linear systems, ltime, Linear systems is described. Solutions of linear differential equations are given by using Fourier series expansion. In addition, impulse responses and transfer functions of linear systems are explained. nary of the first half,1time,A summary of Fourier series and Fourier transform is provided, and an examination will be given. Parseval#039s equality and its applications, ltime, Parseval#039s equality, the WienerndashKhinchin theorem, and the relationship between impulse responses and cross-correlation functions in linear systems are described. Introduction to partial differential equations, ltime, Basic notions of partial differential equations are described Solutions of the wave equation and their physical interpretations, I time, The wave equation, one of important partial differential equations, is solved and physical interpretations, itine, incover equation, ice of important partial differential equations, is solved and physical interpretations of its solutions are discussed. Fourier series for solving the wave equation, ltime, Another expressions of solutions to the wave equation are derived in the form of Fourier series expansions. Introduction to Laplace transform , 1time, Laplace transform and its characteristics are described aiming at solving ordinary differential equations. Laplace transform for solving ordinary differential equations, ltime, Ordinary differential equations are solved by applying Laplace transform and its inverse transform. Discrete Fourier transform and fast Fourier transform, ltime, Discrete Fourier transform for analyzing

sampled data is described. Continue to 工業数学 F 2 (機:学番奇数) (2)↓↓↓

工業数学 F 2 (機:学番奇数) (2)	
	- I H
Evaluation of achievement, l time, The achievements are evaluated.	
	t
[Course requirements]	
None	- I H
[Evaluation methods and policy]	
The regular examination, assignments, and attitude in the class will be taken into account.	
	6
[Textbooks]	F
Shinichi Ohishi: Fourier Analysis, Iwanami-Shoten isbn{}{9784000077767}	- I L
[References, etc.]	1
(Reference books)	p
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[Study outside of class (preparation and review)]	
[Study outside of class (preparation and review)]	F
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(Other information (office hours, etc.))	S
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Course nu												
	umbe	•	U-EN	IG25 3	2065 LJ7	75 U-EN	G25	5 32065	LJ55			
Course title (and course title in English)	d course in Applied Mathematics for Engined						nan and	tructor's ne, job ti d departn affiliation	tle, nent	Graduate School of Engineering Associate Professor,ICHII TAKA Graduate School of Engineering Associate Professor,YUGE KORET.		
Farget yea	r 3	rd year	student	s or above	Numbe	er of crea	lits	2	Yea	r/semesters	2020/First semester	
Days and perio					s style	Lectur	e			Language of instruction	Japanese	
[Overview		•				•						
Fourier anal	ysis, l	Lapla	ce trai	1sform,	, Linear A	Algebra an	id the	eir appli	icatior	15.		
transform an physical phe mathematica	nd Lin enome al rigo	ear A na ai r but	lgebra d solv on de	a, and t ving rel velopin	o learn to evant dif 1g skills t	o make ful ferential e o perceive	l use quat	e of thes tions. Pa	e matl articula	hematical tool ar emphasis is	er transform, Laplace ls in analyzing various s placed not on pursuin uese tools and select th	
most approp						lving.						
	of Fo			weeks) -basics	of Fourie	Fou r tra	rier seri nsform∖	es exp -conv	ansion - appl olution and co	weeks)\ -periodic ications of Fourier orrelation function\ -	
basics of La	place ce∖ - l	urier trans Map :	transf form\ and ma	weeks) orm\ -l -applic)\ -basics inear resp ations of	of Fourie ponse syst Laplace t	Fou r tra em\l ransf	rier seri nsform∖ Laplace form to	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier	
basics of La - Vector spa	place ce∖ - l equir	urier trans Map : eme	transf form\ and ma nts]	weeks) form\ -1 -applic atrix\Aj)\ -basics inear resp ations of pplication	of Fourie ponse syst Laplace t ns of Four	Fou r trai em\l ranst ier ti	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
basics of La - Vector spa	place ce∖ - l equir subje	urier trans Map : eme cts: c	transf form\ and ma nts]	weeks) orm\-1 -applic atrix\Aj ex numl)\ -basics inear resp ations of pplication bers and	of Fourie ponse syst Laplace t ns of Four	Fou r trai em\l ranst ier ti	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
basics of La - Vector spa [Course re Prerequisite	place ce∖ - l equir subje on me	urier trans Map : eme cts: c	transf form\ and ma nts] comple	weeks) form\-1 -applic atrix\Aj)\ -basics inear resp ations of pplication bers and cy]	of Fourie ponse syst Laplace t ns of Four basic calc	Fou r trai em\l ransf ier ti ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
- Vector spa [Course re Prerequisite [Evaluatio	place ce\ - 1 equir subje on me is ma	urier trans Map : eme cts: c	transf form\ and ma nts] comple	weeks) form\-1 -applic atrix\Aj)\ -basics inear resp ations of pplication bers and cy]	of Fourie ponse syst Laplace t ns of Four basic calc	Fou r trai em\l ransf ier ti ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
basics of La - Vector spa [Course re Prerequisite [Evaluatio The grading	place ce\ - l equir subje on me is ma	urier trans Map : eme cts: c etho de ba	transf form\ and ma mts] comple ds an ased of	weeks form\ -1 -applic atrix\Aj)\ -basics inear resp ations of pplication bers and cy] egular exa	of Fourie ponse syst Laplace t ns of Four basic calc	Fou r trai em\l ransf ier ti ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
basics of La - Vector spa [Course re Prerequisite [Evaluatio The grading [Textbook	place ce\ - 1 subje on me is ma (s] es are es, e	eme cts: c de ba distri	transf form\ and ma omple ds an ased o: buted	weeks form\ -1 -applic atrix\Aj)\ -basics inear resp ations of pplication bers and cy] egular exa	of Fourie ponse syst Laplace t ns of Four basic calc	Fou r trai em\l ransf ier ti ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
Assics of La - Vector spa [Course re Prerequisite [Evaluatio The grading [Textbook Lecture note [Referenc (Referenc	place ce\ - 1 subje is ma is ma is ma is are es, e nce b	urier trans Map : eme cts: c c etho de b distri tc.]	transf form\ and ma omple ds an ased of buted s)	weeks; form\ -1 -applicatrix\Applicatrix\Applicatrix\Applicatrix ex number d police n the re- at the c)) -basics inear resp ations of pplication bers and bers egular exa cy]	of Fourie ponse syst Laplace t Ins of Four basic calc	Fou r train ranst ier tr ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
basics of La - Vector spa [Course re Prerequisite [Evaluatio The grading [Textbook Lecture note [Reference	place ce\ - 1 subje is ma is ma is ma is are es, e nce b	urier trans Map : eme cts: c c etho de b distri tc.]	transf form\ and ma omple ds an ased of buted s)	weeks; form\ -1 -applicatrix\Applicatrix\Applicatrix\Applicatrix ex number d police n the re- at the c)) -basics inear resp ations of pplication bers and bers egular exa cy]	of Fourie ponse syst Laplace t Ins of Four basic calc	Fou r train ranst ier tr ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	
Assics of La - Vector spa [Course re Prerequisite [Evaluatio The grading [Textbook Lecture note [Referenc (Referenc	place ce\-1 equir subje is ma ss are es, e nce b tside	urier trans Map : eme cts: ccs: cc ethoo de ba distri tc.] oook	transform\ form\ and ma mts] omple ds an ased or buted buted s)	weeks, orm\-1- -applic ex numl d polid d polid a the c (prepa) -basics inear resp ations of pplication bers and cy] gular exa class.	of Fourie ponse syst Laplace t ns of Four basic calci amination.	Fou r train ranst ier tr ulus.	rier seri nsform\ Laplace form to ransform	es exp -conv transf linear	oansion\ -appl olution and co orm and its ap systems\Line	ications of Fourier orrelation function\ - pplications (2 weeks)\ ar Algebra (3-4 weeks	

Course nu	umber	U-EN	G25 32	2065 LJ75	U-EN	G25 32065	LJ55		
Course title (and course title in English)				⊻番偶数) r Enginee	ring F2	Instructor's name, job ti and departr of affiliation	tle, nent		hool of Engineering rrer,SENAMI MASATC
Target yea	r 3rd y	ear students o	or above	Number	of cred	lits 2	Yea	r/semesters	2020/First semester
Days and perio				style	Lectur	e		Language of instruction	Japanese
[Overview	/ and pu	irpose o	f the	course]					
[Course o	bjective	es]							
[Course s	chedule	e and co	ntent	s]					
,2times,				-					
,2times,									
,2times,									
,2times,									
,3times,									
,3times,									
,1time,									
[Course re	equiren	nents]							
None									
[Evaluatio	on meth	ods and	polic	у]					
[Textbook	(s]								
[Referenc	es, etc.]							
(Refere	nce boo	oks)							
[Study ou	tside of	class (p	orepai	ration an	d revie	w)]			
(Other in	formati	on (offic	e hou	rs, etc.)))				
*Please visit	t KULAS	SIS to find	l out a	bout office	e hours.				

Course nu	mber	U-EN0	G25 32	2065 LJ75	U-EN	G25	32065	LJ55			
		学F2(d Mathema		习) or Engineer	ing F2	nam and	ructor's ne, job tit departm ffiliation	tle, nent	Graduate School of Energy Science Professor, KISHIMOTO YASUAKI Graduate School of Energy Science Associate Professor, IMADERA KENJI		
Target yea	r Brd	year students o	or above	Number o	of cred	its	2	Year	/semesters	2020/First semester	
Days and peric	ods Fri.4	Ļ	Class	s style	Lecture	;			Language of instruction	Japanese	
[Overview	and p	urpose o	f the	course]							
[Course o	bjectiv	es]									
[Course s	chedul	e and co	ntent	s]							
, 9 times,											
, 2 times, 2 times											
, 3 times,											
[Course re	quirer	nents]									
None					_	_					
[Evaluatio	n meti	ods and	polic	y]							
[Textbook	s]										
[Reference	es, etc	.]									
Referer	nce bo	oks)									
[Study out	tside o	f class (p	orepa	ration and	d reviev	w)]					
(Other inf	ormat	ion (offic	e hou	ırs, etc.))							
*Please visit	KULA	SIS to find	l out a	bout office	hours.						

										未更新
Course nu	Imbei	r U-EN	G29 3	2070 LJ10	U-EN0	G29	32070	LJ55		
Course title (and course title in English)	工業数学A 3 Appleid Mathematics A3				Instructor's name, job title, and department of affiliation					nool of Informatics AGASAKI KAZUYUKI
arget yea	r 3	rd year students o	or above	Number	of credi	its	2	Year	/semesters	2020/First semester
Days and perio	ods W	ed.1	Class	s style	Lecture	,			Language of instruction	Japanese
- Fourier anal only in math	ysis o emat	ics but also i	Fourie n engi	r#039s wor neering, inc	cluding a	appl	ications	in me		mes very important not chnology. This course
[Course o	bject	tives]								
To understat to concrete p			l theo	ries of Fou	ier and l	Lap	lace ana	ılysis a	nd develop a	n ability to apply them
[Course s	ched	ule and co	ntent	s]						
such as com Properties an applications One-dimens and their fur equations an Multi-dimen given, and th Laplace tran are discussed Summary an and the learn	putati nd apj to dif ional idame e disc siona eir fu sform 1. id leas ing a	on of Fourie plications of fremitial and Fourier trans ental properti ussed. 1 Fourier tran indamental p is,2-3times,F ming achieve chievement	r coef Fourie I diffe sform, ies suc nsform proper Proper	ficients and er series, 3-4 rence equat 3-4times, TI th as the inv h, 2-3times, 7 ties and app ties of Lapl evaluation,	converg times,S ions and he defini version f The defin plications ace trans 1 time,A	genc ever l sig ition form nitic s to sform	ce of Fo ral prop nal prop n of one ula and on of mu partial ms and	urier s erties o cessing dimer applic alti-din differe their a	eries are discu of Fourier ser gare discusse isional Fourie ations to part nensional Fou- ntial equation pplications to	ies and their
[Course re	· ·		D:00	C 1 P						
Calculus, Li	near A	Algebra and	Differ	ential Eqau	tions					
-		thods and								
Evaluation d account whe			mark	s of examin	ation, bi	ut m	arks of	exerci	ses and home	work are taken into
									Continue to	

	工業数学F3(機原) Applied Mathematics for Engineering F3 Instructor's and department of affiliation Graduate School of Er								
Target year	ear Brd year students or above Number of credits 2 Year/semesters 2020/Sect								2020/Second semest
Days and period	ds Fri.2		Clas	s style	Lectur	e		Language of instruction	Japanese
[Overview	and pu	urpose o	f the	course]					
Introduction	to speci	al function	ns and	mathemat	ical met	hods for the	physi	cal sciences.	
[Course ob	ojective	es]							
Understandin problem solv			ns and	mathemati	ical met	hods for the	physio	cal sciences, a	and developing
Course sc	hedulo	e and co	ntent	s]					
Partial differe Short Exam a	and Disc	cussion,1t		sical scienc	ces,2tim	les,			
[Course requirements] Theories of complex function and differential equation									
Theories of c	omplex	function	and di	merential e	quation				
Theories of c	Ŷ				quation				
	n meth	ods and	polic	y])%).		
[Evaluation	n meth rade wil	ods and	polic	y])%).		
[Evaluation The course gr	n meth rade wil	ods and	polic	y])%).		
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[Evaluation The course gr [Textbooks [Reference (Referen	n meth rade wil s] es, etc. ace boo	ods and Il be based	polic	y] omework(3	30%) and	d quizzes(7(ber (Academi	c Press) isbn{}{
[Evaluation The course gr [Textbooks [Reference (Referen Mathematical	n meth rade wil s] es, etc. loce boo l Metho 549}	ods and II be based]] oks) ods for Phy	polic l on h	s, George H	30%) and 3. Arfke	d quizzes(7(en and Hans		ber (Academi	c Press) isbn{}{
[Evaluation The course gn [Textbooks [Reference (Referen Mathematical 97801238465 [Study out:	n meth rade wil s] es, etc. ace boo 1 Metho 549} side of	ods and Il be based]] bks) sds for Phy f class (p	polic l on h /sicist	s, George H	30%) and 3. Arfke	d quizzes(7(en and Hans		ber (Academi	c Press) isbn{}{
[Evaluation The course gr [Textbooks [Reference (Reference Mathematical 97801238465	n meth rade wil s] es, etc. ice boo 1 Metho 549} side of	ods and II be based]] bks) dds for Phy f class (p on (offic	polic l on h	y] omework(3 s, George F ration and irs, etc.))	30%) and 3. Arfke	d quizzes(7(en and Hans		ber (Academi	c Press) isbn{}{

工業数学A 3 (2)
[Textbooks]
S. Nakamura: Fourier analysis, Asakura shoten isbn{}{9784254115741}
S. Nakamura: Fourier analysis, Asakura shoten ison{}{9/84234113/41}
[References, etc.]
(Reference books)
H.Fukawa: Mathematics of control and vibration, KORONA-SHA ibid{}{TW86010572}
[Study outside of class (preparation and review)]
[, (hh/)
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.

Course number U-ENG25 32080 LJ57 U-ENG25 32080 LJ52 U-ENG25 32080 LJ71 Course title (and course title in English) Instructor's name, job title, and department of affiliation Graduate School of Informatics Associate Professor,NISHIHARA OSAMU Graduate School of Engineering Professor,HANAZAKI HIDESHI Engineering Mechanics A Year/semesters 2020/First semester Target year Brd year students or above Number of credits 2 Class style Days and periods Wed.2 Language of instruction Japanese Lecture [Overview and purpose of the course] [Course objectives] [Course schedule and contents] ,4times, ,1time, ,3times, ,2times, ,4times, ,1time, [Course requirements] lone [Evaluation methods and policy] [Textbooks] [References, etc.] (Reference books) [Study outside of class (preparation and review)] (Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

										未更新
Course nu	umbe	er U-EN	G25 3	2080 LJ57	U-EN	G25	5 32080	LJ52	U-ENG25 3	2080 LJ71
Course title (and course title in English)		〔力学 A (エ ineering Mec		A		nar anc	tructor's ne, job tit d departm affiliation			nool of Energy Science wr,KINOSHITA KATSUYU
arget yea	r	3rd year students	or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and peri	ods N	Ion.1	Class	s style	Lecture	e			Language of instruction	Japanese
[Overview	/ and	d purpose o	f the	course]						
[Course o	bjec	tives]								
[Course s	cheo	dule and co	ntent	sl		_				
4 times,										
3 times,										
2 times,										
2 times,										
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2 times,										
[Course re	equi	rements]								
None										
Fvaluatio	n m	ethods and	polic	ev]						
LEvaluatio			point	· y 1						
[Textbook	s]									
-	-									
[Referenc	es, e	etc.]			_		_			
Refere	nce l	books)								
[Study ou	tside	e of class (orepa	ration and	d revie	w)]				
(Other in	form	nation (offic	e hou	ırs, etc.))						
Please visi	t KU	LASIS to fine	l out a	bout office	hours.					

工学倫理(2)

medicines and food productions. Associated with it, problems of their safety and ethics are arising, which should be addressed by our societies. In this class, the recent progress in biology-related techniques, and problems we have and will have in near future are described. (M. Shirakawa: Industrial Chemistry) Patents and ethics (Part 1). (6/6) 11me. This course will teach the students about 1) patent systems which protect inventions and research results and 2) ethical issues in patents. The first class, in preparation for the next subject of patent ethics, introduces Japan's patent system with comparisons to the patent systems in the world's major countries and international framework. (M. Nakagawa: Electrical and Electronics Patents and ethics (Part 2). (6/13) Itime. Students, equipped with the basic knowledge of patent systems by

the previous lecture, will get familiar with actual case studies on ethical and legal issues in patents. (M. Nakagawa: Electrical and Electronics Engineering) Ethics required for advanced science. (6/27) 1time. Engineers and researchers are at the forefront of

preventing harm caused by advanced chemistry. Think about social roles and environmental problems, efforts to avoid hazards of nanomaterials. (K. Miura: Industrial Chemistry)

Ethics in press release. (7/4) 1 time. Press Release is an essential process for introducing the research to our society through various medias. In this lecture, issues related to Press Release in University are addressed and

discussed. (K. Umeno: Informatics and Mathematical Science) Failure accidents and inspection/maintenance (7/11) 1time. On the occasions of failure accidents of vehicles and plants, the appropriateness of inspection/maintenance of their structures is often questioned. Some actual failure accidents are reviewed to discuss the importance of inspection/maintenance together with the relation to engineering ethics.(S. Biwa: Engineering Science) Ethics in nuclear engineering. (7/18) 1time. Discussion on engineering ethics in the TEPCO accident from

Ethics in nuclear engineering: (//18) fittime. Discussion on engineering ethics in the TEPCO accident from view point of "sunami evaluation by the Japanese government, (I. Takagi: Engineering Science) Ethical issues on sound design. (7/25) 1 time. Every working things consuming energy emits acoustic sound. Even a small sound energy affect human as noise and may create annoyance and health problems. Sound problems of various things are introduced in the lecture. Ethical issues, which shall be considered during design and operation environment, will be discussed. (Y. Takano: Architecture)

[Course requirements]

[Evaluation methods and policy] Class participation and reports

[Textbooks]

ecture materials will be distributed.

[References, etc.]

(Reference books)

Comnibus Engineering Ethics 』(Kyoritsu Shuppan Co., Ltd.)ISBN:978-4320071964 "Practical Engineering Ethics - A Short Course, New Edition』(Kagaku-Dojin Publishing Company,INC) ISBN:9784759811551

[Engineering Ethics (Revised Edition).] (CORONA PUBLISHING CO., LTD.) ISBN:978-4-339-07798-

[World of Engineering Ethics (3rd Edition)] (Morikita Publishing Co., Ltd.) ISBN:978-4-627-97303-9 ------Continue to 工学倫理(3)↓↓↓

Course number U-ENG20 42105 LJ77 Course title (and course title in Beglies) Class style Instructor's name, job title, and department of affiliation Graduate School of Engineering Professor,ATOMI HARUYUKI Graduate School of Informatics Professor,ATOM TAKAYUKI Graduate School of Engineering Senior Lecturer,KANEKO KENTAT Target year 4th year students or above Number of credits 2 Year/semesters 2020/First semester Days and periods Thu.3 Class style Lecture aquage dilution Japanese [Overview and purpose of the course] Mumber of credits 2 Year/semesters 2020/First semester Modern ethics based on engineering aspect are becoming essential to present engineers and scientists. Instructors from various faculties give lectures about ethics in their research fields. Image dilution Japanese [Course objectives] The goal of this class is to understand engineering ethics, and to develop the ability to judge by yourself will you encounter ethical issues. Significance to learn engineering ethics. (4/11) 1 time. As an introduction to this course, the meaning of engineering area on daily disastrous accidents and fire event. The significances of engineering ethics to the examples are discussed. (K. Harada: Architecture) Geotechnical Engineering is indispensable discussing the underground public use, slop stability, geo-sequestration of byproduct for the energy generating. Introducing some examples of natural disasters and construc			LLENZ	C20 4210	5 T 177						
Course title (and course) 工学倫理 Instructor's name, job tite, and opartment of affiliation Professor, ATOM HAŘUYUŘ Graduate School of Informatics Professor, KANDA TAKAYUKI Graduate School of Engineering Senior Lecturer, KANEKÖ KENTAF Target year #th year students or above Mumber of credits 2 Year/semesters 2020/First semester Days and periods Thu.3 Class style Lecture inpage/distude Japanese [Overview and purpose of the course] Lecture inpage/distude Japanese [Overview and purpose of the course] Eccurs inpage/distude Japanese [Course objectives] The goal of this class is to understand engineering ethics, and to develop the ability to judge by yourself will you encounter ethical issues. Significance to learn engineering ethics. (4/11) 1time. As an introduction to this course, the meaning of engineering area on daily disastrous accidents and fire event. The significances of engineering is indispensable discussing the underground public use, slope stability, geo-sequestration of byproduct the energy generating. Introducing some examples of natural disasters and construction accidents, geotechnical engineering and engineering ethics. (4/18) 1 time. Geotechnical Engineering is indispensable discussing the underground public use, slope stability, geo-sequestration of byproduct the energy generating. Introducing some examples of natural disasters and construction accidents, geotechnical engineering ethics as an applied ethics. (4/25) 1 time. This lecture, I will show the basisi Idea of	Course n	number	U-ENC	G20 4210	5 LJ77		_			r	
Days and periods Thu.3 Class style Lecture Laquage distinction [Overview and purpose of the course]	(and course title in	工学倫		cs			nam and	ne, job ti I departn	tle, nent	Professor,A' Graduate Sc Professor,K. Graduate Sc	FOMI HARUYUKI hool of Informatics ANDA TAKAYUKI hool of Engineering
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Art-view concept for engineering. (5/9) Itime. Concept of "quality of life" is required for human related engineering. Some practical examples in medical-care and welfare fields will be introduced, and problem of the QOL-evaluation will be discussed from both function-optimizing view point and art view point. (N. Tomita: Engineering Science) Ethics of biotechnology and stem cell research. (5/16) Itime. With the rapid development of genome editir technology and stem cell engineering, editing of the human genome that goes beyond generations has beec possible, at least technically. In this lecture, I will introduce these latest technologies and think about ethics problems accompanying technological development. (G. Eiraku: Industrial Chemistry) Research and engineering ethics. (5/23) Itime. It is said that He that will do no til, must do nothing that belongs thereto. The sense of ethics necessary to whom conducts research and engineering work in society discussed in terms of the importance of equitability and fair evaluation to anyone involved in each area of research or engineering. (5/30) Itime. Recent dramatic progress in biology-related techniques, su as reproductive medicine, genome editing, and clone-animal techniques, is causing revolutions in the fields	engineering examples at Geotechnic: discussing t generating, engineering Engineering Engineering the age of it Ethical thec (utilitariania) articular et Art-view cc engineering the QOL-ev Tomita: Eng Ethics of bi technology possible, at problems ac Research ar belongs the discussed it research or Ethics In bi	g area on re discuss: al engine the under Introduc; g and engine g ethics a g Ethics b nformatic oriers for c ism, deon thical pro- toncept for g. Some p valuation up and stem least tecl ccompany and stem least tecl ccompany nd engine reto. The n terms of engineering in terms of in terms of i	daily disased. (K. H evering and evering and ground puring some e- tineering end us an applie by compar- on technoleuris in er engineerin er engineerin vactical ex- will be dis g Science) oggy and st a cell engin hnically. In yving techno- eveng ethic e sense of ef	strous acc larada: Are engineerin bblic use, s examples thics will ed ethics. ring with t logy. (M. 1 og ethics. (rtue ethics engineerin ring. (5/9) xamples in scussed fr tem cell re neering, e in this lect nological c ics. (5/23)	idents a chitectung ethic slope st of nature be disc((4/25) 1 the othe Mizutar (5/2) 1 tt (5/2) 1	and fire of tre) cs. (4/18 ability, § ability, § ability, § ability, § ar disass ussed. (1 1 time. I tr fields of ni: Gradu time. Th ssional e cs. (T. Iso Concept cal-care a h functio . (5/16) 1 of the huu vill introo) 1 t geo ters K. F n thi of A uate eda: of ' and on-o ltim man duce J. Ei	t. The s ime. Ge sequest and cor Cishida: is lectur pplied I School cture fo s etc.) v Gradua "quality welfare optimizin e. With a genom	signific cotechn ration nstruct Globa e, I wi Ethics. of Let vicus or vhich v the Sch of life fields ng view the ra a test to additional states of the sch of life the sch of life life life life life life life life	ances of eng nical Engineed of byproduct ion accidents al Engineerin ill show the b al Engineerin ill show the b tetrs) 1 various idea will be useful oool of Letter s'' is required will be introo w point and a pid developm goes beyond echnologies z al Chemistry do no ill, mu	ineering ethics to those ring is indispensable in for the energy , geotechnical g) asic Idea of s unique character in s in ethics for thinking about for human related luced, and problem of rt view point. (N. enert of genome editing generations has become and think about ethical)
as reproductive medicine, genome editing, and cone-annual techniques, is causing revolutions in the relation Continue to 工学倫理(2)↓↓↓			l engineeri	fikada: Gl ing. (5/30)	loĥal Er) 1time.	vility and ngineerir . Recent	l fair 1g) drar	r evalua matic pr	esearcl tion to ogress	anyone invo in biology-r	lved in each area of elated techniques, such

工学倫理(3)

[Study outside of class (preparation and review)]

The assignment of the report will be given for each lesson

(Other information (office hours, etc.)) The class order is subject to change

*Please visit KULASIS to find out about office hours

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

Course nu	umber	U-EN	G25 3	5148 LJ57	U-EN	G25	35148	LJ75			
Course title (and course title in English)	職業指導 Vocatio	導 nal Guida	ince			Instructor's name, job title, and department of affiliation			Part-time Lecturer, INOUE MA		
Target yea	r Brd y	ear students of	or above	Number o	of cred	its	2	Year	/semesters	2020/Intensive, First semester	
Days and perio	ods Inter	nsive	Class	s style	Lecture	•			Language of instruction	Japanese	
の移行にか のための力 相すること で深めるこ [Course o ・ 高校にお	かわる 量ける 通じ し bjective ける 職	教育・訓 であり、 業教育の て、青年 約とする。 第 】 業教育の	練さ題をき。	 	化しては をと す 解す	い 具 に 体 的 る 。	ら。中等 的な職 日本の た選択	教育 ((で き	の目的の一つ 育が行われて 高校における る教育とは如	5一方で、職業生活へ Dは、生徒の職業選択 こそた。本請義は、現 5職業教育の実態を把 1何なるものか、議論 存徴を理解することが	
第2回 日7 第第3回 学林 第第4回 学林 第第6回 世数 第第7回 專 第第10回 專 第第10回 專 第第12回 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日	業本交交界術を門門門本等本本のに体校業業業校交交界がある時代である。	かに世世教教制おおおおやいかに世世教教制おおおおいた。 からしていたので、 からしていたいで、 かられたいで、 のののでは、 ではないののでは、 では、 でいたいで、 のののでは、 でののので、 でいたいで、 ののので、 でいたいで、 ののので、 でいたいで、 のののので、 でいたい	のなりの次見主義業職育職リ育概進接接米す格業業業・業アに念路続続にると教教孝訓業孝良	· を種類 (1) 日本 (2) 日本 (3) 日本 (2) 日本 (2) 日本 (3) 日本 (3) 日本 (4) 日本 (2) 日本 (5)	内距職業日本進職職と校 進職職と校 進職職会校 進職職会校 1) (3) 類職と校 進職職と大の	ス格育のけ指資体核制	テ制制中る導格体をしていた。	学時業教り定い続概	☆ の位置 り意義 は進路状況 専門教科の内 ーンシップ)		
								,	Continue to	_〒 職業指導(2)↓↓↓↓	

Course title (and course I title in In English)	学序論	ENG20 22501 SJ77 o Engineering	Inst nam and	ructor's e, job title, department ifiliation	Senior Lectu Graduate Scl Senior Lecture Graduate Scl	Graduate School of Engineering Senior Lecturer,OHTA HIROTC Graduate School of Engineering Senior Lecturer,KANEKO KENTAI Graduate School of Engineering Senior Lecturer,YOROZU KAZU		
Target year	lst year stud	ents or above Number	of credits	1 Yea	ar/semesters	2020/Intensive, Fir		
Days and periods	s Intensive	Class style	Lecture		Language of instruction	Japanese		
Engineering is development to First, we offer expected to ha Then, we offer	to inquire a esults of tec special lecture. r a series of ins of our soc o fulfill.	se of the course] fter truth, to develo hnology to the socie ures regarding the b intensive lectures al iety, the value of ter	ety. asic knowledg oout how engi	ge that stude	nts in faculty o suggest solutio	of engineering a		
social commur	nity. They fi technology urity.	rs such as attitudes a nd value in studying can suggest solution	g engineering	and become	to consider wl	hat they do in fu		
role of enginee Intensive lectu and technology reconfirming is be opportunition content and op Schedule of the	ering in soci- tres,6times, 2 y. Lectures a mportance tr es to conside pinions of oth e lectures ar	A series of lectures are for understandin o study engineering er own future path. I her students. re announced later.	offered by spe g the role that and to work a	ecial lectures technology as a research	rs playing on g is playing in n er and enginee	lobal stages of nodern society, er in society, an		
[Course req None	uirements							
	methode	and policy]						

職業指導(2) [Course requirements] None [Evaluation methods and policy] レポート試験の成績(60%) 平常点評価(40%) 平常点評価には、授業への参加状況、授業内での積極的発言を含む。 [Textbooks] Instructed during class [References, etc.] (Reference books) 堀内達夫・佐々木英一・伊藤一雄・佐藤史人編『日本と世界の職業教育』(法律文化社) ISBN: 978-4589-03511-0 佐藤史人・伊藤一雄・佐々木英一・堀内達夫編『新時代のキャリア教育と職業指導-免許法改定に対応して』(法律文化社) ISBN:978-4-589-03953-8 [Study outside of class (preparation and review)] 復習:授業で配布した資料等をよく読んで、講義内容の理解を深めておくこと。 (Other information (office hours, etc.)) [] 講師時期: 令和2年8月26日(火) ~ 8月31日(月)の土日を除く4日間の集中講義 各日とも1時限~V時限まで(幼月28日(金)のみ11~IV時限) *Please visit KULASIS to find out about office hours.

工学序論(2)

[Textbooks]

Specify if necessary.

[References, etc.] (Reference books)

Specify if necessary.

[Study outside of class (preparation and review)]

Specify if necessary.

(Other information (office hours, etc.))

Information about lecturers and contents of lectures are announced on electric bulletin boards. Please confirm to your department office that the credit of this course is admitted to graduation requirements.

• •

*Please visit KULASIS to find out about office hours.

							未更新
Course number	U-ENG23 2	3181 LJ73					
	セミナー I (企 Il Leadership Sen) nai and	tructor's ne, job ti departn affiliation		Senior Lectur Graduate Scl	nool of Engineering er,YOROZU KAZUAKI nool of Engineering r,KOMIYAMA YOSUKE
Target year 2nd	nd year students or above	Number	of credits	1	Year	/semesters	2020/Intensive, year-round
Days and periods Int	tensive Clas	s style	Seminar			Language of instruction	Japanese
[Overview and p	purpose of the	course]					
training on their lal	boratory, students aception ability by on and explanatio	s investigate group wor n capability	e the metho ks. After the	dology o e investi	f team gation,	organization students are	expected to improve
[Course objecti	ives]						
The goal of this con proposal and expan work.							ity for processes of mpanies by group
[Course schedu	le and conten	ts]					
Week 1, Guidance Week 2-13, Hands- Week 14, Pre-press Week 15, Final pre [Course require	s-on training sentation esentation						
How to register wil class.	ll be announced l	ater. Studer	its who war	it to join	this co	ourse is reque	sted to attend the first
[Evaluation met	thods and poli	cy]					
Students are prohib	bited to skip hand	s-on trainin	g. Evaluati	on will b	e base	d on presenta	tion.
[Textbooks]							
Not used							
					_c	continue to GL +	ミナー (企業調査研究)(2)↓↓↓

		ターンシップ 1 ng International Inte	ernship 1 and	tructor's ne, job title, I department iffiliation		
		or above Number	of credits	1 Y	ear/semesters	2020/Intensive, year-round
Days and periods I		Class style	Seminar		Language of instruction	Japanese and English
	ternational sk	ills with the train				ernship programs pplicant belongs to.
[Course object						
		al skills with the t major expectation			uage through the	to internship program
[Course sched	,	3 X				
		esentation by the	student is re	quired foll	owed by discussi	on among participants
[Course requi						
Described in the language skills fo			ternship pro	gram. The	registrant is requ	ested to have enough
[Evaluation m						
responsible to ide credit is not inclu the Global Leade	entify if the c ided in the un rship Educat	redit earned by th dergraduate scho on Center as a op	is subject to ol in which ptional credi	be include the particip t. The num	ed as mandatory of pant belongs to, the ber of credits, eit	Each D epartment ones or not. If the he credit is granted by her 1 or 2, will be ant has participated in
determined depei						
[Textbooks]						

[References, etc.]
(Reference books)
(Related URLs)
http://www.glc.t.kyoto-u.ac.jp/ugrad
[Study outside of class (preparation and review)]
Investigating companies in advance. Analyzing the result from hands-on training. Preparing presentation.
(Other information (office hours, etc.))
How to register will be announced later. Students who want to join this course is requested to attend the first
class. Students are prohibited to skip hands-on training. Evaluation will be based on presentation.
*Please visit KULASIS to find out about office hours.
[Courses delivered by instructors with practical work experience]
(1) Category
An omnibus course delivered by invited lecturers and guest speakers from different companies, etc.
(2) Details of instructors' practical work experience related to the course
(3) Details of practical classes delivered based on instructors' practical work experience
(5) Details of plactical classes derivered based on historetors – plactical work experience

GLセミナーI (企業調査研究)(2)

L

工学部国際インターンシップ1(2)

[References, etc.]

(Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

It is required for students to check if the internship program to participate in could be evaluated as part of mandatory credits or not and could earn how many credits before the participation to the undergraduate school or educational program the student in enrolled. If the credit could not be treated as mandatory ones, get in touch with the Global Leadership Engineering Education Center.

*Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course that includes off-campus training classes.

(2) Details of instructors' practical work experience related to the course

(2) Details of instructors produced work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

Course nu	umber	U-ENC	323 33	3182 LJ73		_					
Course title (and course title in English)		ミナー I Leadership		₹題解決演 nar II	習)	nar anc	tructor's ne, job ti d departn affiliation	nent	Graduate School of Engineering Senior Lecturer,KANEKO KENTARO Graduate School of Engineering Senior Lecturer,OHTA HIROTO		
Target yea	r 2nd	year students o	r above	Number	of cred	its	1	Yea	r/semesters	2020/Intensive, Second semester	
Days and perio	ods Inte	nsive	Class	style	Semina	ar			Language of instruction	Japanese	
[Overview	and p	urpose o	f the	course]							
by themselv trained throu	es aimin 1gh grou rough oi	ig at creatin p works in al presenta	ng nev 1 reside ations	v social val ential train	lues. In ing and	con skil	crete, at ls of pre	vilities esentat	of planning a tion and comr	t or set up challenges and problem-solving are nunication are the process from a	
[Course o	bjectiv	es]									
Ability of pl social values					ip challe	enge	es to pro	posal	of solutions a	iming at creating new	
[Course s	chedul	e and co	ntent	s]							
organized. Lectures,2tin Group work are done. Residential t problems is	mes,Lec s,3times raining, planned review	tures by ex Setting up 7times,Thu , a draft rep meeting,1t	p chall rough port is ime,A	are given. enges, extr intensive g made, and preliminar	action o roup wo a few p y reviev	of pr orks oreso w m	oblems, based o entation eeting is	colled on disc s are n s held	cting informations in the second	rking groups are tion, and group works posal for solving ns are made.	
[Course re	equiren	nents]									
None											
[Evaluatio	n meth	ods and	polic	у]							
	bilities	in group d	iscussi	ion to extra	ict or se	t up	challen	ges an	id to propose	ve evaluation solutions for achieving	
								(Continue to G L t	テーⅠ □ (課題解決演習) (2)↓↓↓	

GLセミナー | | (課題解決演習)(2)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) Course open period: October to January How to register the course will be instructed.

*Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

Will be indicated as necessary.

[Textbooks]

(1) Category

[References, etc.]

(Reference books) Will be indicated as necessary.

Will be indicated as necessary.

*It depends on divisions which students belong to whether the earned credits are admitted as credits required for graduation. Please refer to the syllabus of your division.

		ンターンシップ 2 eering International Int		title, rtment Approved	
Target year	3rd year stude	ents or above Number	of credits 2	Year/semesters	2020/Intensive, year-ro
Days and periods	Intensive	Class style	Seminar	Language of instructi	Japanese and Engl
-		e of the course]			
				language through th ring or its subsidiary	
[Course obje	ctives]				
				igh the participation	
programs is exp	bected. Deta	iled objectives of th	e participation sho	ould be identified by	each program.
[Course sch	edule and	contents]			
	ship,1time,	The contents to be a	equired should be	described in the bro	chure of each intern
program. Final Presentati	on.1time A	presentation by the	student is require	d followed by discus	sion among particip
	,	F			
		-			
[Course requ		-		771	. 1. 1
language skills			nternsnip program	. The registrant is re	quested to have enou
	r	- F			
[Evaluation r					P 1 D
Marit rating is o	lone based	on the presentation		ch internship prograr	
Marit rating is o responsible to i credit is not inc	lone based dentify if th luded in the	on the presentation of e credit earned by the undergraduate school	his subject to be in pol in which the pa	cluded as mandatory articipant belongs to,	ones or not. If the the credit is granted
Marit rating is or responsible to it credit is not inc the Global Lead	lone based dentify if th luded in the lership Edu	on the presentation of e credit earned by the undergraduate schoo cation Center as a o	his subject to be in ool in which the pa ptional credit. The	actuded as mandatory articipant belongs to, e number of credits, o	ones or not. If the the credit is granted either 1 or 2, will be
Marit rating is or responsible to it credit is not inc the Global Lead	lone based dentify if th luded in the lership Edu	on the presentation of e credit earned by the undergraduate schoo cation Center as a o	his subject to be in ool in which the pa ptional credit. The	cluded as mandatory articipant belongs to,	ones or not. If the the credit is granted either 1 or 2, will be
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Marit rating is or responsible to incredit is not inc the Global Lead determined dep	lone based dentify if th luded in the lership Edu	on the presentation of e credit earned by the undergraduate schoo cation Center as a o	his subject to be in ool in which the pa ptional credit. The	actuded as mandatory articipant belongs to, e number of credits, o	ones or not. If the the credit is granted either 1 or 2, will be
Marit rating is or responsible to incredit is not inc the Global Lead determined dep	lone based dentify if th luded in the lership Edu	on the presentation of e credit earned by the undergraduate schoo cation Center as a o	his subject to be in ool in which the pa ptional credit. The	articipant belongs to, e number of credits, o	ones or not. If the the credit is granted either 1 or 2, will be
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Marit rating is or responsible to incredit is not inc the Global Lead determined dep	lone based dentify if th luded in the lership Edu	on the presentation of e credit earned by the undergraduate schoo cation Center as a o	his subject to be in ool in which the pa ptional credit. The	articipant belongs to, e number of credits, o	ones or not. If the the credit is granted either 1 or 2, will be
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[References, etc.] (Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

It is required for students to check if the internship program to participate in could be evaluated as part of mandatory credits or not and could earn how many credits before the participation to the undergraduate school or educational program the student in enrolled. If the credit could not be treated as mandatory ones, get in touch with the Global Leadership Engineering Education Center.

Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course that includes off-campus training classes.

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

	ber	U-ENG25	25003 LJ75	U-EN	G25	25003	LJ54	U-ENG25 2	5003 LJ71	
	算機数 athematio	学(原) cs for Comj	outation		nan and	tructor's ne, job ti I departn Iffiliation	nent	Graduate School of Engineering Associate Professor, TAISHI KOBAYASH		
Target year	2nd year	students or abov	Number	of cred	its	2	Year	r/semesters	2020/First semester	
Days and periods	Fri.2	Clas	s style	Lecture	•			Language of instruction	Japanese	
[Overview a	nd purp	ose of the	e course]							
This course dea processing met programming 1	thods suc	h as planni:							ire a series of fresults by learning the	
[Course obje	ectives]									
	acquire a	-	ocessing me	thods su	ich a	ıs plann	ing pr	ocessing meth	nod, program creation,	
[Course sch	edule a	ind conter	its]							
calculation. (3) Basic progr Acquisition of 1 subprogram an (4) Applicative Roots of the eq linear equation method) Acqui (5) Constructiv Acquire about (6) Confirmatic Post explanatio	the princ ramming, essential d functio e program uation (cf (Gauss e irre the ba re program several d on of lear on and re	ciple of num , 3 classes l items for p on three time numing, 4 cla dichotomy, 1 elimination issic idea of c mming, 3 cl levelopment view of exa	rogramming rogramming es. \ task: sun usses Newton's me method), eig calculation n lasses t problems au ment, 1 class	ation, re such as n-differ thod), n envalue aethod a nd solut	inp enco (Ja nd c ions	sentatio ut / outp e produc erical in cobi me lo actua s, and we	out, bra et quot tegrati thod), 1 prog ork on	anch, repeat, stient, sum of stient, sum of stion (Simpson differential eramming.	s accompanying variable, array, equence, prime number method), simultaneous quation (Runge-Kutta	
[Course requ		-								
Recommend to) take bas	sic informat	ion processi	ng and b	asic	inform	ation J	processing ex-	ercises.	
PT-select Const	method		iov1							
[Grading metho		Is and poli	icy]							

Course title (and course title in Mathe English)	幾数学(エネ) matics for Computa	tion	Instructor's name, job f and depart of affiliatio	itle, ment	Graduate School of Energy Scien Associate Professor,HACHIYA K Graduate School of Energy Scien Associate Professor,Jun HAYAS		
Target year 2m	d year students or above N	umber of cr	redits 2	Year	/semesters	2020/First semester	
Days and periods Tue	e.1 Class s	tyle Lec	ture		Language of instruction	Japanese	
	ourpose of the co	-					
To acquire the abili computational prog	ity of basic computa graming.	tional progra	ming and lear	n the ba	isic mathemat	tics underlying the	
[Course objecti	ves]						
	ity of basic computa	tional progra	ming and lear	n the ba	sic mathemat	tics underlying the	
computational prog	graming.						
[Course schedu	Ile and contents]						
		· •	wiethou), sin	- contraction (Gaussian eliminatio	
Exercise of advanc Summary and conf		e on the proce			are of the com	`	
Summary and conf	ed programming. ïrmation,1time,	e on the proce			are of the com	`	
Summary and conf [Course require None	ed programming. ïrmation,1time,				are of the com	`	
Summary and conf [Course require None [Evaluation met	ed programming. ärmation,1time,	-	dure to built a	structu	are of the com	`	
Summary and conf [Course require None [Evaluation met	ed programming. "irmation, I time, "ments] hods and policy]	-	dure to built a	structu	re of the com	`	

計算機数学(原) (2)	
异惤蚊子 \际/ (4)	
9 or below: fail	
9 of below: fall	
[Textbooks]	
Not used	
[References, etc.]	
(Reference books) 司川隼人『演習と応用 FORTRAN77』(サイエンス社)ISBN:4781905110 氟之内他『ANSI C による数値計算法入門 (第2版)』(森北出版)ISBN:4627093829	
[Study outside of class (preparation and review)]	
As needed, practice exercises will be conducted in class, so please review after class.	
(Other information (office hours, etc.))	
ecture is given in Japanese.	

計算機数学(エネ)**(2)**

[References, etc.] (Reference books) Introduced during class

[Study outside of class (preparation and review)] Learn the basics of FORTRAN and C. Try to understand the exercises in each lecture.

(Other information (office hours, etc.))

Check KULASIS/Office Hours

*Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience] (1) Category

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

						未更新
Course number	U-ENG25 250	003 LJ75 U-EN	IG25 25003	3 LJ54	U-ENG25 2	5003 LJ71
Course title (and course 計算機 title in Mathem English)	数学(材) natics for Computa	ation	Instructor' name, job and depart of affiliatio	title, ment		nool of Engineering KUDA HIROSHI
Target year 2nd y	year students or above N	lumber of crea	dits 2	Year	/semesters	2020/First semester
Days and periods Tue.1	1 Class s	style Lectur	re		Language of instruction	Japanese
[Overview and pu	urpose of the co	ourse]				
[Course objective	es]					
[Course schedule 2times.	e and contents]					
2times, 2times,						
3times,						
4times, 3times,						
1time,						
[Course requiren	nentel					
None	iontoj					
[Evaluation meth	ods and policy]				
[Textbooks]						
[References, etc.]					
(Reference boo	oks)					
[Study outside of	f class (prepara	tion and revie	ew)]			
(Other information	on (office hour:	s, etc.))				

[Evaluation me	thods and policy]	
A final examination	on will be held. In-class reports will be factored in for maximum 40%.	
[Textbooks]		_
Not used		
[References, e	c.]	
(Reference b		_
		_
	of class (preparation and review)] e the basics of programming (grammar, flowchart, compile, edit, etc).	
	ation (office hours, etc.)	
The order of class	es listed above and their timing may differ depending on the year.	

Course nu	umber	U-EN	G25 25003 LJ75	U-ENO	325 2	25003	LJ54	U-ENG25 2	5003 LJ71	
Course title (and course title in English)			:7・9・11組) Computation		name and d	uctor's e, job tit lepartm iliation			nool of Engineering essor,TATSUMI KAZUYA	
Target yea	r 2nd	year students (or above Number	of credi	its 2	2	Year	/semesters	2020/First semester	
Days and peri	ods Thu	.2	Class style	Lecture	:			Language of instruction	Japanese	
the mathema the program program to s characteristi	[Overview and purpose of the course] This course focuses on the mathematical and numerical methods for numerical computation. We will learn he mathematical methods to solve mathematical and physical problems by using computers. We will study he programing language and practice programming to learn and experience the process of how to use a rogram to solve problems, write programs, and analyze the results, and also understand the accuracy and haracteristics of the numerical methods. [Course objectives] Inderstand and learn the basic knowledge, method and skill of mathematical solution for computation,									
	numeri	cal metho	d, programming,						on companyon,	
Mathematics Learn the pr computation Orientation	s for nui inciple	merical sir of computa rating the	nulation (3) ation and the mat terminal (1)						rror appearing in the	
program. Basic progra	umming sic state	(2)	satellite seminar l structure of pro						npile and run a ers, array, sub routine,	
(Bisection n (Gaussian el	n the fu nethod, i iminatio	ndamental Newton's 1 on), differe	method and pro method), numeric	cal integr	ation	(Simp	son'	s method), sin	s: solution of equation nultaneous equation st-square method).	
Advanced p Learn the m Confirmatio	athemat	ical metho		ing for a	dvano	ced pro	oblems	including ph	ysical phenomena.	
[Course re Students are Processing I	recomr		have completed	Informati	ion P	rocess	0		cises in Information 数字 (機:7・9・11組) (2)↓↓↓	

Course nu	umbe	r U-ENG	G25 2	5003 LJ75	U-EN	G25	25003	LJ54	U-ENG25 2:	5003 LJ71
Course title (and course title in English)		機数学(機 nematics for (nan and	tructor's ne, job tit I departm ffiliation	nent	Professor,MA Graduate Sch Associate Prof Graduate Sch	ool of Engineering ATSUBARA ATSUSHI ool of Engineering essor,KOUNO DAISUKE ool of Informatics or,SAKURAMA KAZUNORI
Target yea	r	2nd year students of	or above	Number	of cred	its	2	Yea	r/semesters	2020/First semester
Days and peri	ods M	lon.2	Clas	s style	Lecture	э			Language of instruction	Japanese
[Overview	/ and	purpose o	f the	course]						
[Course o	bjec	tives]								
[Course s	ched	lule and co	ntent	s]						
,2times,										
,2times, ,3times,										
.4times.										
,3times,										
,1time,										
[Course re	equir	ements]				_				
None										
[Evaluatio	on me	ethods and	polic	cy]						
				-						
[Textbook	s]									
[Referenc	es, e	tc.]								
(Refere	nce k	ooks)								
								(Continue to 計算機数	妓(機:8・10・12組)(2)↓↓↓

未更新

計算機数学(機:8・10・12組)(2)
[Study outside of class (preparation and review)]
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.
[Courses delivered by instructors with practical work experience]
 Category A course with practical content delivered by instructors with practical work experience
(2) Details of instructors' practical work experience related to the course
(3) Details of practical classes delivered based on instructors' practical work experience

Course n	umber	U-EN0	G25 25	5004 LJ77	U-EN	G25	25004	LJ71	U-ENG25 2	5004 LJ75
Course title (and course title in English)		学1(機 iics of Ma				nam and	ructor's ne, job til departm ffiliation	nent		hool of Engineering RAKATA HIROYUKI
Target yea	r 2nd	year students o	or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and peri				style	Lecture	e			Language of instruction	Japanese
[Overview	and p	urpose o	f the	course]						
10	1									
[Course o	Djectiv	esj								
[Course s	chedul	e and co	ntent	s]						
0										
[Course r	equiren	nents]								
None										
[Evaluatio	on meth	ods and	polic	;y]						
[Textbook	(s]									
[Referenc										
(Refere	nce boo	oks)								
[Study ou	tside o	f class (p	orepa	ration and	d revie	w)]				
(Other in	formati	on (offic	e hou	irs, etc.))						
*Please visi	t KULA	SIS to find	l out a	bout office	hours.					

											未更新
Course nu	umbe	er	U-EN	G25 2	5004 LJ77	U-EN	G25	25004	LJ71	U-ENG25 2	5004 LJ75
Course title (and course title in English)			学1(機 ics of Ma		学番奇数) 1		nam and	ructor's ne, job tit departm ffiliation			hool of Engineering DUJIYOU MASAKI
Target yea	r	2nd y	ear students o	or above	Number o	of cred	its	2	Year	/semesters	2020/First semester
Days and perio	ods V	Ved.	.1	Clas	s style	Lecture	e			Language of instruction	Japanese
[Overview	and	d pu	irpose o	f the	course]						
[Course o	bjec	tive	es]								
[Course s	che	dule	e and co	nten	s]						
,1time, ,1time, ,2times, ,1time, ,4times, ,1time, ,1time,											
[Course re	equi	rem	nents]								
None											
[Evaluatio	n m	eth	ods and	poli	>y]						
[Textbook	s]										
[Referenc			-								
(Referer	nce	boo	oks)								
[Study ou	tsid	e of	i class (p	orepa	ration and	d revie	w)]				
(Other in	form	natio	on (offic	e ho	urs, etc.)						
*Please visit	KU	LAS	SIS to find	l out a	bout office	hours.					

											木史和
Course nu	umbe	er	U-EN	325 2:	5004 LJ77	U-EN	G25	25004	LJ71	U-ENG25 2	5004 LJ75
Course title (and course title in English)			岸1 (材 cs of Ma		原:学番奇 1	数)	nan and	tructor's ne, job ti I departn Iffiliation	nent		nool of Energy Science ATANI SHIYOUJI
Target yea	r	2nd ye	ear students o	r above	Number	of cred	lits	2	Yea	r/semesters	2020/First semester
Days and perio	ods V	Ved.	1	Class	s style	Lectur	e			Language of instruction	Japanese
[Overview	and	d pu	rpose o	f the	course]						
[Course o	bjec	tive	s]								
[Course s	che	dule	and co	ntent	s]						
Concepts of Subjects on Strain Energ Bending of I Complex be ,1time,	Simj y,2ti Bean	ple S imes ns,5t	tress Stat								
[Course re	equi	irem	ents]								
Fundamenta	ls of	Mat	hematics	and P	hysics						
[Evaluatio	n m	etho	ods and	polic	;y]						
[Textbook	s]										
ISBN:4-563 (Zairyo Rik				ibata,	Ohtani, Ko	mai, Ine	oue,	Baifuka	ın) isb	n{}{4563034	657}
[Referenc	es, e	etc.]									
(Refere	nce	boo	ks)								
[Study ou	tsid	e of	class (p	repa	ration and	d revie	w)]				
(Other in	forn	natio	on (offic	e hou	ırs, etc.))	_		_			
*Please visit	KU	LAS	IS to find	l out a	bout office	hours.					

							未更新
Course number	U-ENG2	5 25004 LJ77	U-ENO	325 25004	LJ71	U-ENG25 2	5004 LJ75
Course title (and course title in English)	学1(材工: ics of Materi		数)	Instructor's name, job ti and departr of affiliatior	itle, nent		ool of Energy Science fessor,ABE MASATAKA
Target year 2nd y	ear students or ab	ove Number o	of credi	ts 2	Year	r/semesters	2020/First semester
Days and periods Wed.	.1 Cla	ass style	Lecture			Language of instruction	Japanese
[Overview and pu	urpose of th	he course]					
[Course objective	es]						
[Course schedule	e and conte	ents]					
2times,							
3times,							
2times, 5times.							
2times,							
,1time,							
<u></u>							
[Course requirem	ientsj						
None							
[Evaluation meth	ods and po	olicy]					
PT south a set of							
[lextbooks]							
[Textbooks]							
	1						
[References, etc.	-						
[Textbooks] [References, etc.] (Reference boo	-						
[References, etc. (Reference boo	oks)						
[References, etc.	oks)	paration and	d reviev	v)]			
[References, etc. (Reference boo	oks)	paration and	d reviev	v)]			
[References, etc. (Reference boo	f class (pre		1 reviev	v)]			

材料力学2 (機:7,8,9,10組)(2)

possibly with considerations of short reports (about three times). (In the cases where the evaluation for short reports are considered, the ratio of the evaluations for regular examination and short reports is about 9:1.) [Evaluation standard] Evaluation is based on class registration guideline.

[Textbooks]

T. Shibata et al. 『Fundamentals of Strength of Materials (Zairyo-Rikigaku no Kiso) 』(Baifu-kan)ISBN: 4563034657

[References, etc.]

(Reference books) To be referred to during the course

[Study outside of class (preparation and review)]

It is highly recommended to make the preparation and review with the specified textbook. Homework (short eports: about three times) will be assigned

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

 Course number
 U-ENG25 25005 LJ71
 U-ENG25 25005 LJ75
 U-ENG25 25005 LJ77
 Course tit name, job title, and department of affiliation 材料力学2 (機:7,8,9,10組) Graduate School of Engineering Associate Professor, NISHIKAWA MASAAKI (and course title in Mechanics of Materials 2 English) 2nd year students or above Number of credits 2 Year/semesters Target year 2020/Second semester Days and periods Fri.2 Class style Lecture anguage of instruc Japanese [Overview and purpose of the course] The simplified one-dimensional treatments lectured in Mechanics of Materials 1 are extended to include more complex two- or three-dimensional problems. Analytical methods for the deformation and the stresses in various structural members are lectured including the combined stress states [Course objectives] The emphasis is to understand the fundamental concepts and methods for the stress/strain analysis of various tructures or struictural members, by advancing the basic principles given in Mechanics of Materials 1. [Course schedule and contents] Beam bending
 (Beam bending, Castigliano's theorem)
 Advanced problems of beams (Statically indeterminate beams, Continuous beams, Curved beams) (Combined stress and stress and strain circles, Equilibrium equations, Displacement-strain relations, Stress-strain relations, Plane stress or strain states, Relation between elastic constants) 10-11. Torsion (Torsion of circular bars, Coil springs, Combination of bending and torsion) 12. Buckling (Buckling of column, Instability, Effect of support conditions, Buckling design) 13-14. Axially symmetric problems and bending of plates (Circular cylinders, Spherical shells, Rotating circular plates, Cylindrical bending, Bending rigidity) 15. Feedback Academic achievement assessment: Regular examination * The order and the hours (weights) for each item are possibly subject to change [Course requirements] Mechanics of Materials 1, and other subjects such as calculus, linear algebra, mechanics of particles and rigid odies [Evaluation methods and policy] [Evaluation method] Evaluation is based on the mid-term and the final examinations, _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Continue to 材料力学 2 (機: 7,8,9,10組) (2)↓↓↓

Course nu	mber	U-ENC	325 2:	5005 LJ71	U-EN	G25 2:	5005 1	LJ75	U-ENG25 2	5005 LJ77		
Course title (and course title in English)		学2(機 nics of Mat				and de	ctor's , job tit epartm liation		Graduate Sch Professor,BI			
Target yea	· 2nd	year students o	r above	Number	of cred	its 2		Year	/semesters	2020/Secor	nd semest	er
Days and perio	ds Fri.2		Class	s style	Lecture	e			Language of instruction	Japanese		
[Overview	and p	urpose of	f the	course]								
statically ind	etermin sures. N	ate beams, Aore gener	torsi al trea	on of bars, atments of	buckling	g of co	olumns	s, cylii	roblems such ndrical vessel eir relations ir	s subjected t	o internal	/
[Course of	ojectiv	es]										
	ing, and	d the treatn	nents						ral members and strains, b			ıs
[Course se	chedul	e and co	ntent	s]								
situations. Week 1: Ber Week 2: Con Week 3: Fun Week 4: Fun Week 5: Fun Week 6: Fun Week 6: Fun elastic const: Week 10: To Week 11: To Week 12: Bu	ding of nplex p dament dament dament dament dament nts) l-term e rsion of rsion of ckling tially sy nding of chal exar	beams (ba roblems of als of elast als of elast als of elast als of elast als of elast als of elast als of elast (f bars (1) (i f bars (2) (i of columns mmetric p f plates; So mination	sic ec beam icity icity icity icity icity icity icity icity icity icity icity icity icity icity icity icity icity icity	uations, C. Is (staticall (1) (definit (2) (stresse (3) (princip (4) (definit (5) (strains (6) (genera n of bars or prings, com kling loads ms (basic e	astiglian y indeter ion of stri s on an a val stress ion of str in an art lized Ho f circulan bbined bu c, column quations	o's the rminat ress, e urbitran es, con rain) bitrary boke's l r cross ending n unde	eorem, quilib rily in rrespo direc law, p s-section g and t er ecce	, soluti ms, cu rium e clined ondenc tion, N lane s on) torsion	equations) plane, Mohr' e to eigenvalu Mohr's circle o tress/plane str	s circle of st ae problems) of strain) ain, relation ling design)	ress)	
								c	ontinue to 材料力	学2 (機:11,12編	【· 宇) (2)↓ 【	īί

[Course requ	
	f Mechanics of Materials 1 and other basic subjects such as calculus, linear algebra, and ticles and rigid bodies is prerequisite.
[Evaluation m	ethods and policy]
of each examina	based on the mid-term examination (50%) and the final examination (50%), but the weight tion is subject to change. Class-room tests and/or reports may also be considered. The total d between 0 and 100 points (the pass mark is 60).
[Textbooks]	
T. Shibata et al. ISBN4-563-034	『Fundamentals of Strength of Materials (Zairyo-Rikigaku no Kiso) 』 (Baifu-kan)ISBN 55-7
[References,	etc.]
	e of class (preparation and review)] hanics of Materials should be fully reviewed. Reports will be assigned, which need to be
Contents of Med	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel
Contents of Mec solved as homev prior or after eac	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel
Contents of Mec solved as homev prior or after eac (Other inforr Lectures are giv	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be vorks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.
Contents of Mec solved as homey prior or after eac (Other inform Lectures are giv well as mathema	hanics of Materials should be fully reviewed. Reports will be assigned, which need to be orks. In addition, it is desirable that an enrolled student work on the textbook by him/hersel h lecture. nation (office hours, etc.)) en in a black-board style. Students are expected to take the notes to understand the ideas as tical derivations, and make questions regarding unclear points.

								未更新
Course numbe	r U-EN	G25 25007 LJ7	1 U-EN	G25	25007	LJ57	U-ENG25 2	5007 LJ77
Course title (and course 熱力 title in English)	学2(機宇 modynamics			nan and	ructor's ne, job ti departn ffiliation	nent	Professor,NA Graduate Scl	hool of Engineering AKABE KAZUYOSHI hool of Engineering essor,TATSUMI KAZUY/
arget year	nd year students (or above Number	r of cred	its	2	Yea	r/semesters	2020/Second semester
Days and periods T	1e.1	Class style	Lecture	e			Language of instruction	Japanese
Overview and	purpose o	of the course]						
Course object	tives]							
[Course sched	ule and co	ntents]						
ltime,				_				
2times,								
2times,								
6times,								
2times,								
1time, 1time,								
rume,								
[Course requir	ements]							
None								
[Evaluation me	ethods and	policy]						
[Textbooks]								
[References, e	tc.]							
(Reference b	ooks)							
[Study outside	of class (p	preparation a	nd revie	w)]				
(Other inform	ation (offic	e hours, etc.))					
Please visit KUI	ASIS to find	d out about offic	-	_				

Course n	umber	U-EN	G25 2	5005 LJ71	U-EN	IG25	25005	LJ75	U-ENG25 2	5005 LJ77
Course title (and course title in English)		学2(材 ics of Ma				nam and	ructor's ne, job tit departm ffiliation	nent		hool of Energy Science sor,KINOSHITA KATSUYUK
Target yea	r 2nd y	ear students (or above	Number	of cred	lits	2	Yea	r/semesters	2020/Second semester
Days and peri				s style	Lectur	e			Language of instruction	Japanese
[Overview	/ and pi	irpose o	f the	course]						
[Course o	bjective	es]								
		-								
[Course s	chedule	e and co	ntent	s]						
,3times,										
,2times, ,4times,										
,4times, .4times.										
,1time,										
,1time,										
[Course r	equiren	nents]								
None										
[Evaluatio	on meth	ods and	polic	>y]						
[Textbook	rel									
LIGNIDOOR]									
[Referenc	es, etc.]								
Refere	nce boo	oks)								
[Study ou	tside of	class (p	orepa	ration an	d revie	w)]				
(Other in	formati	on (offic	e hou	urs, etc.))						
*Please visi	t KULAS	SIS to find	l out a	bout office	e hours.					

											未更新
Course n	umbe	er	U-ENO	G25 2	5007 LJ71	U-EN	G25	25007	LJ57	U-ENG25 2	5007 LJ77
Course title (and course title in English)			(機宇 /namics		番偶数)		nan and	ructor's ne, job tit departm ffiliation	nent	Professor, YC Graduate Sch	tool of Engineering SHIDA HIDEO tool of Engineering AI HIROSHI
Target yea	r	2nd yea	r students o	or above	Number	of cred	its	2	Year	/semesters	2020/Second semester
Days and peri					s style	Lecture	e			Language of instruction	Japanese
[Overview	/ and	l pur	pose o	f the	course]						
[Course o	bjec	tives	5]								
[Course s	cheo	dule	and co	ntent	s]						
[Course r	equi	reme	nts]								
None											
[Evaluatio	on m	etho	ds and	polic	>y]						
[Textbook	(s]										
[Referenc											
(Refere	nce l	book	s)								
[Study ou	tside	e of c	class (p	orepa	ration an	d revie	w)]				
					urs, etc.))						
*Please visi	t KU	LASI	S to find	l out a	bout office	e hours.					

					未更新
Course number	U-ENG25 250	07 LJ71 U-ENG2	5 25007 LJ57	U-ENG25 2	5007 LJ77
Course title (and course 熱力学 title in English)	2 (エネ原) dynamics 2	na	structor's me, job title, d department affiliation		nool of Energy Science HIYAMA TAKUJI
arget year 2nd y	vear students or above N	lumber of credits	2 Yea	r/semesters	2020/Second semester
Days and periods Fri.1	Class s	style Lecture		Language of instruction	Japanese
[Overview and pu	urpose of the co	ourse]			
[Course objective	201				
[Course objective	±5]				
[Course schedule	and contents]				
2∼3times, 2∼3times.					
3times,					
2times,					
2times,					
2times, 1time,					
i time,					
[Course requirem	nents]				
None					
[Evaluation meth	ods and policy]			
[Textbooks]					
[References, etc.					
(Reference boo	oks)				
[Study outside of	class (prepara	tion and review)			
(Other informati	on (office hours	s, etc.)			
Please visit KULAS					

[Textbooks]			
	e sold at 日本材料学会事務	所(http://www.jsms.jp	/index.html)
[References, etc	.]		
(Reference bo			
	of class (preparation and		
Read the textbooks	before each class, and ascerta	ain the knowledge after	the class.
(Other informat	ion (office hours, etc.)		
	SIS to find out about office l	hours.	
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		U-ENG25 35008 LJ77	

Course nu	umber	U-EN	G25 3	5008 LJ71	U-EN	G25	35008	LJ77		
Course title (and course title in English)		。礎学1(nentals of			D	nan and	tructor's ne, job ti I departn Iffiliation	nent		hool of Engineering DMITA NAOHIDE
Target yea	r Brd	year students (or above	Number	of cred	lits	2	Year/	semesters	2020/First semester
Days and perio	ods Fri.I	1	Clas	s style	Lectur	e			Language of instruction	Japanese
[Overview		-		-						
Introductory	class to	o teach fun	dame	ntals for Ma	aterial S	cien	ice.			
[Course o	bjectiv	/es]								
10	- 1 1 1									
[Course s				-		- 6			·	properties of polymers
etc.: 3times	1 structi	fre of mate	mais:	Crystai stru	icture, a	erec	as in cry	stais, s	tructure and	properties of porymers
Plastic defor	rmation	and fractu	re: Cr	ystal defect	and fra	ctur	e etc.: 3	times		
Phase diagra	am: The	phase rule	e, bina	iry system d	liagram	, teri	nary pha	ise diag	gram etc. ,2ti	mes
Solidificatio	on and p	hase transf	ormat	tion, deposi	tion etc.	: 2ti	mes			
Processing:	Hot and	l cold proc	essing	, recrystalli	ization e	etc.	1-2times			
Steel: Steel	process	ing, materi	al, he	at treatment	, transfo	orma	ation etc	.: 2-3ti	mes	
feedback les	son: 0-	1 time								
Confirmatio	n of lea	rning achie	eveme	ent: by repo	rts and a	ı tes	t			
[Course re	equire	ments]								
None										
[Evaluatio	on metl	hods and	poli	cy]						
reports and	a test									
L										
								Co	ontinue to 材料基码	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2

Course nu	umber	U-ENO	G25 35008 LJ71	U-EN	G25	35008	LJ77		
Course title (and course title in English)			機宇:学番偶数 Materials 1	I)	nan and	tructor's ne, job ti I departn iffiliation	tle, nent	Professor,HI Graduate Scl	nool of Engineering RAKATA HIROYUKI nool of Engineering ssor,SHIMADA TAKAHIRO
Target yea	r Brd	year students o	or above Number	of cred	lits	2	Year	/semesters	2020/First semester
Days and perio	ods Fri.1		Class style	Lecture	e			Language of instruction	Japanese
-	· ·		f the course]						
Introductory	class to	teach fun	damentals for Ma	aterial S	cien	ice.			
[Course o	bjectiv	es]							
[Course s	chedul	e and co	ntents]						
[Course re	equirer	nents]							
None									
[Evaluatio	n meth	nods and	policy]						
reports and a	a test								
[Textbook	s]								
isbn:490138	1008 be	sold at ⊟	本材料学会事務	务所(ht	tp://	www.js	ms.jp/i	ndex.html)	
[Referenc	es, etc	.]							
(Refere	nce bo	oks)							
[Study ou	tside o	f class (p	preparation and	d revie	w)]				
(Other in	formati	ion (offic	e hours, etc.))						
*Please visi	t KULA	SIS to find	l out about office	hours.					
					_				

							未更新
Course number	U-ENG25 3	5008 LJ71	U-ENG2	25 35008	LJ77		
Course title (and course title in English)	基礎学 1 (エネル mentals of Mater	• · ·	n: ai	structor's ame, job tit nd departm affiliation	nent		hool of Engineering AKAGI IKUJI
Target year 2nd	d year students or above	Number of	f credits	5 2	Year	/semesters	2020/Second semester
Days and periods Wee			Lecture			Language of instruction	Japanese
[Overview and p	purpose of the	course]					
In this course, we d information for und					ing an	d using mate	rials, as well as basic
[Course objectiv	ves]						
The goal of the countries of the countri							sue further studies in attain and design.
[Course schedu	ile and content	ts]					
materials. (3) Mechanical propioloads such as elastic (4) Change in proper materials such as ad reasons for these far (5) Functions of ma of heat and electrici (6) Resources and re- abundance and rese (7) Confirmation of KULASIS.	operties, 2 classes ic deformation an erties, 2 classes: 1 ddition of chemic actors. aterials, 2 classes ity, specific heat, recycling, 1 class erves of chemical f learning attainn	: Explain pro d plastic defo Explain facto cal elements, : Explain the penetration : Discuss info elements, re	perties re ormation ors behind annealin main fun of light, sormation cycling o	elated to t , yield stro d the char g, norma nctional p magnetist concernit of materia	he stru ength, nge in lizing, ropert n, and ng sus ls, and	actural materi creep, and so the mechanic , quenching, a ies of materia so on. tainable deve l so on.	o on. al properties of and so on, as well as the als such as conduction
[Course require	ments]						
None							
[Evaluation met	hods and polic	cy]					
[Grading method] Grade is based on o	one written evam						
[Evaluation standar Must score at least (60 or above: pass	rd]		xaminati	on			

Course title (and course 밝 title in Sc English)		王ネ原:当 leasurement		na	structor's ime, job ti id departn affiliation	tle,]	Professor, TS Graduate Scl Professor, YC Graduate Scl Associate Profes Graduate Scl	hool of Engineering UCHIYA TOSHIY hool of Engineering DKOKAWA RYUU hool of Energy Scie sor,KINOSHITA KATSU hool of Energy Scie fessor,MIYAKE MA
Target year	2nd year st	udents or above	Number	of credits	2	Year/	semesters	2020/First semester
Days and periods	Fri.3	Class	style	Lecture			Language of instruction	Japanese
[Overview a								
Basics of scien	tific instu	rmentaion is	covered.					
[Course obj	ectives]							
Understanding	of the bas	sics of scient	tific instru	mentation	n engine	ering pl	nysics.	
[Course sch	edule an	d content	s]			_		
Data processin Electrical and t Radiation and t Mechanical me	g and stati tempeature material m easuremen	e measurem neasurement it,2times,Me	sis,3times, ent,2times, 2times,Ra chanical n	Data proce Electrical	ssing and and temp 1 materia	eature 1	ical analysis neasuremen	
Data processin Electrical and Radiation and Mechanical me level of attainn [Course req None	g and stati tempeature material n easuremen nent, l time uirement	istical analy: e measurem neasurement t,2times,Me b,level of att: ts]	sis,3times, ent,2times, ,2times,Ra cchanical n ainment	Data proce Electrical	ssing and and temp 1 materia	eature 1	ical analysis neasuremen	
Data processin Electrical and t Radiation and i Mechanical me level of attainm [Course req None [Evaluation	g and stati tempeature material m easuremen nent, l time uirement methods	sistical analy: e measurement it,2times,Me b,level of att: ts] s and polic	sis,3times, ent,2times, 2times,Ra chanical n ainment	Data proce Electrical	ssing and and temp 1 materia	eature 1	ical analysis neasuremen	
Data processin Electrical and Radiation and Mechanical me level of attainn [Course req None	g and stati tempeature material m easuremen nent, l time uirement methods Reports are	sistical analy: e measurement it,2times,Me b,level of att: ts] s and polic	sis,3times, ent,2times, 2times,Ra chanical n ainment	Data proce Electrical	ssing and and temp 1 materia	eature 1	ical analysis neasuremen	

59 or below: fail	
[Textbooks]	
In addition, printou	is will be distributed in class.
[References, etc	.]
(Reference bo	
introduced during of	lass
	f class (preparation and review)]
	nd their solutions will be discussed in class, so please review after class.
	ion (office hours, etc.))
*Please visit KULA	SIS to find out about office hours.
Courses delive	red by instructors with practical work experience]
-	
(1) Category	ical content delivered by instructors with practical work experience
(1) Category A course with prac	ical content delivered by instructors with practical work experience
(1) Category A course with prac	
 Category Course with prac Details of instruct 	ical content delivered by instructors with practical work experience ctors' practical work experience related to the course
 Category Course with prac Details of instruct 	ical content delivered by instructors with practical work experience
 Category Course with prac Details of instruct 	ical content delivered by instructors with practical work experience ctors' practical work experience related to the course
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 Category Course with prac Details of instruct 	ical content delivered by instructors with practical work experience ctors' practical work experience related to the course
 Category Course with prac Details of instruct 	ical content delivered by instructors with practical work experience ctors' practical work experience related to the course

計測学(機エネ原:学番奇数)(2) [References, etc.] (Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience] (1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

									未更新
Course nu	umber	U-ENG25 2	5009 LJ71						
Course title (and course title in English)		(機工ネ原: ⁴ īc Measuremen			nam and	ructor's ne, job ti departn ffiliation	nent	Professor,TS Graduate Scl Professor,YC Graduate Scl Associate Profes Graduate Scl	hool of Engineering UCHIYA TOSHIYUKI hool of Engineering DKOKAWA RYUUJI hool of Energy Science sor,KINOSHITA KATSUYUK hool of Energy Science fessor,MIYAKE MASAC
Target yea	r 2nd	year students or above	Number	of cred	its	2	Yea	r/semesters	2020/First semester
Days and perio	ods Fri.3	Clas	s style	Lecture	•			Language of instruction	Japanese
[Overview	and p	urpose of the	course]						
Basics of sc	ientific i	nsturmentaion i	is covered.						
[Course o	biectiv	esl		_					
-	-	e basics of scier	ntific instru	nentatio	n in	engine	ering	physics.	
[Course s	chedul	e and content	te]		_				
•				operate	d an	nd how	to use	computing fa	cility for this class.
									help the intrusion
detection.	U			-				U	
									detection by signature-
									ndence between alarms
		l communication							
									nal and malicious
		arning algorithi Based on the exe							letection performance.
		nd discuss it wit						s of intrusion	detection using
inacinite ica	rining, ai	la discuss it wit	in other stue	ients and	1 111.5	in uctors	•		
[Course re	equiren	nents]							
None									
[Evaluatio	on meth	ods and poli	cy]						
Examination	n. Repor	ts are considered	d also.						
[Textbook	(s]								
				富井洋	-,	中部主	敬、	箕島弘二、橋	橫小路泰義 『計測工学
(朝倉書店) ISBN	1:978425420159) 8						
								Continue to 計測学	(機エネ原:学番偶数)(2)↓↓↓

Target year	2nd year stude	nts or above Nu	mber of c	redits	2	Year	/semesters	2020/Second semes
Days and periods	Thu.1	Class st	/le Leo	cture			Language of instruction	Japanese
[Overview ar	d purpose	e of the cou	rse]					
Introduction to	microscopic	solid state p	hysics					
[Course obje	ctives]							
Gateway to ato		tronic theorie	es for meter	rials				
			.s. tor meter					
[Course sch		-						nd crystal structure,
Boltzman distri model for speci Introduction to	bution, entro fic heat of s quantum me	opy, state sur olid, thermal echanics, 3tin	n and free e expansion nes, Introdu	energy, of solid action to	Einstein o quantu	mode m mec	l for specific	tistical mechanics, heat of solid, Debye dinger equation, free
insulator Assessment, 1ti	ctron specif iodic potent me, Assessi	ic heat, resist ial, 1time, Ef nent	ivity of me	ies of m tals, Ha	etal,3tii 11 effect	, thern	al conductiv	
Free electron m distribution, ele Electrons in per insulator Assessment, 1ti	ctron specif iodic potent me, Assessi	ic heat, resist ial, 1time, Ef nent	ivity of me	ies of m tals, Ha	etal,3tii 11 effect	, thern	al conductiv	ity of metals
Free electron m distribution, ele Electrons in per insulator Assessment, 1ti [Course requ	ctron specifiodic potent iodic potent me, Assessi irements] nethods a	ic heat, resist ial, 1time, Ef nent nd policy]	ivity of me fects of per	ies of m tals, Ha	etal,3tii 11 effect	, thern	al conductiv	ity of metals

[References, etc.]	
(Reference books)	
Study outside of cla	ss (preparation and review)]
(Other information (
Please visit KULASIS	to find out about office hours.
Courses delivered b	oy instructors with practical work experience]
1) Category	
A course with practical of	content delivered by instructors with practical work experience
2) Details of instructors	' practical work experience related to the course
 Details of practical cl 	asses delivered based on instructors' practical work experience

固体物理学(材エネ原宇)(2)

[Textbooks] M. Shiga 『Introduction to Solid State Physics for Materials Scientists』 (Uchidarokakuho) ISBN: 9784753655526 (in Japanese)

[References, etc.]

(Reference books) C. Kittel 『Introduction to Solid State Physics』 (Wiley) ISBN:9780471415268

[Study outside of class (preparation and review)] Knowledge on quantum mechanics and statistical mechanics is highly helpful.

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

										未更新
Course nu	umber	U-EN	G25 3	5013 LJ52	U-EN	G25	35013	LJ77		
Course title (and course title in English)		i磁気学(d Electrom			U)	nan and	tructor's ne, job ti I departn Iffiliation	nent		nool of Engineering essor,SHIKAMA TAIICHI
Target yea	r 3rd	year students of	or above	Number	of cred	its	2	Yea	/semesters	2020/First semester
Days and perio	ods Tue	.1	Class	s style	Lectur	e			Language of instruction	Japanese
[Overview	/ and p	ourpose o	f the	course]						
[Course o	bjectiv	/es]								
[Course s	chedu	le and co	ntent	s]						
.2?3times.										
.3?4times.										
.2?4times.										
.3?5times.										
.1time.										
[Course re	equire	ments]								
None										
[Evaluatio	n met	hods and	polic	:vl		_				
Landado			pont	-71						
[Textbook	(s]									
[Referenc	es, etc	1				_				
Refere		-								
[Study ou	tside o	of class (p	orepa	ration and	d revie	w)]				
(Other in	format	ion (offic	e hou	urs, etc.))	_	_	_			
*Please visit										

[References, etc.]		
(Reference books)		
[Study outside of class	s (preparation and review)]	
(Other information (o	ffice hours, etc.)	
*Please visit KULASIS to	find out about office hours.	
Courses delivered by	instructors with practical wo	k experience]
(1) Category		
A course with practical co	ntent delivered by instructors with p	practical work experience
(2) Details of instructors'	practical work experience related	to the course

Course nu	umber	r U-ENG	325 3	5013 LJ52	U-ENG	5 35013	LJ77				
Course title (and course title in English)		電磁気学(ied Electrom			() n a	structor's ame, job ti nd departn affiliation	nent	Graduate School of Engineering Professor,SUZUKI MOTOFUM			
Farget yea	r 3	rd year students o	or above	Number	of credit	5 2	Year	semesters	2020/First semester		
Days and perio	ods Tu	ue.1	Clas	s style	Lecture			Language of instruction	Japanese		
[Overview	and	purpose o	f the	course]							
[Course o	bject	tives]									
	chod	lule and co	nton	e]							
-					· 1	11		<i>c</i> c	11 C d 1 1 1		
									cility for this class.		
letection.	leage	on the role of	1 105	III IICLWOIK	security a	nu now n	lacinine	learning ca	i neip uie intrusion		
	etectic	on by Signatu	re-Ba	used IDS.5ti	mes.Lear	the mec	hanism	of intrusion	detection by signature-		
									ndence between alarms		
ssued from	IDS a	and communi	catio	ns, and addi	ing signati	res to de	tect atta	icks.			
									nal and malicious		
									letection performance.		
								of intrusion	detection using		
nachine iea	rning,	, and discuss	it wit	n other stuc	ients and i	istructors	s.				
[Course re	eauir	ements									
None	oquii	omonioj									
NONE											
[Evaluatio	n me	ethods and	poli	cv1							
	in me	, mous una	poin	591							
[Textbook	sl										
LIGHTON	.01										
								ontinue to 広田電話	磁気学(機宇:学番偶数)(2)↓↓		
								surface to pp/而电)	₩X4丁 (183丁・丁田 H984/ (4) ¥ ¥		

									未更新
Course num	iber U-E	ENG25 35	5013 LJ52	U-EN	G25	35013	LJ77		
	5用電磁気学 pplied Electr				nam and	ructor's ne, job ti departn ffiliation	nent		nool of Engineering ITOU MANABU
Farget year	Brd year stude	ents or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and period	Tue.1	Class	s style	Lecture	e			Language of instruction	Japanese
[Overview a	nd purpose	Irpose of the course]							
[Course obj	objectives]								
[Course sch	badula and	content	e]		_				
-			-	oporata	d ar	d how	to uso	computing fo	cility for this class.
									help the intrusion
letection.	ige on the for	ic of ibb	III IICEWOIK	security	and	1 110 11	aciiii	e learning can	heip the intrusion
Intrusion Dete	ction by Sigr	nature-Ba	sed IDS,5ti	imes,Lea	arn ti	he mecl	hanisn	n of intrusion	detection by signature-
based IDS by	studying oper	n source s	signature-b	ased IDS	S and	d attack	s, sucl	h as correspor	ndence between alarms
ssued from II									
									nal and malicious
									letection performance.
								s of intrusion	detection using
machine learn	ing, and discu	uss it with	1 other stuc	ients and	1 ins	tructors			
[Course req	uirements]								
None	-	-							
[Evaluation	methods a	nd polic	;y]						
[Textbooks]	1								
[
						·	,	ontinue to ISH	
							, c	Jonunue to M/H	电磁双子 (二个/示/ (2)↓↓

応用電磁気学(エネ原)(2)	
	_
[References, etc.]	
(Reference books)	
[Study outside of class (preparation and review)]	_
(Other information (office hours, etc.))	_
*Please visit KULASIS to find out about office hours.	

原子物理学(材エネ原宇)(2)

[Textbooks] Not used

[References, etc.]

(Reference books) 原子物理学(菊池, 共立出版) isbn[]{4320030478], 原子物理学(シュボルスキー,東京図書) isbn[}{4489001452]など

[Study outside of class (preparation and review)] 講義に関連した啓蒙書などを読み,歴史の中で生まれた物理学を理解することが望ましい.

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course (間嶋) 株式会社コンポン研究所 4年 (神野) 日本原子力研究所 5.5年

(3) Details of practical classes delivered based on instructors' practical work experience 研究所での経験を活かして、最先端の技術開発や応用研究との関連を講義している.

Course n	umbe	ər	U-EN	G25 2	5014 LJ52	U-EN	G25	25014	LJ57	U-ENG25 2	5014 LJ75	
Course title (and course title in English)]学(材 hysics	エネル	原宇)		nan and	tructor's ne, job til I departm offiliation	nent	Professor,KA Graduate Sci	hool of Engineer ANNO IKUO hool of Engineer fessor,MAJIMA T	ing
Target yea	r	2nd ye	ar students	or above	Number	of cred	lits	2	Yea	r/semesters	2020/Second s	emester
Days and peri	ods F	Fri.3		Clas	s style	Lectur	e			Language of instruction	Japanese	
[Overview	an	d pur	pose c	of the	course]							
	そこ	から	導かれ								被視的世界にお) やすく概観し	
[Course o	bjed	tive	s]									
- 古典物理学 則を理解し											見的世界におけ	る諸法
[Course s	che	dule	and co	nten	ts]							
子像	,,,								.,		≤素粒子,現在 こしい温度 単	
熱,分子の	エネ	、ルギ	ーと速	度の分	分布則						E力と温度,物 の変位則,古明	
輻射公式 (I 光子と電子	Rayle	eigh-J ,電子	eans, W	ien),	Planckの車	晶射公 _王	むと:	エネルニ	ギー量	l子	の粒子性、光電	
核の発見),	回,電 Bol	i子と hrの原	原子模型	」(原子	構造への	量子論的	的ア	プロー	チ) (量	} 子条件,電	fordの原子模型 子の波動性 系, Schr{ouml}	
方程式(量子 シュレディ 量子トンネ	ンナ	ブー方									障壁の反射と読	秀過,
単サトンネ 学習到達度												
[Course r	equi	reme	ents]									
古典力学,			,									
[Evaluatio				•								
成績評価は	.武態	€によ 	.る. 素	点でii	平価する. 				,			
1									,	Jonunue to 除丁·	吻生于 (約二个尿子)	(<u></u> +) + + +

Course n	umb	er	U-EN	G25 3	5018 LJ75	U-EN	G25	5 35018	LJ77	U-ENG25 3	5018 I		2.171
Course title (and course title in English)			理学 1 (n Physics		学番奇数)		nar anc	tructor's ne, job tit I departm affiliation		Graduate Scl Professor,SU			
Target yea	r	3rd ye	ar students	or above	Number	of cred	its	2	Year	r/semesters	2020	/Second se	emester
Days and peri	ods I	Fri.3		Clas	s style	Lecture	e			Language of instruction	Japan	iese	
[Overview	ı an	d pu	rpose o	of the	course]								
[Course o	bje	ctive	s]										
[Course s	che	dule	and co	nten	ts]								
Fundamenta Particles mo Harmonic o Atomic stru Assessment [Course r None [Evaluatic examination	otion scill: cture of a equ	in or ator,2 e,4tin chiev irem	e dimen 2~3times, rement,1t ents]	sion,2	~3times,								
[Textbook	(s]												
[Referenc													
(Refere	nce	boo	ks) 						,	Sontinue to 量子物		· · · · · · · · · · · · · · · · · · ·	
									(Continue to 重子物	理字1((機:字畨句数)	(2)↓↓↓

丰面新

量子物理学1 (機:学番奇数)(2)	
tudy outside of class (preparation and review)]	
(Other information (office hours, etc.))	
lease visit KULASIS to find out about office hours.	
Courses delivered by instructors with practical work experience]	
) Category course with practical content delivered by instructors with practical work expe	rience
) Details of instructors' practical work experience related to the course	
) Details of practical classes delivered based on instructors' practical work ex-	perience

		5018 LJ75	U-ENG2	5 35018	LJ77	U-ENG25 3	5018 LJ/1
	理学 1 (材原 ^生 n Physics 1	宇)〈情報	{> nai ano	tructor's me, job ti d departn affiliation	tle, nent	Graduate Scl Associate Profes	hool of Engineerin ssor,MIYADERA TAK
Target year Brd y	ear students or above	Number	of credits	2	Year	/semesters	2020/First semes
Days and periods Fri.2	Clas	s style	Lecture			Language of instruction	Japanese
[Overview and pu	rpose of the	course]					
Quantum theory is or phenomena which ca understand the funda	n not be unders	stood withir	n the classic	al theor	y. The	main purpose	
[Course objective	es]						
[Course schedule 1. Introduction. Wav 2. Mathematical strue 3. Mathematical strue	e mechanics an cture of quantu	d matrix m m theory (1		observal	ble.		
 Mathematical structure Mathematical structure One particle on on One particle on on Potential problem Potential problem 	cture of quantu cture of quantu e-dimensional e-dimensional (1) General the	m theory (3 m theory (4 space (1) cl space (2) C cory	 P) Hilbert sp P) operators P) Schroedir P) S	ace and and obso ager equa ory and is bertson's	ervable ation a ts quar s uncer	es nd time evolu ntization	
 Mathematical structure One particle on on One particle on on 	cture of quantu cture of quantu e-dimensional (1) General the (2) General the ntial tor (1)	m theory (3 m theory (4 space (1) cl space (2) C cory	 P) Hilbert sp P) operators P) Schroedir P) S	ace and and obso ager equa ory and is bertson's	ervable ation a ts quar s uncer	es nd time evolu ntization	
 Mathematical struction One particle on on One particle on on Potential problem Potential problem Square well potential Scattering theory Harmonic oscilla Harmonic oscilla 	cture of quantu cture of quantu e-dimensional (1) General the (2) General the titial tor (1) tor (2)	m theory (3 m theory (4 space (1) cl space (2) C cory	 P) Hilbert sp P) operators P) Schroedir P) S	ace and and obso ager equa ory and is bertson's	ervable ation a ts quar s uncer	es nd time evolu ntization	
 Mathematical strue One particle on on Potential problem Potential problem Square well pote Box potential Scattering theory Stattering theory Harmonic oscilla Summary 	cture of quantu cture of quantu e-dimensional (1) General the (2) General the thial tor (1) tor (2)	m theory (3 m theory (4 space (1) cl space (2) C ory ory and its	 P) Hilbert sp P) operators P) Schroedir P) S	ace and and obso ager equa ory and is bertson's	ervable ation a ts quar s uncer	es nd time evolu ntization	
5. Mathematical strue 6. One particle on on 8. Potential problem 10. Square well pote 11. Box potential 12. Scattering theory 13. Harmonic oscilla 14. Harmonic oscilla 15. Summary [Course requirem Classical mechanics, [Evaluation meth]	cture of quantu true of quantu true of quantu e-dimensional e-dimensional (1) General the (2) General the ntial tor (1) tor (2) hents] Linear algebra ods and polid	m theory (3 m theory (4 space (1) cl space (2) C ory ory and its	 P) Hilbert sp P) operators P) Schroedir P) S	ace and and obso ager equa ory and is bertson's	ervable ation a ts quar s uncer	es nd time evolu ntization	
 Mathematical strue 6. One particle on on 8. Potential problem 10. Square well pote 11. Box potential 12. Scattering theory 13. Harmonic oscilla 14. Harmonic oscilla 15. Summary [Course requirem Classical mechanics, 	cture of quantu ture of quantu e-dimensional e-dimensional (1) General the (2) General the ntial tor (1) tor (2) tor (2) tinear algebra ods and polici based on one v	m theory (3 m theory (4 space (1) el (2) space (2) C tory ory and its vory and its	c) Hilbert sp i) operators i) Schroedin lassical thee (CR and Rol mathematic mathematic nination.	ace and and obse ager equa ory and i bertson's cal adder	ervablation a tts quar s uncer adum	25 nd time evolu tization tainty relation	

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Course n	umber	U-EN	G25 35	5018 LJ75	U-EN	G25	35018	LJ77	U-ENG25 3	5018 LJ71
Course title (and course title in English)		理学 1 (m Physics		2番偶数)		nan and	tructor's ne, job ti I departn Iffiliation	nent		nool of Engineering essor,NAKAJIMA KAORU
Target yea	r Brd y	ear students o	or above	Number o	of cred	lits	2	Yea	/semesters	2020/Second semester
Days and peri	ods Fri.3		Class	style	Lecture	e			Language of instruction	Japanese
[Overview	and p	urpose o	f the o	course]						
[Course o	bjectiv	es]								
[Course s	chedul	e and co	ntents	s]						
0										
[Course r	equiren	nents]								
None										
[Evaluatio	n moth	ada and	nalia							
examination			polic	λl						
[Textbook	(s]									
[Referenc	es, etc.]								
Refere	nce boo	oks)								
[Study ou	tside o	f class (p	orepar	ration and	d revie	w)]				
(Other in		•								
*Please visi	t KULA	SIS to find	l out al	bout office	hours.					

量子物理学1(材原字)(情報)(2) 60 and above: Passed 59 and below: Failed [Textbooks] Not used [References, etc.] (Reference books) Modern Quantum Mechanics (J.J.Sakurai) isbn{}[9780805382914] isbn{}[9781292024103] Lectures on Quantum Theory (C.J. Isham) isbn{}[1860940013] [Study outside of class (preparation and review)] Clarify what you have learnt and what you do not understand. Solve a problem set which will be distributed. (Other information (office hours, etc.]) Send an email. *Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] (1) Category A course with practical content delivered by instructors with practical work experience (2) Details of instructors' practical work experience related to the course (3) Details of practical classes delivered based on instructors' practical work experience

											未更新
Course nu	umbe	er	U-EN	G25 4	5019 LJ77	U-EN	G25	45019	LJ71	U-ENG25 4	5019 LJ75
Course title (and course title in English)			里学2(n Physics				nan and	ructor's ne, job til departm ffiliation	nent		hool of Engineering ASUO MASAHIRO
Target yea	r	4th ye	ear students o	or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and perio	ods V	Ved.	1	Clas	s style	Lectur	e			Language of instruction	Japanese
[Overview	anc	d pu	irpose o	f the	course]						
[Course o	bjec	tive	es]								
[Course s	cheo	dule	and co	nten	s]						
,3times, ,3times, ,1?2times, ,1?2times, ,2times, ,3times, ,1time, [Course re None	equi	rem	ients]								
[Evaluatio	n m	eth	ods and	polie	¢y]						
[Textbook	s]										
[Reference (Referen											
[Study ou	tside	e of	class (p	orepa	ration and	d revie	w)]				
(Other in *Please visit						hours.					

[Textbooks]	
Not used	
[References, etc.]	
) anics (J.J.Sakurai) isbn{}{9780805382914} isbn{}{9781292024103} neory (C.J. Isham) isbn{}{1860940013}
[Study outside of cla	ass (preparation and review)]
Solve a distributed probl	em set.
(Other information ((office hours, etc.))
Send an email.	
*Please visit KULASIS	to find out about office hours.
[Courses delivered b	by instructors with practical work experience]
 Category A course with practical c 	content delivered by instructors with practical work experience
(2) Details of instructors	' practical work experience related to the course

Course nu	umber	U-EN	G25 45	5019 LJ77	U-EN	G25	5 45019	LJ71	U-ENG254	5019 LJ75
Course title (and course title in English)]理学2(um Physics		E)〈情報	D	nan and	tructor's ne, job ti I departr affiliatior	tle, nent		nool of Engineering sor,MIYADERA TAKAYUKI
Target yea	r Brd	year students	or above	Number	of cred	lits	2	Yea	r/semesters	2020/Second semester
Days and peri	ods Tue	.1	Class	style	Lectur	e			Language of instruction	Japanese
[Overview	and p	urpose o	of the	course]						
mathematica	al formu	ilation.								pite of its peculiar pable to manipulate it.
[Course o	bjectiv	/es]								
	o calcul	ate some p	roperti	ies of quan				rticle i	n three dimen	sional space.
[Course s	chedu	le and co	ntent	s]						
 Fundamei Angular r Angular r Eigenvalt Spin Central pq Hydroger perturbati perturbati Heisenbi Heisenbi Heisenbi Hirday and and and and and and and and and and	noment noment le of Ar otential a atom on theo on theo erg equa on pictu equality tate article at ions to	um (1) um (2) ger ggular mon ry (1) ry (2) ation rre	nentum m field	n operator.		ind \$	SO(3)			
[Course re		ments]								
Quantum Ph	iysics 1									
[Evaluatio	n metl	hods and	polic	y]						
Evaluatio The result 60 and	n will b n policy	e based on ritten exan Passed		ritten exan			ove out			
		. – –							Continue to 量子物理	里学2 (材原宇) 〈情報〉(2)↓↓↓

Course nur	nber	U-EN0	325 3	5020 LJ71						
Course title (and course title in English)		力学(エ um Mech				nan and	ructor's ne, job tit departm ffiliation	nent		hool of Energy Science IATANI SHIYOUJI
Target year	Brd y	ear students o	or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and period				s style	Lecture	e			Language of instruction	Japanese
[Overview a	and pu	irpose o	f the	course]						
[Course ob	jectiv	es]								
[Course sc	hedul	e and co	ntent	s]						
Vectors and tr Fundamental Constitutive f Potential theo Wave motion Stabilities,2tin Examination, [Course red None [Evaluation	laws,2 ramew pries,2ti s,2time mes, 1 times quiren	times, ork,3times mes, s, , nents]		עיצ]						
[Textbooks	5]									
[Reference										
(Reference)	ce boo	oks)								
[Study outs	side of	f class (p	orepa	ration and	d revie	w)]				
(Other info	ormati	on (offic	e hou	urs, etc.))						
*Please visit 1	KULA	SIS to find	l out a	bout office	hours.					

Course title (and course title in English) Continuum Mechanics	name and e	uctor's e, job title, departmen filiation		for Frontier Li sor,ADACH		l Sciences
arget year Brd year students or above Number of	of credits	2 Y	ear/semes	sters 2020)/Second se	emester
Days and periods Tue.3 Class style	Lecture		Language of	instruction Japa	nese	
[Overview and purpose of the course] This lecture provides an introduction to the theo bioengineering and biomedical engineering.	ory of continu	uum mech	anics for it	is application	on to the fie	elds of
Course objectives] udents will be able to understand tensor analy living tissues and cells.	sis and conti	nuum me	chanics, an	d to apply t	hem in moo	deling
Course schedule and contents]						
 Mathematical preliminaries Matrix algebra, Index notation, Summation con , 4) Vectors and tensors Cartesian tensors, Scalar and vector products, E operator, Divergence theorem 			U		variants, N	labla
5, 6) Kinematics to and configurations, Displacement, Strain	n tensor, Cor	npatibility	, Material	time deriva	tive	
, 8) Stress and equilibrium orce and stress, Stress tensor, Traction, Cauch	y stress, Prin	cipal stres	ses, Equati	ion of equil	ibrium	
), 10) Conservation Laws and governing fass conservation, Linear and angular moment		t law of th	ermodynar	nics for coi	ntinua	
1, 12) Constitutive models constitutive equations, Stress-strain relationshij ymmetry, Biological tissues	p, Linear elas	sticity, Ne	wtonian vi	scous fluid	s,Material	
1 3, 1 4) Boundary value problems Differential equations with a set of boundary co	nditions, Na	vier-Stoke	es equation.	, Navier's e	quation	
5) Feedbacks pplication of continuum mechanics to the ana	lyses of biolo	ogical tiss		uction to bi		I

は course in pissh) d course in pissh) d course in pissh) d course in pissh) d course in pissh) d course in pissh) d course in year students or above Fri.2 Class style Lecture Lec												
d course in in plish) エネルギー変換工学 (機工ネ) Energy Conversion name, job title, and department of affiliation Drofessor, NAKABE KAZU YOSHI Graduate School of Energy Science Professor, ISHIYAMA TAKUJI get year rd year students or abov. Number of credits 2 Year/semesters 2020/First semester s and periods Fri.2 Class style Lecture upuge instruction Japanese verview and purpose of the course] ious energy sources and energy conversion systems will be outlined. Also, basic matters on energy version processes and thermodynamics treatments for the effective use of energy will be lectured. Durse objectives] mt with class, fundamental issues related to energy conversion engineering are learned, as well as a target is in the current situation of energy resources, latest technologies of energy conservation and new energy em, environmental measures are comprehensible. Durse objectives] mt earned on tents] rgy source and energy conversion system, 3?4times,* Energy resources titmes, titmes, synthetically evaluated from attendance, report and final examination. extbooks] interements] purse checkule of class (preparation and review)] term of the course, etc.])	ourse n	umb	er	U-EN	IG25 3	5023 LJ71	U-EN	G25	5 35023	LJ77	U-ENG25 3	5023 LJ28
Solution The function of every services and periods The function of every services and periods The function of every services and thermodynamics treatments for the effective use of energy will be lectured. Sources and periods Fri.2 Class style Lecture range disturbed Japanese verview and purpose of the course] ious energy sources and energy conversion systems will be outlined. Also, basic matters on energy version processes and thermodynamics treatments for the effective use of energy will be lectured. pourse objectives] m this class, fundamental issues related to energy conversion engineering are learned, as well as a target is in the current situation of energy resources, latest technologies of energy conservation and new energy ene, environmental measures are comprehensible. purse schedule and contents] rgy source and energy conversion system.3?4times,* Energy resources titmes, titm	urse title d course e in glish)					(機エネ)		nan and	ne, job ti I departn	tle, nent	Professor,NA Graduate Scl	AKABE KAZUYOSHI nool of Energy Science
verview and purpose of the course] ious energy sources and energy conversion systems will be outlined. Also, basic matters on energy version processes and thermodynamics treatments for the effective use of energy will be lectured. burse objectives] m this class, fundamental issues related to energy conversion engineering are learned, as well as a target is in the current situation of energy resources, latest technologies of energy conservation and new energy em, environmental measures are comprehensible. burse schedule and contents] regy source and energy conversion system, 3?4times,* Energy resources times, time	get yea	ır	3rd y	ear students	s or above	Number	of cred	lits	2	Year/	semesters	2020/First semester
ious energy sources and energy conversion systems will be outlined. Also, basic matters on energy version processes and thermodynamics treatments for the effective use of energy will be lectured. burse objectives] m this class, fundamental issues related to energy conversion engineering are learned, as well as a target is in the current situation of energy resources, latest technologies of energy conservation and new energy em, environmental measures are comprehensible. burse schedule and contents] regy source and energy conversion system, 3?4times,* Energy resources litimes, litim	s and peri	iods 1	Fri.2		Clas	s style	Lectur	e			Language of instruction	Japanese
version processes and thermodynamics treatments for the effective use of energy will be lectured. burse objectives] m this class, fundamental issues related to energy conversion engineering are learned, as well as a target is in the current situation of energy resources, latest technologies of energy conservation and new energy em, environmental measures are comprehensible. burse schedule and contents] rgy source and energy conversion system,3?4times,* Energy resources titimes, times, t	verview	v an	d pu	irpose	of the	course]						
m this class, fundamental issues related to energy conversion engineering are learned, as well as a target is in the current situation of energy resources, latest technologies of energy conservation and new energy em, environmental measures are comprehensible. Durse schedule and contents] rgy source and energy conversion system,3?4times,* Energy resources times, t												
in the current situation of energy resources, latest technologies of energy conservation and new energy em, environmental measures are comprehensible. burse schedule and contents] regy source and energy conversion system,3?4times,* Energy resources times, times	ourse o	bje	ctive	es]								
rgy source and energy conversion system,3?4times,* Energy resources ttimes, ttimes, ttimes, ttimes, ttimes, topurse requirements] owledge of thermodynamics is required. valuation methods and policy] mievement will be synthetically evaluated from attendance, report and final examination. extbooks] hing. Print material is properly distributed. seftences, etc.] Reference books) ill be introduced, if necessary. tudy outside of class (preparation and review)] ther information (office hours, etc.))	in the cu	irren	t situ	ation of	energy	resources	, latest to					
times, times,	ourse s	che	dule	and c	onten	ts]						
weedge of thermodynamics is required.	4times, 4times, 4times,											
valuation methods and policy] ievement will be synthetically evaluated from attendance, report and final examination. extbooks] hing. Print material is properly distributed. eferences, etc.] Reference books) ill be introduced, if necessary. cudy outside of class (preparation and review)] Ether information (office hours, etc.))												
ievement will be synthetically evaluated from attendance, report and final examination. extbooks] hing. Print material is properly distributed. eferences, etc.] Reference books) ill be introduced, if necessary. rudy outside of class (preparation and review)] ther information (office hours, etc.))	owiedge	oru	ierino	odynam	ics is re	quirea.						
extbooks] hing. Print material is properly distributed. eferences, etc.] Reference books) ill be introduced, if necessary. exudy outside of class (preparation and review)] Other information (office hours, etc.))	valuatio	on n	neth	ods an	d poli	cy]						
hing. Print material is properly distributed. eferences, etc.] Reference books) ill be introduced, if necessary. study outside of class (preparation and review)] ther information (office hours, etc.))	nievemer	nt wi	ill be	synthet	cally e	valuated fi	rom atter	ndan	ce, repo	rt and f	inal examina	ation.
eferences, etc.] Reference books) ill be introduced, if necessary. study outside of class (preparation and review)]	extbook	ks]										
Reference books) ill be introduced, if necessary. audy outside of class (preparation and review)] ther information (office hours, etc.))	hing. Pri	int n	nateri	al is pro	perly d	listributed.						
ill be introduced, if necessary. udy outside of class (preparation and review)] ther information (office hours, etc.))												
ther information (office hours, etc.))				- /	sary.							
	tudy ou	Itsic	le of	class	(prepa	ration an	nd revie	w)]				
ease visit KULASIS to find out about office hours.	Other in	forr	natio	on (offi	ce hoi	urs, etc.)))					
	ease visi	t Kl	JLAS	SIS to fi	nd out a	ibout offic	e hours.					

	nts]			
None	_			
[Evaluation metho	ds and policy]			
Exam 100 (+ Reports	max 10)			
[Textbooks]				
instructed during class				
[References, etc.]				
(Reference bool introduced during class				
[Study outside of	lass (preparat	ion and revie	ew)]	
(Other informatio	n (office hours	, etc.))		

											未更新
Course nu	umbe	ər	U-EN0	G25 3	5023 LJ71	U-EN	G25	35023	LJ77	U-ENG25 3	5023 LJ28
Course title (and course title in English)			ギー変換 Conversic	-	(原)		nan and	ructor's ne, job ti departn ffiliation	nent	Senior Lectur Graduate Scl	hool of Engineering er,KAWARA ZENSAKU hool of Engineering DKOMINE TAKEHIKO
Target yea	r	3rd y	ear students o	r above	Number	of cred	lits	2	Year	/semesters	2020/First semester
Days and perio	ods N	/lon.	.1	Class	s style	Lectur	е			Language of instruction	Japanese
[Overview	and	d pı	urpose o	f the	course]						
[Course o	bjec	ctive	es]								
[Course s	che	dule	e and co	ntent	s]						
,2times,											
4times,											
,2times, .3times.											
.3times.											
,1time,											
[Course re	equi	ren	nents]								
None											
[Evaluatio	n m	eth	ods and	polic	;y]						
[Textbook	s]										
[Referenc	es, e	etc.]								
(Refere	nce	boc	oks)								
[Study ou	tsid	e of	f class (r	repa	ration and	d revie	w)1				
				- 174			.,1				
(Other in											
*Please visit	t KU	LAS	SIS to find	l out a	bout office	hours.					

										未更新
Course nu	imbe	er U-EN	G25 3	5024 LJ71	U-EN	G25	35024	LJ77		
Course title (and course title in English)		h工学(機) ration Engine	ering			nan and	ructor's ne, job tit departm ffiliation	nent	Senior Lecture Graduate Sch Professor,KC Graduate Sch	nool of Engineering r,NAKANISHI HIROAKI nool of Engineering MORI MASAHARU nool of Engineering ATSUBARA ATSUSHI
Target yea	r	3rd year students (or above	Number	of cred	its	2	Yea	r/semesters	2020/Second semester
Days and perio				s style	Lecture	•			Language of instruction	Japanese
[Overview	and	d purpose o	f the	course]						
[Course ol	bjec	tives]								
[Course so ,3times, .3times,	che	dule and co	nten	s]						
,1time, .4times.										
,3times, .1time.										
[Course re	qui	rements]								
None										
[Evaluatio	n m	ethods and	poli	¢y]						
[Textbook	s]									
	_					_				
[Reference (Referen										
								(Continue to #	最動工学(機) (2)↓↓↓

									112
Course nu	mber	U-EN	G25 3	5024 LJ71	U-ENO	325 35024	LJ77		
Course title (and course title in English)		学(宇) on Engine	ering			Instructor's name, job ti and departr of affiliatior	tle, nent	Associate Pr	nool of Engineering ofessor,AOI SHINYA nool of Engineering NDA KEI
Target year	· 2nd	year students (or above	Number	of credi	ts 2	Yea	r/semesters	2020/Second semester
Days and perio	ds Wea	1.1	Class	s style	Lecture			Language of instruction	Japanese
[Overview	and p	urpose o	f the	course]					
[Course of	bjectiv	ves]							
[Course so	chedu	le and co	ntent	s]					
,1time,				-					
,2times,									
,2times,									
,2times, .2times,									
.3times.									
.3times.									
,ounco,									
[Course re	quire	ments]							
None									
[Evaluatio	n metl	hods and	polic	v]					
-									
[Textbook	s]								
[Reference	es, etc	.]							
(Referen	ice bo	oks)							
[Study out	side c	of class (p	orepa	ration and	d reviev	/)]			
(Other inf	ormat	ion (offic	e hou	urs, etc.))					
*Please visit	KULA	SIS to find	l out a	bout office	hours.				

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Study outside of clas	s (preparation and review)]	
(Other information (o	ffice hours. etc.)	
	find out about office hours.	
Courses delivered by	instructors with practical work experience]	
1) Category		
course with practical co	ntent delivered by instructors with practical work experience	
2) Details of instructors'	practical work experience related to the course	
Details of practical class	sses delivered based on instructors' practical work experience	

										未更新
Course nu	umbe	er U-EN	G25 3	5025 LJ77	U-EN	G25	5 35025	LJ71		
Course title (and course title in English)		■工学1(機 trol Engineer		京:学番 奇	数)	nan and	tructor's ne, job tit I departm affiliation	nent	Professor,MA Graduate Sch	tool of Engineering ATSUNO FUMITOSHI tool of Engineering r,ENDO TAKAHIRO
Target yea	r	3rd year students	or above	Number o	of cred	its	2	Year	/semesters	2020/First semester
Days and peri				s style	Lecture	e			Language of instruction	Japanese
[Overview	and	d purpose o	f the	course]						
[Course o	bjec	tives]								
[Course s	che	dule and co	nten	s]						
,1time,						_				
,3times,										
,2times, ,2-3times,										
,2-5times, ,3times,										
.2-3times.										
,1time,										
[Course re	equi	rements]								
None										
[Evaluatio	n m	ethods and	poli	>y]						
[Textbook	s]									
[Referenc	es, e	etc.]								
(Refere	nce	books)								
[Study ou	tsid	e of class (j	orepa	ration and	d revie	w)]				
(Other in	form	nation (offic	e hoi	urs, etc.))						
*Please visi	KU	LASIS to fine	l out a	bout office	hours.					

											未更新
Course numb	per	U-ENG	25 350	25 LJ77	U-EN	G25	35025	LJ71			
Course title (and course title in Co English)	御工学 1 ntrol Eng			:学番俳]数)	nan and	tructor's ne, job ti I departr Iffiliatior	nent	Professor Graduate	OC Scł	nool of Informatics DTSUKA TOSHIYUKI nool of Informatics sor,SAKURAMA KAZUNORI
arget year	3rd year s	students or	r above N	lumber	of cred	lits	2	Yea	r/semeste	rs	2020/First semester
Days and periods	Thu.1	c	Class	style	Lectur	e		-	Language of instr	uction	Japanese
[Overview ar	nd purp	ose of	the c	ourse]							
systematic way. class describes	. Its majo the funda	or part c amental	consists	s of both	Classica	ıl Co	ontrol T				mechanical ones in a Control Theory. This
[Course obje The course goal frequency respo	l is to un	derstand		asic conc	epts of	Clas	sical Co	ontrol	Theory suc	h a	s transfer functions,
[Course sche	edule a	nd con	tents								
the concept of T representation i Responses of dy Stability tests au Properties of fe- control systems Frequency resp introduced. The Design of contr Phase Lag, and	Fransfer I s shown. ynamical re descril edback s and Roc onses,3-4 stability ol system I PID cor	Function I system bed. systems, ot Locus 4times, y test of ms,2time mpensat	ns is ir ns,3tim ,2-3tim s are ex The con feedba ies,Basi	es,Time es,Time es,Basic xplained. ncept of l ack system ic compo	l based of response properti Frequen ms base nents of	on L es of ies si cy re d on	aplace ' linear : uch as s esponse the free	Fransfo system teady s, Bod quency	orm, and E s are show state chara e diagrams responses	loc n. S cter s, V is	Stability of systems and ristics of feedback ector locus are
[Course requ		-	T	c .		1					
Elementary kno	wiedge (or Lapia	ace Tra	nstorm 1	s require	20.					
[Evaluation r	nethod	s and p	policy]							
Scores of quizz	es, repor	ts and th	he regu	ılar exam	nination	are t	aken in	to acco	ount.		

Course n	umber	LI ENG							
	umber	U-ENC	G25 350	025 LJ77	U-ENO	325 35025	LJ71		
Course title (and course title in English)		学1(宇) Engineeri				Instructor's name, job t and depart of affiliation	itle, nent		hool of Engineering Fessor,MARUTA ICHIR
Target yea	r Brd ye	ar students o	or above N	lumber	of credi	ts 2	Yea	r/semesters	2020/First semester
Days and peri	ods Mon.:	3	Class	style	Lecture			Language of instruction	Japanese
	ineering o	consists o	f theory	and met					ncludes the classical uency response.
[Course o	bjective	s]							
The goal of feedback co									thodologies to design
[Course s	chedule	and co	ntents]					
Stability c	response	and stabi	lity						
9-10. Freque Basic kno 11-13. Char Performar 14-15. Desig	f dynami ency resp wledge of acteristic ice criteri gn of feed sign feed	cal system onse n frequend of feedba a of feedb lback con	ns, tran cy respo ack cont back co trol sys	onse usin trol syste ntrol syst	g Bode p ms ems usin	lots and ve g Nyquist'	ector lo s stabil	ocus lity criteria an	e stability criteria d the root locus metho lag compensation and
9-10. Freque Basic kno 11-13. Char Performar 14-15. Desig How to de	f dynami ency resp wledge or acteristic ace criteri gn of feed sign feed	cal system onse n frequence of feedba a of feedba lback cont back cont	ns, tran cy respo ack cont back co trol sys	onse usin trol syste ntrol syst	g Bode p ms ems usin	lots and ve g Nyquist'	ector lo s stabil	ocus lity criteria an	d the root locus metho
9-10. Freque Basic kno 11-13. Char Performar 14-15. Desig How to de PID control	f dynamie ency resp wledge of acteristic ice criteri gn of feed esign feed	cal system onse n frequend of feedba a of feedb lback con back cont ents]	ns, tran cy resp ack cont back con back con trol syst trol syst	onse usin, trol syster ntrol syste stem, tem using	g Bode p ms ems usin g phase-le	lots and ve g Nyquist' ead compe	ector lo s stabil	ocus lity criteria an	d the root locus metho
9-10. Freque Basic kno 11-13. Char Performar 14-15. Desig How to de PID control	f dynamie ency resp wledge of acteristic ice criteri gn of feed sign feed equirem nction the	cal system onse n frequenc of feedba a of feedba lback cont back cont back cont ents]	ns, tran cy respo ack cont back cont back cont back cont trol syst trol syst trol syst	onse usin, trol syste ntrol syst stem, tem using	g Bode p ms ems usin g phase-le	lots and ve g Nyquist' ead compe	ector lo s stabil	ocus lity criteria an	d the root locus metho
9-10. Freque Basic kno 11-13. Char Performar 14-15. Desig How to de PID control [Course r Complex fu [Evaluation concepts and	f dynamiency resp wledge on acteristic ice criteri gn of feec sign feed equirem nction the will be ba d the desi	cal system onse n frequency of feedba a of feedba iback cont back cont back cont eents] eory, Ordi ods and sed on the gn theory	ns, tran cy respo ack cont back cont back cont trol syst trol syst inary di policy e final e	onse usin, trol system ntrol system, tem using ifferential /] examinati dback sys	g Bode p ms ems usin g phase-le equation on which tems.	lots and ve g Nyquist' ead compe	ector lo s stabil nsatior es the o	bcus lity criteria an a, phase-lead-l degree of com	d the root locus metho
9-10. Freque Basic kno 11-13. Char Performar 14-15. Desig How to de PID control [Course r Complex fu [Evaluatio Evaluation v concepts an Also, the rej [Textbool	f dynamiency resp wledge on acteristic cec criteri gn of feec sign feed equirem nction the on metho will be ba d the desi ports and (s]	cal system onse n frequent of feedba a of feedb laback cont back cont bach cont back cont cont cont back cont back c	ns, tran cy respe tek cont back cont back cont trol syst trol syst trol syst inary di policy e final e v of feece	onse usin, trol system ntrol systestem, tem using ifferential examinati dback sys l be addec	g Bode p ms ems usin g phase-le equation on which tems. d up to on	lots and vo g Nyquist' ead compe n theory n determine ne third of	ector lo s stabil nsatior es the o the po	lity criteria an a, phase-lead-l degree of com	d the root locus meth lag compensation and prehension of the bas

[Textbooks]	
T. Sugie, M. Fujita: Introduction of Feedback Control. Corona Publishing Co. Ltd. isbn{}{9784339033038}	
[References, etc.]	
(Reference books)	_

T. Sugie, H. Kajiwara: Exercises in System Control Engineering. Corona Publishing Co. Ltd. isbn{}{ 9784339033069}

(Related URLs) (none)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

制御工学1 (機エネ原:学番偶数)(2)

ome parts of the above contents may be skipped/added depending on the course schedule of the year.

*Please visit KULASIS to find out about office hours.

制御工学1 (宇) (2)

[References, etc.] (Reference books) Introduced during class

[Study outside of class (preparation and review)]

To read through textbooks as the lecture progresses. Also, review the parts of the textbook instructed according to the achievement level of the assignments.

(Other information (office hours, etc.)) Feedback on lecture understanding is made from time to time according to the degree of achievement of the assignments.

*Please visit KULASIS to find out about office hours.

										未更新
Course num	nber	U-ENO	325 3	5027 LJ71						
Course title (and course title in English)		学2(機 Engineeri				nan and	tructor's ne, job til I departm iffiliation	nent	Professor,MA Graduate Sch	nool of Engineering ATSUNO FUMITOSHI nool of Engineering r,ENDO TAKAHIRO
Target year	3rd y	ear students o	r above	Number	of cred	its	2	Yea	r/semesters	2020/Second semester
Days and periods				s style	Lecture	e			Language of instruction	Japanese
[Overview a	ind p	urpose o	f the	course]						
[Course obj	ectiv	esl								
[Oodise obj	court	691								
[Course sch	nedul	e and co	ntent	s]						
,1time,										
,2times, .2times.										
,2times,										
.1time.										
.2times.										
.2times.										
.2times.										
,1time,										
[Course req	uiren	nents]								
None										
[Evaluation	meth	ods and	polic	;y]						
[Textbooks]	1									
[ICALDOOKS]										
[References		•								
(Referenc	e boo	oks)								
[Study outs	ide o	f class (p	orepa	ration and	d revie	w)]				
(Other info	rmati	on (offic	e hou	ırs, etc.))		_				
*Please visit K	ULA	SIS to find	l out a	bout office	hours.					

制御工学 2 (宇)(2)
[Evaluation methods and policy]
The points will be evaluated based on the score of the paper test. The report assignment and attendance point
may adds auxiliary points. The goal of this course is to understand the outline of the modern control and to acquire the ability to design the control system.
acquire the ability to design the control system.
[Textbooks]
Not used
[References, etc.]
(Reference books)
Introduced during class
[Study outside of class (preparation and review)]
We will give a report for each unit. Review is necessary after every lecture.
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.

Course nu	umber	U-EN	G25 3	5027 LJ71								
Course title (and course title in English)		学2(字) I Engineering 2 Instructor's and department of affiliation Graduate School of Engineering Professor,FUJIMOTO KENJI										
Target yea	r Brd	Bird year students or above Number of credits 2 Year/semesters 2020/Second semester										
Days and perio	ods Thu	.2	Clas	s style	Lecture	•			Language of instruction	Japanese		
[Overview This course modeling, an	treats m	odern con	trol th	eory based					dynamical sys	stems. It includes	_	
[Course o	bjectiv	/es]										
Students wil	l learn s	state-space	equa	tions, stabil	ity analy	/sis,	feedbad	ck con	troller synthe	sis and observer desi	gn.	
[Course s	chodu	le and co	nton	e]		_						
The basic sc				-								
 Ordinary . Eigenvalu Soutions 5. Stability Transfer f Controllal 8. Observab Observal 9. Coordinat Observal 10. Controllal 11. Observal 12. State fee State obs Optimal 15. Summar 	es, eige of state unction bility e transf ability c bility c dback c servers control y	envectors a -space equ s and reali formation a canonical fo control and output and Kalm	nd systations zation and cator orm rm feedb	stems s theory nonical dec	omposi							
-	require	d to take b			of linear	alge	ebra and		-	n theory. I is also 御工学 2 ⁻ (字) (2)↓	<u>t</u> t.	

											未更新	
Course nu	mbe	er	U-ENO	325 3	5030 LJ71							
	and course 生産工学 (機) name, job title, tle in Production Engineering and department Associate Professor, JZUI KAZUHIRO											
arget year Srd year students or above Number of credits 2 Year/semesters 2020/Second semester												
Days and perio					s style	Lecture				Language of instruction	Japanese	
[Overview												
				const	ruct and op	erate a r	nanı	ıfacturiı	ng sys	tem of a mech	nanical product.	
[Course o	•											
The goal is t decision-mal				oncep	ot of a man	ufacturir	ıg sy	ystem, a	nd to	become able t	o handle related basic	
[Course s	chec	dule a	nd co	ntent	s]							
make decisio Production a management ,3times, Production S shop schedu Plant Layout Industrial Er analysis, hur ,1time,	ons u mp (, MF chec ling, amp gine nan-	sing th Operat RP, JIT duling, and pro Line bering, maching	te conc ions M 7, etc. a 2times roject s Blanci 2times, ne anal	ept (fe anage re cov "Basic chedu ng,2ti After	or example ment,2time vered. approache ling are int mes,Basic a introducing	s for sin roduced approact	F m nd f gle i nes f ncip	ethod fo orecasti machine for plant les of m	or inve ng, pro e scheo t layou iotion	estment decisi oduction plan duling, flow s at and line bal	nd cash flow, how to ons) is addressed. ning, inventory hop scheduling, job ancing are introduced. approaches for process dressed.	
[Course re	qui	remei	ntsj									
					_							
[Evaluatio				•								
The regular		nnatio	n, 1n-cl	ass ex	aminations	and rep	orts	are tak	en into	o account.		
[Textbook Not used	sj											
Reference	es, e	etc.1	_	_					_			
Referer			5)									
[Study out	side	e of c	lass (p	orepa	ration an	d revie	w)]					
Homework p												
(Other inf	orm	ation	(offic	e hou	urs, etc.))							
The topics c						olan acco	ordii	ng to the	e actua	al schedule.		
*Please visit	KUI	LASIS	to find	l out a	bout office	hours.						

				未更新
Course number	U-ENG25 35035 LJ75			
Course title (and course title in English)	n性学(材エネ) of Crystal Properties and Impe	Instructor's name, job ti and departn of affiliation	le, Professor,IN Graduate So	chool of Engineering NUI HARUYUKI chool of Engineering essor,KISHIDA KIYOUSUKE
Target year Brd	year students or above Number	of credits 2	Year/semesters	2020/First semester
Days and periods Fri.	1 Class style	Lecture	Language of instruction	Japanese
[Overview and p	ourpose of the course]			
	e most important lattice defe ies of crystalline materials. I ty will be lectured.			
[Course objective	/es]			
	elp students to acquire fund			
ways to understand	mechanical properties of cr	ystailine materials t	ased on dislocatio	n theory.
[Course schedu	le and contents]			
	dislocations [1 week]:			
	city theory [5 weeks]			
(3) Elastic propertie (4) Motion of disloc	es of dislocations [2 weeks]			
(5) Force on dislocation				
(6) Feedback [1 we				
[Course require	ments]			
None				
[Evaluation met	hods and policy]			
- Evaluation will be b	based on one (or two) writte	n examination(s). A	ttendance and dail	y reports may be
considered in gradi	ng determination.			
[Textbooks]				
	will be provided during the	lecture		
	and be provided during the	loculo:		
[References, etc	.]			
(Reference bo	-			
鈴木秀次『転位諸	☆入門』(アグネ)ISBN:			
	the Theory of Dislocation			
	the 『Theory of Dislocation			25
	物理学序論』(コロナ)IS 著 『材料力学の基礎』(
木田夜心[はか]共	日『忉朴わ子の基礎』(*ロ/34(R日) ISDIN:450	5054057	
			Continue to 結	晶物性学(材エネ)(2)↓↓↓

結晶物性学(材エネ)(2)

Course number U-ENG25 35036 LJ76 U-ENG25 35036 L								U-ENG25 3	35036 LJ75	
Course title (and course title in English)		理化学(J l Chemistr		aterials		Instructor's name, job t and departi of affiliation	itle, ment	Graduate School of Engineering Professor,TAKAGI IKUJI Graduate School of Engineering Associate Professor,TAISHI KOBAYASH		
Target year Brd year students or above Number of credits 2 Year/semesters 2020/Second semesters										
Days and perio	ods Wed.	.2 0	Class	style	Lecture	,		Language of instruction	Japanese	
[Overview	and pu	urpose of	f the c	ourse]						
This course and soundne									as production of fuel	
[Course o	bjective	es]								
The goal of for instance								tors in terms	of physical chemistry,	
[Course s	chedule	e and cor	ntents]						
spent fuel, ti (2) Isotope s Explain the work units, (3) Reaction Provide an C determinatic (4) Soundhe Outline the e influence of (5) Nuclear Explain the explain the p well as the r (6) Material Discuss the material pro (7) Oxides a	reatment separatio principle enrichme kinetics overview on metho ss of ato structure radiation r dealing fusion re structure productic adioactiv s and rad radiation perties a nd atomi behavior	and dispose n and concesses ses (gascousses ses (gascousses) of thermo of starmo ds, along v mic reactor of atomic n injury an g with thesse eactor fuel of nuclean on and perr vation of st liation, 2 c of atomic n dradiatic ic fuel, 2 c of atomic c of atomic a of atomic n dradiatic c of atomic learning at	sal of ra centratia s diffusie of isc dynam with the r mater reactor d corro e pheno and ma r fusion meatior tructura lasses a proble on. lasses fuel an tainmei	adioactive on, 2 clas ion proce stopes suc- ics and re- influence ials, 2 clas is from th ssion on tl omena. tterials, 3 n reactors n leakage ell material em comm- ad fission nt, 1 class	e waste) ses ss, centr ch as ura eaction k e of tem asses he sound classes from the l. non to all product	ifugal sepa nium. inetics and perature. ctives of m ctives of ma e perspectivy drogen iso nuclear er s in reactor	ration p explain naterials iterials, wes of n otopes t nergy m rs using	process) and n order of rea s and cross-s- as well as th naterials and hat fuel nucl naterials and	nd reprocessing of methods (separative action and rate constant ections and explain the e causes of and cross-sections and ear fusion reactors, as explain the influence of ntial and phase	

[Study outside of class (preparation and review)]	
To review contents covered in the previous lecture.	None
	[Evaluation
(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.	Grading met Grade is base [Grading crit Must score 6 60 or above: 59 or below: [Textbooks]
	No additional
	[Reference
	(Referen M. Benedict ISBN:007004 Atkins 『ア
	[Study out
	As needed, pr
	(Other info
	Lecture is giv
	*Please visit
	[Courses d
	(1) Category A course with
	(2) Details of
	(3) Details of

equirements] on methods and policy]

材料物理化学(原)(2)

ethod] sed on one written examination.

iterion] 60 or above out of 100 on the written examination : pass : fail

(s] al. Materials will be distributed in class.

es, etc.]

nce books) ct, T. H. Pigford and H. W. Levi 『Nuclear Chemical Engineering, 2nd Ed.』(McGraw-Hill) 045313 アトキンス物理化学 第10版』(東京化学同人)ISBN:9784807909087

tside of class (preparation and review)]

practice exercises will be conducted in class, so please review after class.

formation (office hours, etc.))

iven in Japanese.

t KULASIS to find out about office hours.

delivered by instructors with practical work experience]

th practical content delivered by instructors with practical work experience

of instructors' practical work experience related to the course

of practical classes delivered based on instructors' practical work experience

Course nu	umber	U-ENG	25 350	36 LJ76	U-ENC	325	35036	LJ62	U-ENG25 3	5036 LJ75
Course title (and course title in English)		理化学(エ 日Chemistry		aterials	1	nam and	ructor's ne, job ti departn ffiliation	nent		hool of Energy Scienc RATOU TETSUJI
Target yea	r Brd	ear students or	above N	lumber	of credi	ts	2	Year	/semesters	2020/Second semest
Days and perio	ods Wed	.2 C	lass	style	Lecture				Language of instruction	Japanese
lectures focu	discusse is on the	s physical c rmodynami	chemis ics, sol	try in rela	emistry, e	elec	trochen	nistry,	the sciences t	cessing. To do so, that serve as the basis sion protection, etc.
[Course o	bjectiv	es]				_				
constant from 5. Determine 6. Consider 7. Consider 8. Consider [Course s Fundamenta	g a-pH ci a-pH dia imple re m exper e activate electrod corrosic corrosic chedul Ils of chan n is mac	iagrams and action rate e iment result ion energy i e kinetics us n in light of n in light of e and con emical them le of the bas	d phase- phase- equations. in relations in relations in relations f equili f kinetions if kineti	e-pH diag pH diagr ons in dif tion to re- te Butler- brium the tic theory amics (2 ns of Gib	ams. ferential a action rat Volmer e eory (Pot (Evans d classes)	te te equa tent iagi	emperat ation. ial-pH o ram, mi	ure de liagrai xed po	pendence from n). stential model	ne the reaction rate m an Arrhenius plot. l).
	cuss aci	1-base react	tions, c	oxidation	-reductio	n re	actions			ectrochemistry, which ion and corrosion
	is made	of chemica	al react	ion rate,						rface processes, which ion and corrosion
Corrosion (3 Lectures wil			m theo	ry and ki	netics of	me	tal corre	osion.		
Feedback cl	ass (1 cl	ass)								 物理化学(エネ)(2)↓↓

Course title (and course title in English)			U-EI	Instructor's name, job ti and departn of affiliation	tle, nent		hool of Engineering AWAI JIYUN
Target year Brd y	ear students or a	above Number of	of cred	its 2	Yea	r/semesters	2020/First semester
Days and periods Mon.	2 C	lass style	Lecture		-	Language of instruction	Japanese
[Overview and pu	Irpose of	the course]					
The fundamentals of are given.	transport p	henomena for tl	he engin	eers and/or	resea	rchers related	to physical engineerir
[Course objective	es]						
To be able to apply the phenomena.	he fundame	ental equations of	of therm	al and mass	s trans	port studied ir	the class to real
[Course schedule	and con	tentsl					
numerical method.					rier ex		lace transform, and
numerical method. Conservation rules,1 Molecular kinetics,1 Heat conduction of c 2 dimensional heat c Green function,2tim Hydrodynamics,2tim Boundary layer,1tim Electromagnetic radi Achievement check,	time,Fourie time,Maxw ylinder and onduction, I es,Green fun es,Navier S e, ation, I time I time,Learn	r#039s law, Ste ell#039s theorr, sphere, 1 time, H time, 2 dimension nction. Relation Stokes equation.	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylin blace equati n Schroedin	n: n. ndrical ion. nger ed	pansion, Lapl l and sperical quation and di	coordinates.
numerical method. Conservation rules, I Molecular kinetics, I Heat conduction of c Green function, 2time Hydrodynamics, 2tim Boundary layer, Itim Electromagnetic radi Achievement check, [Course requirem	time,Fourie time,Maxw ylinder and onduction, I es,Green fun es,Navier S e, ation, I time I time,Learn	r#039s law, Ste ell#039s theorr, sphere, 1 time, H time, 2 dimension nction. Relation Stokes equation.	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylin blace equati n Schroedin	n: n. ndrical ion. nger ed	pansion, Lapl l and sperical quation and di	coordinates.
numerical method. Conservation rules,1 Molecular kinetics,1 Heat conduction of c 2 dimensional heat c Green function,2tim Hydrodynamics,2tim Boundary layer,1tim Electromagnetic radi Achievement check,	time,Fourie time,Maxw ylinder and onduction, I es,Green fun es,Navier S e, ation, I time I time,Learn	r#039s law, Ste ell#039s theorr, sphere, 1 time, H time, 2 dimension nction. Relation Stokes equation.	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylin blace equati n Schroedin	n: n. ndrical ion. nger ed	pansion, Lapl l and sperical quation and di	coordinates.
numerical method., I Conservation rules, I Molecular kinetics, I Heat conduction of c Green function, 2time Hydrodynamics, 2tim Boundary Jayer, Itim Electromagnetic radi Achievement check, [Course requirem None [Evaluation meth]	time,Fourie time,Maxw ylinder and onduction,1 ss,Green fuu ss,Navier S e, ation,1 time time,Learn hents] ods and p	r#039s law, Stee ell#039s theorr, sphere, ltime, F time, 2 dimensis nection. Relation stokes equation.	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylin blace equati n Schroedin	n: n. ndrical ion. nger ed	pansion, Lapl l and sperical quation and di	coordinates.
numerical method. Conservation rules,1 Molecular kinetics, 1 Heat conduction of c 2 dimensional heat c Green function,2tim Hydrodynamics,2tim Boundary layer,1tim Boundary layer,1tim Electromagnetic radi Achievement check, [Course requirem None	time,Fourie time,Maxw ylinder and onduction,1 ss,Green fuu ss,Navier S e, ation,1 time time,Learn hents] ods and p	r#039s law, Stee ell#039s theorr, sphere, ltime, F time, 2 dimensis nection. Relation stokes equation.	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylin blace equati n Schroedin	n: n. ndrical ion. nger ed	pansion, Lapl l and sperical quation and di	coordinates.
numerical nethod. Conservation rules,1 Molecular kinetics, 1 Heat conduction of c Green function,2time Hydrodynamics,2tim Boundary Jayer, 1tim Electromagnetic radi Achievement check, [Course requirem None [Evaluation meth Assignment and writ [Textbooks]	time,Fourie time,Maxw ylinder and onduction,1 s,Green fu ses,Navier S e, ation,1time time,Learr hents] ods and p ten examin	r#039s law, Ste ell#039s theorr, sphere,1time,Fi time,2 dimensi time,2 dimensi ti	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylii olace equati n Schroedin oblems thre	n. ndrical ion. nger ec	pansion, Lapi l and sperical quation and di ractical exerc	coordinates.
numerical nethod. Conservation rules,1 Molecular kinetics, 1 Heat conduction of c Green function,2time Hydrodynamics,2tim Boundary Jayer, 1tim Electromagnetic radi Achievement check, [Course requirem None [Evaluation meth Assignment and writ [Textbooks]	time,Fourie time,Fourie time,Maxw ylinder and onduction, 1 se,Green fuu ses,Navier S e, ation,1time ation,1time ation,1time time,Learr nents] ods and p ten examin • 化学工学	r#039s law, Ste ell#039s theorr, sphere,1time,Fi time,2 dimensi time,2 dimensi ti	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylii olace equati n Schroedin oblems thre	n. ndrical ion. nger ec	pansion, Lapi l and sperical quation and di ractical exerc	coordinates. iffusion equation. ises.
numerical method. Conservation rules,1 Molecular kinetics,1 Heat conduction of c 2 dimensional heat c Green function,2tim Hydrodynamics,2tim Boundary layer,1tim Boundary layer,1tim Correst requirem None [Evaluation meth Assignment and writ [Textbooks] 河合者:「物理工学	time,Fourie time,Maxw ylinder and onduction,I ss,Green fui es,Navier S e, ation,Itime I time,Learn hents] ods and p ten examina · 化学工学	r#039s law, Ste ell#039s theorr, sphere,1time,Fi time,2 dimensi time,2 dimensi ti	ady hea leat tran onal Lap betwee	ved by Fou t conductio sfer of cylii olace equati n Schroedin oblems thre	n. ndrical ion. nger ec	pansion, Lapi l and sperical quation and di ractical exerc	coordinates. iffusion equation. ises.

材料物理化学(エネ)(2)

Via questions and answer using the study support service (PandA), students will gain a deeper understanding of the contents of this course.

[Course requirements]

tudents are recommended to have finished the course Energy and Material Thermochemistry I.

[Evaluation methods and policy]

Grading will be performed in principle using scores on regular tests. Consideration may also be given to exercises, quizzes, and reports assigned in classes.

[Textbooks]

Materials will be distributed during class or using the student support service (PandA).

[References, etc.]

(Reference books) 『アトキンス物理化学』(東京化学同人)

[Study outside of class (preparation and review)]

Notification will be made via the study support service (PandA). For each week' s class, class contents and quiz answers will be posted on the study support service (PandA). Students are requested to review and gain a sufficient understanding of these before each next class period.

(Other information (office hours, etc.))

Problem-solving type assignments will be designated as necessary using practice exercises as well as the study support service (PandA). Please note also that a portion of course contents may be omitted, or additional content may be added, depending on the progress of the course during each specific academic year.

*Please visit KULASIS to find out about office hours.

熱及び物質移動(材)(2)

(Related URLs)

((50370) http://www.process.mtl.kyoto-u.ac.jp/)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours. 土面新

										未更新
Course nu	umber	U-EN	325 3	5037 LJ75	U-EN	G25	35037	LJ57		
Course title and course itle in English)		び物質移動 and Mass Ti				nan and	tructor's ne, job ti I departn Iffiliation	nent	Associate Profe Graduate Scl	hool of Energy Science ssor,OKUMURA HIDEYUK hool of Energy Science GAWA TAKASHI
arget yea	r 3	rd year students	or above	Number	of cred	its	2	Yea	r/semesters	2020/First semester
Days and perio	ods M	on.2	Clas	s style	Lectur	e			Language of instruction	Japanese
[Overview	and	purpose o	f the	course]						
· · · · · · · · · · · · · · · · · · ·	h : e e é									
[Course o	bject	ivesj								
-	cnea	ule and co	nten	isj						
2times, 2times.										
2times, 3times.										
2times.										
2times, 2times.										
3times.										
1time.										
runie,										
[Course re	equir	ements]								
None										
[Evaluatio	n me	thods and	poli	cy]						
[Textbook	·01									
LIEXIDOOK	sj									
(D. (_							
[Referenc		-								
(Referer	nce b	ooks)								
[Study ou	tside	of class (orepa	ration and	d revie	w)]				
(Other in	form	ation (offic	e ho	urs, etc.))						
		ASIS to fine			hours					

									未更新
Course nun	nber	U-ENO	G25 35041 L	J52 U-EN	IG25 3	35041	LJ53		
Course title (and course title in F English)			(原) Particle Inter	actions	name and d	uctor's e, job tit departm iliation	nent		hool of Engineering JTOU MANABU
Target year	Brd ye	ar students o	r above Num l	ber of crea	lits 2	2	Yea	r/semesters	2020/Second semester
Days and period	s Fri.3		Class style	e Lectur	e			Language of instruction	Japanese
[Overview a	and pu	rpose o	f the cours	e]					
[Course ob]	jective	s]				_			
[Course sch	hedule	and co	ntents]						
,2times,									
,4times, .2times.									
,2times, .2times.									
.2times,									
,2times,									
. 1 times.									
,,									
[Course rec	quirem	ents]							
None									
TT									
[Evaluation	meth	ods and	policy]						
[Textbooks]]								
[References	s, etc.]								
Referenc	e boo	ks)							
[Study outs	ide of	class (p	reparation	and revie	w)]		_		
• •			•		/-				
(Other info	rmatio	on (offic	e hours, et	c.))		_			
*Please visit H									

Course number	U-ENG25 350	040 LJ77 U-EN	G25 35040 I	LJ59	U-ENG25 3	5040 LJ52
Course title (and course title in English)	マ物理学(原宇 Physics)	Instructor's name, job tit and departm of affiliation			ool of Engineering RAKAMI SADAYOSHI
Target year Brd y	ear students or above	Number of cred	ts 2	Year/s	semesters	2020/Second semester
Days and periods Tue.2	2 Class	style Lecture			Language of instruction	Japanese
[Overview and pu	•					
plasma, magnetohyd	rodynamics, plas	a universal state of ma waves and trar	f high-temp isport pheno	erature omena a	matters, bas are explained	ic equation describing 1.
[Course objective						
to understand basic I	properties of plass	mas and learn fund	lamental me	ethod o	f analysis	
[Course schedule	e and contents]				
Basic equations,2tim Equilibrium and stab Plasma waves,2time Wave-particle intera Transport phenomen Gas discharge,1time Nuclear fusion,1time Confirmation of ach	bility, l time, s, ction, l time, a, l time, , e,					
[Course requiren	nents]					
Basic knowledges of	electromagnetis	m, statistical physi	cs, fluid dy	namics	and atomic	physics are expected.
[Evaluation meth	ods and policy	/]				
semester-end examin	nation and reports	;				
[Textbooks]						
Hand out will be dis	tributed					
[References, etc.]					
(Reference boo	oks)					
[Study outside of	f class (prepara	ation and review	v)]			
(Other informati	on (office hour	's. etc.))				
*Please visit KULA						
	SIS to find out ab	out office hours.				
Thease visit from	SIS to find out ab	out office hours.				

Course number								
oodi se number	U-ENG25 3	5045 LJ52	U-ENG2	25 35045	LJ77			
Course title (and course title in English)			na	structor's ame, job ti nd departn f affiliation	nent		nool of Engineering KATA SHIGERU	
Target year Brd y	ear students or above	Number	of credits	5 2	Yea	/semesters	2020/First semester	
Days and periods Tue.2	2 Class	s style	Lecture			Language of instruction	Japanese	
[Overview and pu Dynamics of high sp In this course, one-d typical phenomena c	eed gas flows is limensional and	s treated on quasi one-	dimension	al flows a			pressible inviscid flui d, in order to show	
[Course objective	-							
To learn/understand		*	c to compr	essible fl	uid flo	WS		
4. Propagation of fin	in							
 Shock tube proble From one-dimensi [Course requirem] 	ave (1 times) m (3 time) Ri onal to two-dim	Rankine-H iemann pro nensional fl	Iugoniot re blem, Refl low (3 time	lation, et ection an es) Obl	c. d defle ique S	ection of wave	es	
6. Shock tube proble 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth	ave (1 times) m (3 time) Ri onal to two-din nents] emental Calculu ods and polic	Rankine-H iemann pro nensional fl us (A,B, I,I	Iugoniot re blem, Refl low (3 time	lation, et ection an es) Obl	c. d defle ique S	ection of wave	es	
 Standing Shock w. Shock tube proble From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in 	ave (1 times) m (3 time) Ri onal to two-din nents] emental Calculu ods and polic	Rankine-H iemann pro nensional fl us (A,B, I,I	Iugoniot re blem, Refl low (3 time	lation, et ection an es) Obl	c. d defle ique S	ection of wave	es	
6. Shock tube proble 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks]	ave (1 [°] times) R m (3 time) R onal to two-din nents] emental Calculu ods and polic n principle.	Rankine-H iemann pro nensional fl us (A,B, I,I	lugoniot re blem, Refl low (3 time I), Linear A	ection an ection an es) Obl Algebra (c. d defle ique S A,B)	ection of wave hock, Prandtl	es	
6. Shock tube proble 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks] H. M. Liepmann and [References, etc.]	ave (1 [°] times) Ri m (3 time) Ri onal to two-dim hents] emental Calculu ods and polic n principle.	Rankine-H iemann pro nensional fl us (A,B, I,I	lugoniot re blem, Refl low (3 time I), Linear A	ection an ection an es) Obl Algebra (c. d defle ique S A,B)	ection of wave hock, Prandtl	es Meyer fan, etc.	
6. Shock tube proble. 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks] H. M. Liepmann and [References, etc. , (Reference boo	ave (1 [°] times) Ri onal to two-din nents] emental Calculu ods and polic A. Roshko ^T E] oks)	Rankine-Fi iemann pro nensional fl us (A,B, I,I cy]	lugoniot re Iblem, Refl low (3 time I), Linear A	lation, etc ection an es) Obl Algebra (nics] (1	c. d defle ique S A,B) Dover	ection of wave hock, Prandtl	es -Meyer fan, etc. 	
6. Shock tube proble. 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks] H. M. Liepmann and [References, etc. , (Reference boo	ave (1 [°] times) Ri onal to two-din vents] emental Calculu ods and polic n principle. A. Roshko "F b b ks) "Modern Comp	Rankine-E iemann pro nensional fl us (A,B, I,I :y] Elements of pressible Flo	lugoniot re blem, Refl low (3 time I), Linear 4 F Gasdynan	lation, etc ection an es) Obl Algebra (nics() .)(M	c. d defle ique S A,B) Dover	ection of wave hock, Prandtl	es -Meyer fan, etc. 	
6. Shock tube proble 7. From one-dimensi [Course requirent Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks] H. M. Liepmann and [References, etc.] J. D. Anderson, Jr.	ave (1 [°] times) Ri onal to two-dim nents] emental Calculu ods and polic n principle. A. Roshko "E] bks) "Modern Comp c class (prepa	Rankine-Fi iemann pro nensional fl us (A,B, I,I :y] Elements of pressible Fle iration and	lugoniot re blem, Refl low (3 time I), Linear <i>1</i> f Gasdynan ow (2nd ed d review)	lation, etc ection an ess) Obl Algebra (nics_ (1 1.)_ (M	c. d defli ique S A,B)	ection of wave hock, Prandtl Publications) -Hill) ISBN	es -Meyer fan, etc. 	
6. Shock tube proble 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks] H. M. Liepmann and [References, etc.] (Reference boo J. D. Anderson, Jr. [Study outside of	ave (1 [°] times) Ri onal to two-dim nents] emental Calculu ods and polic n principle. A. Roshko "E] bks) "Modern Comp i class (prepa d to read the tex	Rankine-F: iemann pro- nensional fl us (A,B, I,I :y] Elements of pressible Flo rration and ctbook by th	lugoniot re blem, Refl low (3 time I), Linear <i>1</i> f Gasdynan ow (2nd ed d review)	lation, etc ection an ess) Obl Algebra (nics_ (1 1.)_ (M	c. d defli ique S A,B)	ection of wave hock, Prandtl Publications) -Hill) ISBN	es -Meyer fan, etc. 	
6. Shock tube proble 7. From one-dimensi [Course requirem Fluid dynamics 1, El [Evaluation meth By the final exam., in [Textbooks] H. M. Liepmann and [References, etc.] (Reference boo J. D. Anderson, Jr. [Study outside of Students are expected	ave (1 [°] times) Ri onal to two-din nents] emental Calculu ods and polic n principle. A. Roshko TE Modern Comp f class (prepa d to read the tex on (office hoo er of topics may	Rankine-Fi iemann prorenensional fl us (A,B, I,I 2y] Elements of pressible Fl aration and attook by th urs, etc.)) y change, d	lugonioi re blem, Refl low (3 time II), Linear A Gasdynan ow (2nd ed d review) hemselves	lation, etc ection an ess) Obl Algebra (nics] (1 1.)] (M 1 in accord	c. d defla ique S A,B) Dover	ection of wave hock, Prandtl Publications) -Hill) ISBN vith the progr	es -Meyer fan, etc. 	

											未更新
Course nu	umb	er	U-EN	G25 3	5046 LJ52	U-EN	G25	35046	LJ77		
Course title (and course title in English)					atistical Me	chanics	nan and	tructor's ne, job ti I departn Iffiliation	nent		hool of Engineering RIGUCHI KOUJI
Target yea	r	3rd y	ear students	or above	Number	of cred	lits	2	Year	r/semesters	2020/First semester
Days and perio					s style	Lectur	e			Language of instruction	Japanese
[Overview	an	id pi	irpose	of the	course]						
[Course o	bje	ctive	es]								
[Course s	che	dule	e and co	onten	ts]						
, 2 times,					•						
, 4 times,											
, 3 times, , 2 times,											
, 2 times, , 4 times,											
[Course re	equ	iren	nents]								
None											
[Evaluatio	n n	neth	ods and	l poli	cy]						
[Textbook	s]										
	-										
[Referenc	es,	etc.	1								
Referen			-								
									,	Continue to 熬	「統計力学」(字) (2)↓↓↓

Course title (and course title in English)	空気力 Aerodyr				Instructor's name, job title, and department of affiliation		Graduate School of Engineering Professor, TAKATA SHIGERU	
Target yea	r Brd ye	ear students or ab	ove Number	of cred	its 2	Year	/semesters	2020/Second semest
Days and perio	ods Fri.2	Cla	ass style	Lecture	,		Language of instruction	Japanese
[Overview	and pu	rpose of t	he course]					
compressible	e fluid fl	ows and aero		es acting	g on the bod	lies in		imensional inviscid modern approach to
[Course o	bjective	es]						
To learn/ un flight.	derstand	the fundame	ental issues of	two-din	nensional co	ompres	sible gas flow	vs related to high spee
[Course s	chedule	and conte	ents]					
 Non-isent Small per Steady tw 	ropic flo turbation o-dimen	wave theory w and Mroco theory (3tin sional flow a	and Interacti	on of ob 1time) al flow, d of char	- Bow shoc Similarity r acteristics (s (2tin k, Sho ules, e (3time	nes) ckExpansion tc. s)	n wave interaction, etc
 Non-isent Small per Steady tw Kinetic th 	ropic flo turbation o-dimens eory of g	wave theory w and Mroco theory (3tin sional flow a gases (4times	y and Interacti co's theorem (nes) Potenti and the metho	ion of ob 1time) ial flow, d of char listributio	lique shock - Bow shock Similarity r racteristics (on function	s (2tin k, Sho ules, e (3time: , Boltz	nes) ckExpansion (tc. s) mann equatio	on, etc.
 Non-isent Small per Steady tw Kinetic th [Course refluid dynamic 	ropic flo turbation ro-dimension eory of g equirem nics 1,2, (wave theory w and Mroco theory (3tin sional flow a gases (4times	y and Interacti co's theorem (nes) Potenti and the methoo s) velocity co s, Elemental C	ion of ob 1time) ial flow, d of char listributio	lique shock - Bow shock Similarity r racteristics (on function	s (2tin k, Sho ules, e (3time: , Boltz	nes) ckExpansion (tc. s) mann equatio	on, etc.
 Non-isent Small per Steady tw Kinetic th [Course refluid dynamic 	ropic flo turbation to-dimen- eory of g equirem nics 1,2, 0	wave theory w and Mroce theory (3tim sional flow a gases (4times nents] Gasdynamics ods and po	y and Interacti co's theorem (nes) Potenti and the methoo s) velocity co s, Elemental C	ion of ob 1time) ial flow, d of char listributio	lique shock - Bow shock Similarity r racteristics (on function	s (2tin k, Sho ules, e (3time: , Boltz	nes) ckExpansion (tc. s) mann equatio	on, etc.
 Non-isent Small per Steady tw Kinetic th [Course refluid dynamics] 	ropic flo turbation o-dimen- eeory of g equirem tics 1,2, 0 n metho exam., ir	wave theory w and Mroce theory (3tim sional flow a gases (4times nents] Gasdynamics ods and po	y and Interacti co's theorem (nes) Potenti and the methoo s) velocity co s, Elemental C	ion of ob 1time) ial flow, d of char listributio	lique shock - Bow shock Similarity r racteristics (on function	s (2tin k, Sho ules, e (3time: , Boltz	nes) ckExpansion (tc. s) mann equatio	on, etc.
 Non-isent Small per Steady tw Kinetic th [Course refluid dynam] [Evaluatio] By the final [Textbook] 	equirem ics 1,2,0	wave theory w and Mroce theory (3tim sional flow a gases (4times nents] Gasdynamice ods and po a principle.	v and Interacti co's theorem (nes) Potentii and the methous s) velocity co s, Elemental Co blicy]	ion of ob 1time) ial flow, d of char listribution Calculus	lique shock - Bow shoc Similarity r acteristics (on function (A,B, I,II),	s (2tin k, Sho ules, e (3time: , Boltz Linear	res) ck-Expansion tc. s) mann equatio	on, etc.
 Non-isent Small per Steady tw Kinetic th [Course refluid dynam] [Evaluatio] By the final [Textbook] 	equirem its 1,2, 0 n methor nann and	wave theory w and Mroccwave (3tin sional flow a gases (4times ods and po a principle. A. Roshko	v and Interacti co's theorem (nes) Potentii and the methous s) velocity co s, Elemental Co blicy]	ion of ob 1time) ial flow, d of char listribution Calculus	lique shock - Bow shoc Similarity r acteristics (on function (A,B, I,II),	s (2tin k, Sho ules, e (3time: , Boltz Linear	res) ck-Expansion tc. s) mann equatio	n, etc. B)
3. Non-isent 4. Small per 5. Steady two 6. Kinetic th [Course re Fluid dynam [Evaluatio By the final [Textbook H. M. Liepn [Referenc (Referen	equirem and the second	wave theory w and Mroceward sional flow a gases (4times tents] Gasdynamic: ods and pc n principle. A. Roshko] ks)	v and Interacti co's theorem (nes) Potentii and the methous s) velocity co s, Elemental Co blicy]	f Gasdyn	lique shock Bow shoc Similarity r acteristics (on function (A,B, I,II), amics(s (2tin k, Shouules, e (3time: , Boltz Linear	nes) ckExpansion tc. s) mann equatio Algebra (A,F	n, etc. 3) 1SBN:0486419630
3. Non-isent 4. Small per 5. Steady tw 6. Kinetic th [Course re Fluid dynam [Evaluatio By the final [Textbook H. M. Liepn [Referenc (Referenc J. D. Anders	equirem dics 1,2, (on methorexample) mann and es, etc.] nce boo	wave theory w and Mroce theory (3times sional flow a gases (4times Gasdynamic: Ods and po a principle. A. Roshko A. Roshko Modern Co	<pre>and Interactic vectors theorem (ness) -= Potentine ness) -= Potentine s, i = Potentine s, Elemental C blicy] [Elements of [Elements [El</pre>	ion of ob 1time)	lique shock Bow shoc's Similarity ra acteristics on function (A,B, I,II), aamics(ed.),(M	s (2tin k, Shouules, e (3time: , Boltz Linear	nes) ckExpansion tc. s) mann equatio Algebra (A,F	n, etc. 3) 1SBN:0486419630
3. Non-isent 4. Small per 5. Steady tw 6. Kinetic th [Course re Fluid dynam [Evaluatio By the final [Textbook H. M. Liepn [Referenc (Referenc J. D. Anders [Study ou]	equirem its] es, etc.] tside of tside of	wave theory w and Mrocew theory (3times asses (4times cods and pc a principle. A. Roshko A. Roshko ks) Modern Co	y and Interactic co's theorem (nes) Potentines) nes) Potentines s, Elemental C blicy] "Elements of mpressible FI paration an	ion of ob 1time)	lique shock Bow shoc: Similarity r acteristics (on function (A,B, I,II), annics] (ed.),] (M w]]	s (2tin k, Shoo ules, e (3time: , Boltz Linear	nes) kExpansion tc. s) mann equatio - Algebra (A,F Publications) Hill) ISBN:	n, etc. 3) 1SBN:0486419630
3. Non-isent 4. Small per 5. Steady two 6. Kinetic th [Course re Fluid dynam [Evaluatio By the final [Textbook H. M. Liepn [Referenc (Referenc J. D. Anders [Study ou Students are (Other int)	equirem acception of g equirem aics 1,2, 0 an meth- exam., in s] anann and es, etc.] acce boo son, Jr. (tside of expected formatio	wave theory w and Mroce theory (3 times sional flow a gases (4 times ents] Gasdynamic: ods and pc n principle. A. Roshko A. Roshko Modern Co class (pre d to read the on (office H	<pre>and Interactic states cos's theorem (ness) -= Potentine and the methon s, Elemental Co slicy] "Elements of mpressible Fl paration an textbook by t nours, etc.))</pre>	ion of ob (1time)	lique shock • Bow shoc Similarity ra (A,B, I,II), (A,B, I,II), aamics] (ed.)] (M w)] es in accord	s (2tin k, Shoe ules, e 30 time: , Boltz Linear Dover	nes) ckExpansion tc. s) mann equatio Algebra (A, J Publications) -Hill) ISBN: vith the progr	on, etc. 3) 1SBN:0486419630 :0071006656 ess of the class.
3. Non-isent 4. Small per 5. Steady two 6. Kinetic th [Course re Fluid dynam [Evaluatio By the final [Textbook H. M. Liepn [Referenc (Referenc J. D. Anders [Study ou Students are (Other int)	equirem acception of g equirem aics 1,2, 0 an meth- exam., in s] anann and es, etc.] acce boo son, Jr. (tside of expected formatio	wave theory w and Mroce theory (3 times sional flow a gases (4 times ents] Gasdynamic: ods and pc n principle. A. Roshko A. Roshko Modern Co class (pre d to read the on (office H	y and Interactic co's theorem (nes) Potentines) nes) Potentines s, Elemental C blicy] "Elements of mpressible FI paration an textbook by t	ion of ob (1time)	lique shock • Bow shoc Similarity ra (A,B, I,II), (A,B, I,II), aamics] (ed.)] (M w)] es in accord	s (2tin k, Shoe ules, e 30 time: , Boltz Linear Dover	nes) ckExpansion tc. s) mann equatio Algebra (A, J Publications) -Hill) ISBN: vith the progr	on, etc. 3) 1SBN:0486419630 :0071006656 ess of the class.

Courses delivered by instructors with practical work experience] 1) Category course with practical content delivered by instructors with practical work exp 2) Details of instructors' practical work experience related to the course	
Please visit KULASIS to find out about office hours. Courses delivered by instructors with practical work experience] () Category () course with practical content delivered by instructors with practical work exp (2) Details of instructors' practical work experience related to the course	
Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work exp 2) Details of instructors' practical work experience related to the course	
 Category course with practical content delivered by instructors with practical work exp Details of instructors' practical work experience related to the course 	
A course with practical content delivered by instructors with practical work exp 2) Details of instructors' practical work experience related to the course	
 Category A course with practical content delivered by instructors with practical work exp 2) Details of instructors' practical work experience related to the course Details of practical classes delivered based on instructors' practical work e 	
2) Details of instructors' practical work experience related to the course	rionaa
 Details of instructors' practical work experience related to the course Details of practical classes delivered based on instructors' practical work e 	enence
3) Details of practical classes delivered based on instructors' practical work e	
	vparianca
	xperience

											未更新
Course nu	ımb	er	U-ENO	325 3	5048 LJ77						
Course title (and course title in English)					pace Propu	lsion	nan and	structor's ame, job title, ad department affiliation			
Target yea	r	3rd ye	ar students o	r above	Number	of cred	its	2	Year	/semesters	2020/Second semester
Days and perio	ods N	Mon.1	1	Clas	s style	Lecture	e			Language of instruction	Japanese
[Overview	an	d pu	rpose o	f the	course]						
[Course o	bjeo	ctive	s]								
[Course s					ts]						
Propulsion F	und	amen	ntals,1tim	e,							
,3times, Ionized Gas	-s 11	ime									
Electromagn			nes.								
Equation of				ne,							
Atomic and											
Diffusion an						э,					
Ionized Gase				ices,2	times,						
Electric Proj	pulsi	ion,1t	time,								
,1time,											
[Course re	equi	irem	ents]								
Fluid Dynan	nics,	Gas	Dynamic	s, Th	ermodynam	nics, Ele	ctro	magneti	CS		
[Evaluatio	n m	netho	ods and	polie	су]						
[Textbook	s]										
[Reference	es,	etc.1	_			_	_	_			
Referen											
			- ,	d W.J	Larson, S	pace Pro	opul	sion An	alysis	and Design (McGraw-Hill, New
York, 1995)							î		•		
G.P. Sutton and O. Biblarz, Rocket Propulsion Elements, 8th ed. (John Wiley amp Sons, Hoboken, 2010) Continue to 推進基礎論(宇)(2)↓↓↓											

推進基礎論(宇)(2)

isbn{}{9780470080245};
 G.P. Sutton and O. Biblarz, Rocket Propulsion Elements, 7th ed. (Wiley, New York, 2001) isbn{}{0471326429};
 M. Mitchner and Ch.H. Kruger, Jr., Partially Ionized Gases (Wiley, New York, 1973) isbn{}{0471611727};
 F.F. Chen, Introduction to Plasma Physics and Controlled Fusion, 3rd ed. (Springer International Publishing Switzerland, Cham, 2016) isbn{}{9783319223087};

F.F. Chen, Introduction to Plasma Physics and Controlled Fusion, Vol. 1, Plasma Physics, 2nd ed. (Plenum, New York, 1984) isbn{} [9780306413322]; L.M. Biberman, V.S. Vorobev, and I.T. Yakubov, Kinetics of Nonequilibrium Low-Temperature Plasmas

L.M. bibernian, v.S. Vorobev, and r.F. Fakubov, Knetics of Nonequinibruin Low-Temperature Plasmas (Consultants Bureau, New York, 1987); R.O. Dendy ed., Plasma Physics: An Introductory Course (Cambridge University Press, London, 1993) isbn{} {0521433096}, (同, 1995) isbn{} {0521484529}; M.A. Lieberman and A.J. Lichtenberg, Principles of Plasma Discharges and Materials Processing (Wiley-Interscience, Hoboken, 2005) isbn{}{071720011}.

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

航空宇宙機力学(宇)(2)

[Evaluation methods and policy]

Evaluation depends on marks of examination and exercises

[Textbooks]

Instructed during class

[References, etc.]

(Reference books) D. Landau and E. M. Lifshitz 『Mechanics, Volume 1 (Course of Theoretical Physics)』 (Elsevier) ISBN:0750628960 Herbert Goldstein 『Classical Mechanics』 (Addison-Wesley) ISBN:0201657023 (international ed. ISBN 0321188977) Toda [Introductory course of physics 1 Mechanics] (Iwanami Shoten) ISBN:4000076418 (in Japanese) Koide 『Introductory course of physics 2 Analytical Mechanics 』 (Iwanami Shoten) ISBN:4000076426 Note - Information count of physics 10 Mathematics for physics (Iwanami Shoten) ISBN: 4000076507 (in Japanese)

[Study outside of class (preparation and review)] Learn the basic mechanics and mathematics for analytical mechanics.

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

Course nu	umber	U-EN	G25 3:	5049 LJ77						
Course title (and course title in English) 相关 (字) (字) Flight Dynamics of Aerospace Vehicle and department of affiliation affiliation									ofessor,AOI SHINYA nool of Engineering	
Target yea	r Brd	ear students	or above	Number	of cred	lits	2	Year	/semesters	2020/Second semester
Days and perio	ods Mon	.2	Class	s style	Lectur	e			Language of instruction	Japanese
[Overview and purpose of the course]										
Flight dynar	Flight dynamics of aerospace vehicles.									
[Course o	bjectiv	es]								
-		-	nanics	through fli	ght dyn:	amic	cs of aer	ospace	e vehicles.	
[Course s	chedul	e and co	ntent	s]						
 introductio coordinate: principle o rpinciple o rd'Alembert potential Lagrange e conservati Lagrange t Lagrange t Lagrange t angular rati pseudo con Rigid body 1 kinetic ene linear and inertia tens Euler Lagrange topics of a dAchievemen achievemen 	To understand analytical mechanics through flight dynamics of aerospace vehicles.									
[Course re Foundation of			mathe	matics						

Continue to 航空宇宙機力学 〔宇〕(2)↓↓↓

Course title (and course title in M English)		学(宇) ics of Sol	ids		1	Instructor's name, job ti and departr of affiliatior	tle, nent		nool of Engineering WA SHIROU
Target year	3rd ye	ear students o	or above	Number o	of credi	t s 2	Year	/semesters	2020/First semester
Days and period	Mon.	1	Class	s style	Lecture			Language of instruction	Japanese
[Overview a									nain topics in the
of stress and s mathematical	train, e analysi	quilibriur s of static	n equ defoi	ations, cons rmations in	titutive e elastic b	quations (odies. The	Hooke se subj	's law) are tre ects are impo	limensional expression ated together with rtant for the hanical/structural
[Course obj	ective	s]							
	analys	sis of soli	ds and	d structures.	. It is also	o the aim o	of this o	course to re-e	rain and fundamentals xamine the values of ewpoint.
[Course sch	edule	and co	ntent	ts]					
situations. Week 1 [Prelii Weeks 2-3 [Du Infinitesimal s Weeks 4-6 [St of stress comp Week 7-8 [Str Weeks 9-10 [I Compatibility] Weeks 11-13] equation; Stre: torsion; Torsic	ninarie eformat train; T ress an onents; ess-stra Fundam relation Two-d ss funct on of ba nciple o sy al exam	es] Basis v tion and s Transform d laws of ; Cauchy' sin relation ental equ n for strai imension tion in po rs of ellip of virtual unation/le	vecotr strain] ation motio s laws ons] H ations al pro lar co ptic cr work	s; Kronecke Description of strain co on] Stress vo s of motion; ooke's law; s of elasticit oblems of el. ordinates; S ross-section] Virtual dis	er's delta; n of moti mponent ector, Eu Equilibr Elastic n ty] Navie astic defo Stress con s splaceme	; Alternati on; Mater s; Princips ler's laws ium equat noduli; Vo r's equations] ocentrations nt; Princip	ng sym ial time al strain of moti ions; P igt exp igt exp ns; Pla Airy's a aroun	abol; Summat e derivative; C ns ion; Cauchy's trincipal stress oression une stress and stress function d a circular ho	ding to each year's ion convention Green-Lagrange strain; law; Transformation es and stress invariant plane strain; on; Biharmonic ole; Stress function for Principle of stationary

he enrolling students are expected to have knowledge in the Mechanics of Materials courses. Good nderstanding of calculus, linear algebra (eigenvalue problems) and vector analysis is also necessary. Evaluation methods and policy] irading is made based on the examination (85%) and the reports (15%). The total score of the examination and the reports is evaluated between 0 and 100 points (the pass mark is 60). Textbooks] extbooks are not assigned. The lecture is given in the blackboard style. References, etc.] (Reference books) . Inoue, "Fundamentals of elasticity" (Nikkan Kogyo) . Kobayashi and K. Kondo, "Elasticity" (Bailu-kan) or references written in English, students are advised to contact the instructor directly. Study outside of class (preparation and review)] ontents of "Mechanics of Materials" courses should be fully reviewed. Homeworks (reports) will be ssigned to review the lectures. (Other information (office hours, etc.)) ectures are given in a black-board style. Students are expected to take the notes to understand the ideas and hathematical derivations, and make questions regarding unclear points.	回体刀字(于) (2)	
nderstanding of calculus, linear algebra (eigenvalue problems) and vector analysis is also necessary. Evaluation methods and policy] irading is made based on the examination (85%) and the reports (15%). The total score of the examination and the reports is evaluated between 0 and 100 points (the pass mark is 60). Textbooks] extbooks are not assigned. The lecture is given in the blackboard style. References, etc.] (Reference books) . Inoue, "Fundamentals of elasticity" (Nikkan Kogyo) . Kobayashi and K. Kondo, "Elasticity" (Bailu-kan) or references written in English, students are advised to contact the instructor directly. Study outside of class (preparation and review)] ontents of "Mechanics of Materials" courses should be fully reviewed. Homeworks (reports) will be ssigned to review the lectures. (Other information (office hours, etc.)) ectures are given in a black-board style. Students are expected to take the notes to understand the ideas and hathematical derivations, and make questions regarding unclear points.	[Course requirements]	
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(Other information (office hours, etc.)) ectures are given in a black-board style. Students are expected to take the notes to understand the ideas and athematical derivations, and make questions regarding unclear points.	[Study outside of class (preparation and review)]	
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ectures are given in a black-board style. Students are expected to take the notes to understand the ideas and athematical derivations, and make questions regarding unclear points.	-	
hathematical derivations, and make questions regarding unclear points.	(Other information (office hours, etc.))	
Please visit KULASIS to find out about office hours.	Lectures are given in a black-board style. Students are expected to take the notes to und- mathematical derivations, and make questions regarding unclear points.	erstand the ideas and
	*Please visit KULASIS to find out about office hours.	

物理工学演習1(エネ)(2)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

Category
 A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

Course number	U-ENO	325 35054 SJ	177 U-EN	325 35054	SJ71		
Course title (and course title in English)		(エネ) neering Scien	ce l	Instructor's name, job ti and departn of affiliation	nent		oool of Energy Science IIYAMA TAKUJI
Target year Brd y	ear students o	or above Numb	er of cred	its 1	Year	/semesters	2020/First semester
Days and periods Mon		Class style		ır		Language of instruction	Japanese
[Overview and pu	urpose o	f the course	e]				
[Course objective	es]						
[Course schedule	e and co	ntents]					
,9times, .6times.							
[Course requiren							
None	ientsj						
[Evaluation meth	ods and	policy]					
[Textbooks]							
[!!!!!!!							
[References, etc. (Reference boo	-						
					_c	ontinue to 物理	工学演習 1 (エネ) (2)↓↓↓
						eand to mp	

											未更新
Course n	umbe	er	U-EN	G25 3	5054 SJ77	U-EN	G25	35054	SJ71		
Course title (and course title in English)					g Science 1		nam and	ructor's he, job ti departn ffiliation	nent	Assistant Pro Graduate Scl	hool of Engineering fessor,OGURE KENZOU hool of Engineering sor,MIYADERA TAKAYUKI
Target yea	r	3rd y	ear students of	or above	Number	of cred	its	1	Year	/semesters	2020/First semester
Days and peri	ods T	Tue.3	3,4	Clas	s style	Semina	ar			Language of instruction	Japanese
[Overview	/ and	d pı	urpose o	f the	course]						
[Course o	bjeo	ctive	es]				_				
					-						
[Course s				nten	ts]						
Linear algeb											
Linear diffe				times	,						
Laplace tran Confirmatio				in ctu	ly 1time						
Command	11 01	acm	ie vement	in stu	iy,ruine,						
[Course r	equi	irem	nents]								
differential	and i	nteg	gral, linear	algeb	ora						
[Evaluatio	on m	neth	ods and	poli	cy]						
exercises an	d rep	ports	ŝ								
[Textbook	(s]										
Prints are di	strib	uted	in the cla	ss.							
[Referenc			-								
(Refere	nce	boo	oks)								
[Study ou	tsid	e of	f class (p	orepa	ration and	d revie	w)]				
(Other in	forn	nati	on (offic	e ho	urs, etc.))						
*Please visi	t KU	LAS	SIS to find	l out a	ibout office	hours.					
	_	_		_			_		_		

										未更新
Course nu	umber	U-EN	G25 3	5054 SJ77	U-EN	G25	5 35054	SJ71		
Course title (and course title in English) 中理工学演習 1 (字) Exercise on Engineering Science 1					l	Instructor's name, job title, and department of affiliation			Part-time Lectu Part-time Le Part-time Le	
Farget yea	r Bro	l vear students	or above	Number	of cred	lits	1	Yea	r/semesters	2020/First semester
Days and perio				s style	Semin	_			Language of instruction	
[Overview				-	Joennin	u			Language of monopolog	Jupanese
[Course o	bjecti	ves]								
[Course s	chedı	ile and co	ontent	s]						
,5?6times, .5?6times,										
,2times,										
,1time,										
10										
[Course re None	equire	ementsj								
. tone										
[Evaluatio	on met	hods and	l polic	>y]						
[Textbook	(s]									
[Referenc	es, et	c.]								
(Refere	nce bo	ooks)								
[Study ou	tside	of class (prepa	ration an	d revie	w)]				
(Other in	forma	tion (offic	e hou	urs, etc.))						
*Please visit										

[Textbooks]		
	be provided in each topic.	
manuout win o	c provided in each topic.	
[References (Reference		
Introduced dur		
Study outsi	ide of class (preparation and review)]	
	ipposed to study the contents of each topic before the course.	
	rmation (office hours, etc.)) (ULASIS to find out about office hours.	
*Please visit K	ULASIS to find out about office nours.	

Course nu	umber	U-EN	G25 3	5055 SJ77	U-EN	G25 3	5055	SJ71			
Course title (and course title in English)			-	衣) g Science 2		name and d	ictor's , job til epartm iliation	nent	Professor,ISI Graduate Scl Professor,ISI Graduate Scl Professor,KA Graduate Scl Professor,IM Graduate Scl Moressor,IM	HIHARA nool of E HIYAMA nool of E AWANA nool of E SHIWA nool of E ATANI nool of E	nergy Science A TAKUJI nergy Science BE HIROSHI nergy Science YA YOSHIAKI nergy Science
Target yea	r Brd y	ear students o	or above	Number	of cred	its 1		Year	/semesters	2020/Se	econd semester
Days and peri	ods Tue.	2	Clas	s style	Semina	ar			Language of instruction	Japanes	e
[Overview	and pu	urpose o	f the	course]							
[Course o This class ai exercises.			ts to le	earn fundan	nental m	atters	in the	field	of energy scie	ence acqu	uire by solving
[Course s				ts]							
Thermal eng											
Hydrodynar			1								
Mechanics of Thermodyna			KS								
Physical Ch											
Crystallogra											
Summary, 1		(CORD)									
[Course re	equiren	nents]									
It is desirabl	e that stu	udents lea	rned t	he basis of	each top	oic.					
[Evaluatio	on meth	ods and	polic	cy]							
Evaluation v	vill be ba	ased on ac	tive p	participation	and ass	signm	ents.				
									Continue to 物理	工学演習 2	! (エネ) (2) ↓↓↓

								未更新
Course n	umber	U-ENG25 3	35055 SJ77	U-ENC	325 35055	SJ71		
Course title (and course title in English)		学演習 2 (原 se on Engineerir		2	Instructor's name, job ti and departr of affiliatior	itle, ment	ALL STAFF Graduate Scl Professor, YC Graduate Scl	hool of Engineering hool of Engineering DKOMINE TAKEHIKC hool of Engineering fessor,OGURE KENZOU
Target yea	r Brd y	year students or abov	Number	of credi	its 1	Yea	r/semesters	2020/Second semester
Days and peri	ods Tue.	.4,5 Clas	ss style	Semina	r		Language of instruction	Japanese
[Overview	and p	urpose of the	course]					
[Course o	bjectiv	es]						
[Course s	chedul	le and conten	nts]					
4times,			-					
,5times,								
,5times,								
,1time,								
<u> </u>								
[Course r	equirer	nents]						
None								
[Evaluation	on meth	hods and poli	cy]					
[Textbook	(e]			_				
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[Referenc	es, etc	1		_				
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ICturely and	40:do 0	f close (mass						
[Study ou	tside o	of class (prepa	aration an	la review	v)]			
(Other in	formati	ion (office ho	ours, etc.)))				
*Please visi	t KULA	SIS to find out	about office	e hours.				

Course title (and course Breglish) 物理工学術習 2 (学) Exercise on Engineering Science 2 Instructor's name, job title, and department Graduate School of Engineering ALL STAFF Target year Ind year students or abov Number of credits 1 Year/semesters 2020/Second semeste Days and periods Fri.3.4 Class style Seminar angaptitstudit Japanese [Overview and purpose of the course] Conduct lecture and exercise on aircraft and spacecraft design. Image of the down of aircraft design. [Course objectives] Understand the basis of aircraft/spacecraft systems and flight dynamics, and acquire a basic attitude toward aircraft/spacecraft design. Image of the course of aircraft and spacecraft (I week) Image of the course of aircraft design. [Course schedule and contents] Instruct of aircraft and spacecraft (I week) Image of the course of spacecraft development and effort in Japan History of aircraft development and effort in Japan History of spacecraft development and effort in Japan History of orbit of satellite aystem Summary of rocket system Summary of rocket system Spacecraft Spacecraft - Orbit of satellite and rocket systems [I week] Kepler motion Transfer of orbit Spacecraft - Orbit of satellite [I week] Kepler motion Spacecraft - Orbit of satellite [I week] Kepler motion Spacecraft - Design exercise [I or 2 weeks] Spacecraft - Design exercise [I or 2 weeks]	Course nu	umber	U-E	ENG25 35	5055 SJ77	U-ENC	25 35055	SJ71			
The year may be year maximum and preame of or	(and course title in				g Science 2		name, job ti and departn	nent	ALL STAFF		
[Overview and purpose of the course] Conduct lecture and exercise on aircraft and spacecraft design. [Course objectives] Understand the basis of aircraft/spacecraft systems and flight dynamics, and acquire a basic attitude toward aircraft/spacecraft design. [Course schedule and contents] 1. History of aircraft and spacecraft [1 week] History of aircraft development and effort in Japan History of spacecraft development and effort in Japan 2. Spacecraft - Summary of satellite and rocket systems [1 week] Summary of rocket system Supacecraft - Orbit of satellite [1 week] Kepler motion Transfer of orbit 4. Spacecraft - Principle of rocket propulsion [1 or 2 weeks] Thrust and effective exhaust velocity Specific impulse Ideal velocity increment 5. Spacecraft - Design exercise [1 or 2 weeks] Exercise on sizing of rocket specification 6. Aircraft - Summary of airplane system [1 week] Airplane shape Airplane shue Airplane subsystems Airplane engin	Target yea	r Bi	rd year stude	nts or above	Number	of credi	t s 1	Yea	r/semesters	2020/Sec	ond semester
Conduct lecture and exercise on aircraft and spacecraft design. [Course objectives] Understand the basis of aircraft/spacecraft systems and flight dynamics, and acquire a basic attitude toward aircraft/spacecraft design. [Course schedule and contents] 1. History of aircraft and spacecraft [1 week] History of aircraft development and effort in Japan History of spacecraft development and effort in Japan 2. Spacecraft - Summary of satellite and rocket systems [1 week] Summary of rocket system Summary of rocket propulsion [1 or 2 weeks] Thrust and effective exhaust velocity Specific impulse Ideal velocity increment 5. Spacecraft - Droiket system [1 week] Exercise on sizing of rocket system[1 or 2 weeks] Exercise on sizing of rocket system[1 week] Airplane shape Airplane sturcture Airplane subsystems Airplane engine 7. Aircraft - Airplane performance [2 or 3 weeks] Standard atmosphere Definition of velocity Aerodynamic characteristics	Days and perio	ods Fri	i.3,4	Class	style	Semina			Language of instruction	Japanese	
[Course objectives] Understand the basis of aircraft/spacecraft systems and flight dynamics, and acquire a basic attitude toward aircraft/spacecraft design. [Course schedule and contents] 1. History of aircraft and spacecraft [1 week] History of aircraft development and effort in Japan 2. Spacecraft - Summary of satellite and rocket systems [1 week] Summary of rocket system Summary of rocket system Summary of rocket system Summary of rocket system Summary of propulsion system of spacecraft 3. Spacecraft - Orbit of satellite [1 week] Kepler motion Transfer of orbit 4. Spacerraft - Principle of rocket propulsion [1 or 2 weeks] Thrust and effective exhaust velocity Specific impulse Ideal velocity increment 5. Spacecraft - Design exercise [1 or 2 weeks] Exercise on sizing of rocket specification 6. Aircraft - Summary of airplane system [1 week] Airplane shape Airplane shue Airplane engine 7. Aircraft - Airplane performance [2 or 3 weeks] Standard atmosphere Definition of velocity Acordynamic characteristics	[Overview	and	purpose	e of the	course]						
Understand the basis of aircraft/spacecraft systems and flight dynamics, and acquire a basic attitude toward aircraft/spacecraft design. [Course schedule and contents] 1. History of aircraft and spacecraft [1 week] History of aircraft development and effort in Japan History of spacecraft development and effort in Japan 2. Spacecraft - Summary of satellite and rocket systems [1 week] Summary of statellite system Summary of rocket system Summary of an ass component Multi-stage rocket Required velocity increment 5. Spacecraft - Design exercise [1 or 2 weeks] Exercise on sizing of rocket system[1 week] Airplane shape Airplane subsystems Airplane subsystems Airplane subsystems Airplane subsystems Airplane subsystems Airplane subsystems Airplane subsystems Airplane structure Airplane sperformance [2 or 3 weeks] Standard atmosphere Definition of velocity Aerodynamic characteristics	Conduct lec	ture ar	nd exercis	se on airc	raft and spa	acecraft o	lesign.				
aircraft/spacecraft design.	[Course o	bject	ives]								
Image: Contents image: Content imag	Understand	the ba	sis of airc	craft/spac	ecraft syste	ems and f	light dyna	mics, a	and acquire a l	basic attitu	de toward
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Major performances of airplane Continue to 物理工学演習2 (字) (2)↓↓	History of 2. Spacecraf Summary Summary 3. Spacecraf Kepler m Transfer of 4. Spacecraf Thrust an Specific i Ideal velo Multi-sta Required 5. Spacecraf Exercise (6. Aircraft - Airplane : Airplane :	f space f space f stat of roc of prot of or of t - Orl otion of orbit t - Prit d effeet mpuls scity auge rocl veloci t - De on sizi Summ shape shape atmost	ecraft dev mmary of ellite syste spulsion s bit of sate t nciple of and mass c ket ity increm sign exer- nag of roce nary of ai rre- stems ane perfor phere elocity haracteris ance	elopment satellite tem m system of illite [1 w rocket pr aust veloc componer nent cise [1 or ket specif rplane sy rmance [2 :tics	t and effort and rocket spacecraft eek] opulsion [1 ity tt 2 weeks] fication stem [1 we	in Japan systems or 2 wee	[1 week]				

										未更新
Course nu	umb	er U-EN	G25 3	5056 EJ71						
Course title (and course title in English)		或システム工 hanical and Sys			pratory 1	nan and	ructor's ne, job tit departm ffiliation	le, ient	Associate Prof Graduate Scl Assistant Profe Graduate Scl Associate Profe Graduate Scl Professor,IN Graduate Scl Associate Prof Graduate Scl Graduate Scl Graduate Scl	nool of Engineering ssor,NAKAJIMA KAORU nool of Engineering ssor,SAITOU MOTOHIRO nool of Engineering ssor,SHIMADA TAKAHIRO nool of Engineering OLE YASUHIRO OLE YASUHIRO foessor,FUII KEISUKE nool of Engineering sesor,SHIKAMA TAIICHI nool of Engineering UCHIYA TOSHIYUKI nool of Engineering tool of Engineering tool of Engineering
Farget yea	r	3rd year students	or above	Number o	of cred	its	1	Year	semesters	2020/First semester
Days and perio	ods V	Ved.4,5	Class	s style	Experi	men	t		Language of instruction	Japanese
Overview	and	d purpose o	of the	course]						*
,ltime, ,2times, ,2times, ,2times, ,2times, ,2times, ,1time, ,1time, ,2times,	che	dule and co	ontent	:s]						
[Course re None	equi	rements								
									ontinue to 機械ジ	えデム工学実験〒 (機) (2)↓↓↓

	e stability and controllability [1 week]
	lity and controllability
Center of gravity l	imits onal stability and controllability
Crosswind landing	
Trim at engine fail	
	e airworthiness [1 week]
Regulation of airpl	
Lessons learned fr	
	exercise [1 or 2 weeks]
Exercise on flight	test of airplane
* As part of the class	s, students may take a tour of facilities outside the university related to aircraft/spacecraft.
[Course requirem	ients]
Assumes students un	derstand the fundamentals of dynamics.
[Evaluation mether	ods and policy]
[Evaluation method]	
	ased on report (75%) and class performance (25%).
	performance includes the attendance at the class and the effort toward the exercise.
[Evaluation policy]	
	of understanding of aircraft/spacecraft systems and flight dynamics, and the degree of ude toward aircraft/spacecraft design.
mustery or subre unit	ado to ward anoraro spacoorar designi
[Textbooks]	
[Textbooks] Handouts will be dist	rributed.
	rributed.
Handouts will be dist	1
Handouts will be dist [References, etc.]] jks)
Handouts will be dist [References, etc.] (Reference boo] jks)
Handouts will be dist [References, etc.] (Reference boo Introduced during cla] jks)
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of] /k\$) ass
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to] bks) ass class (preparation and review)] o make reports outside of class time, which will be imposed during class.
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic] (ks) ass class (preparation and review)] make reports outside of class time, which will be imposed during class. on (office hours, etc.))
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic] bks) ass class (preparation and review)] o make reports outside of class time, which will be imposed during class.
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur] (ks) ass class (preparation and review)] make reports outside of class time, which will be imposed during class. on (office hours, etc.))
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur	Image: second
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur	Image: second
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur	Image: second
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur	Image: second
Handouts will be dist [References, etc.] (Reference boo Introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur	Image: second
Handouts will be dist [References, etc.] (Reference boo introduced during cla [Study outside of Students are likely to (Other informatic The contents and nur	Image: second

機械システム工学実験1(機)(2) [Evaluation methods and policy] [Textbooks]

[References, etc.] (Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

						未更新
Course number	U-ENG25 3	5056 EJ71				
(、 ステム工学実駅 cal and System Eng	錠1(機) gineering Laborator	Instructor's name, job ti and depart of affiliation	tle, A hent d	Associate Profe Graduate Sch Professor,TS Graduate Sch Assistant Profe Graduate Sch Assistant Professo Graduate Sch Associate Profes Graduate Sch Associate Profe Graduate Sch	tool of Engineering ssor,NAKAJIMA KAORU tool of Engineering UCHIYA TOSHIYUKI tool of Engineering sor,SAITOU MOTOHIRO tool of Engineering r,WAKABAYASHI HIDENOBU tool of Engineering ssor,SHIMADA TAKAHIRO tool of Engineering essor,SHIKAMA TAIICHI tool of Engineering DUE YASUHIRO
Farget year Brd	year students or above	Number of cr	edits 1	Year/	semesters	2020/Second semester
Days and periods Mor	.4,5 Clas	s style Exp	eriment		Language of instruction	Japanese
[Course objectiv	es]					
[Course schedul						
Basic knowledge or detection. Intrusion Detection based IDS by studyi issued from IDS and Intrusion Detection	the role of IDS by Signature-Ba ing open source d communication by Machine Lea earning algorithm Based on the exe	in network secu used IDS,5times, signature-based ns, and adding si urning,7times,Le ms and public da ercise, students p	rity and how n Learn the mec IDS and attack gnatures to det arn the method taset for bench resents their m	hanism hanism s, such ect atta of clas imarkin ethods	learning can of intrusion of as correspon cks. sifying norm g intrusion d	detection by signature- idence between alarms nal and malicious letection performance.
Course requirer	nentsl					

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____Continue to 機械システム工学実験1(機)(2)↓↓↓

None

Course title (and course title in English)	機械システムエ Mechanical and Sys			n oratory 2 a	istructor's ame, job ti nd departn f affiliation	tle, nent	Assistant Profess Graduate Sc Associate Prof Graduate Sc Assistant Pro Graduate Sc Assistant Prof Graduate Sc Assistant Profess Graduate Sc Associate Profess Graduate Sc Associate Profess Graduate Sc Associate Profess Graduate Sc Assistant Profess Graduate Sc Assistant Profess Graduate Sc Assistant Profess Graduate Sc Senior Lectum Graduate Sc	hool of Engineering r,WAKABAYASHI HIDENOB hool of Engineering fessor,NAKAJIMA KAORI hool of Engineering ffessor,OKINO SHINY J hool of Engineering or,MATSUMOTO MITSUHR hool of Engineering ro,MATSUMOTO MITSUHR hool of Engineering fessor,KONNO DAISUKI hool of Engineering sor,SHIMADA TAKAHIR hool of Engineering er,NAKANISHI HIROAK hool of Engineering er,NAKANISHI HIROAK hool of Engineering
Target yea	r 3rd year students	or above I	Number	of credit	s 1	Year	/semesters	2020/First semester
Days and perio	ods Thu.4,5	Class	style	Experim	ent		Language of instruction	Japanese
[Overview	and purpose o	of the c	course]					
[Course o	bjectives]							
[Course s	chedule and co	ontents	5]					
,1time, ,2times, ,2times, ,2times, ,2times, ,2times, ,1time, ,1time, ,2times,								
1						C	ontinue to 磯械シ	ステム工学実験2(機)(2)↓↓

Course number U-ENG25 35057 EJ71

	(##) (0)	
機械システム工学実験 1	(機) (2)	
[Evaluation methods an	id policy]	
[Textbooks]		
		_
[References, etc.]		_
(Reference books)		_
Study outside of class	(preparation and review)]	
[otad) outorad or olado		_
(Other information (off	$i = h_{i} + i = \lambda^{i}$	_
*Please visit KULASIS to fi		
Please visit KULASIS to fi	nd out about office nours.	
Courses delivered by i	nstructors with practical work experience]	
(1) Category	Istituciors with practical work experience]	_
	ent delivered by instructors with practical work experience	
	• • • •	
(2) Details of instructors p	practical work experience related to the course	
(3) Details of practical classe	es delivered based on instructors' practical work experience	

[Course requirem	
None	
[Evaluation metho	ods and policy]
-	
[Textbooks]	
[References, etc.]	
(Reference boo	no/
[Study outside of	class (preparation and review)]
	on (office hours, etc.))
*Please visit KULAS	IS to find out about office hours.
[Courses delivered	d by instructors with practical work experience]
(1) Category	
(1) Category A course with practic	al content delivered by instructors with practical work experience
(1) Category A course with practic	
 Category A course with practic (2) Details of instruct 	al content delivered by instructors with practical work experience ors' practical work experience related to the course
 Category A course with practic (2) Details of instruct 	al content delivered by instructors with practical work experience
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 Category A course with practic (2) Details of instruct 	al content delivered by instructors with practical work experience ors' practical work experience related to the course

										未更新
Course num	ber	U-EN	G25 3	5057 EJ71						
Course title (and course 機 title in Mu English)				検2(機) jineering Lab	oratory 2	nan and	ructor's ne, job ti departn ffiliation	nent	Assistant Professo Graduate Scl Associate Prof Graduate Scl Assistant Pro Graduate Scl Assistant Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Senior Lecture Graduate Scl	tool of Engineering (WAKABAYASHI HIDENOBU tool of Engineering essor,NAKAJIMA KAORU tool of Engineering fessor,OKINO SHINYA tool of Engineering ofessor,hirty yoshikazu titer Life and Medical Sciences ssor,KAMEO YOSHITAKA tool of Engineering osor,SHIKAMA TAIICHI tool of Engineering essor,KUANA TASIUCHI tool of Engineering mar.TERAKAWA TASIUCHI tool of Engineering essor,KOUNO DAISUKE tool of Engineering tessor,KOUNO DAISUKE tool of Engineering mar.NAKANISHI HIROAKI tool of Engineering mar.NAKANISHI HIROAKI
Target year	3rd y	ear students	or above	Number	of cred	its	1	Year	/semesters	2020/Second semester
Days and periods	Thu.	1,2	Clas	s style	Experi	men	t		Language of instruction	Japanese
[Overview a	nd pu	irpose c	of the	course]						
[Course obj	ective	es]								
[Course sch	edule	e and co	nten	ts]						
Basic knowled detection. Intrusion Detec	ge on ction b	the role of signation of the second sec	of IDS ure-Ba	in network ised IDS,5ti	security	/ and arn t	l how n he mecl	hachin hanisn	e learning car	cility for this class.\ help the intrusion detection by signature- idence between alarms

Course title (and course title in English)				簽3(機) gineering Lab	na oratory 3 an	structor's me, job ti d departn affiliation	tle, nent	Graduate Scl Associate Prof Graduate Scl Assistant Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Associate Prof Graduate Scl Senior Lectu	essor,NAKÅJ hool of Engi hool of Engi hool of Engi nor, NAMUR, hool of Engi fessor,SHIMAD hool of Engi fessor,SHIKA hool of Info hool of Info hool of Engi hool of Engi	IMA KAO neering UDA NA neering A KYO neering A TAKAH neering MA TAII matics NO KEI neering
Target yea	r	3rd year stude	ents or above	Number	of credits	1	Yea	r/semesters	2020/First	semester
Days and perio	ods F	ri.4,5	Clas	s style	Experime	nt		Language of instruction	Japanese	
[Overview	and	d purpos	e of the	course]					·	_
[Course o	alec	tivesj								
[Course s ,1time, ,14times,	che	- dule and		ts]						
[Course s ,1time, ,14times,	che	- dule and		ts]						
[Course s ,1time, ,14times, [Course re None	che	dule and]							
[Course s ,1time, ,14times,	chee equi	dule and]							
[Course s ,1time, ,14times, [Course r None [Evaluatio	che equi n m	dule and rements ethods a]							

U-ENG25 35058 EJ71

Course number

detection. Intrusion Detection by Signature-Based IDS,5times,Learn the mechanism of intrusion detection by signature-
based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarms issued from IDS and communications, and adding signatures to detect attacks.
Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicious
traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance. Presentation, ltime, Based on the exercise, students presents their methods of intrusion detection using
machine learning, and discuss it with other students and instructors.
Continue to 機械ジステム工学実験 2 (機) (2)↓↓↓
機械システム工学実験 2 (機) (2)
(放照ノヘノム上子天駅 2 、(放/ (2)
[Course requirements]
None

[Evaluation methods and policy]

[Textbooks]

[References, etc.] (Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

Category
 A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

機械システム工学実験3(機)(2) ------[Study outside of class (preparation and review)] (Other information (office hours, etc.)) Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] Category
 A course with practical content delivered by instructors with practical work experience
 (2) Details of instructors' practical work experience related to the course (3) Details of practical classes delivered based on instructors' practical work experience

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Course nur	nber	U-ENG25 35058 EJ71									
	e title ourse 機械システム工学実験3 (機) Mechanical and System Engineering Laboratory 3						tructor's ne, job ti I departn ffiliation	nent	Graduate School of Engineering Associate Professor,NAKAJIMA KAORI Graduate School of Engineering Assistant Professor,MATSUDA NAOK Graduate School of Engineering Assistant Professor,NAMURA KOK Graduate School of Informatics Assistant Professor,NOSHINO KENT; Graduate School of Engineering Associate Professor,SHIMADA TAKAHIR Graduate School of Engineering Associate Professor,SHIKAMA TAIICH Graduate School of Engineering Senior Lecturer,SENAMI MASATC		
Target year	Brd	l year students o	r above	Number	of cred	lits	1	Year	/semesters	2020/Second semester	
Days and period				s style	Experi	men	t		Language of instruction	Japanese	
[Overview	and p	ourpose o	f the	course]							
[Course objectives]											
[Course sc	[Course schedule and contents]										
Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this class.\ Basic knowledge on the role of IDS in network security and how machine learning can help the intrusion detection. Intrusion Detection by Signature-Based IDS,5times,Learn the mechanism of intrusion detection by signature- based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarms issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicious traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance. Presentation, 1time,Based on the exercise, students presents their methods of intrusion detection using machine learning, and discuss it with other students and instructors.											
[Course ree	quire	ments]									
None											

_____Continue to 機械システム工学実験 3 (機) (2)↓↓↓

土面新

Course number	U-ENG25 35	5059 SJ71							
Course title (and course title in Exercise English)	計演習 1 (機) e of Machine De			nan and	tructor's ne, job ti I departn iffiliation	tle, nent	Graduate Sch Professor, YC	SHIWAKI 1001 of Eng 2550r,NAKA 1001 of Eng DKOKAW	SHINJI gineering JIMA KAORU gineering
Target year Brd y	ear students or above	Number	of cred	its	2	Yea	r/semesters	2020/Firs	t semester
Days and periodsMon.4	4,5,Fri.4,5 Class	s style	Semin	ar			Language of instruction	Japanese	
[Overview and pu	irpose of the	course]							
[Course objective	es]								
[Course schedule	e and content	:s]							
,4times, ,3times,									
,-times,									
,21times,									
,21times,									
,21times,									
,2times,									
[Course requirem	nents]								
None									
[Evaluation meth	ods and polic	>y]							
[Textbooks]									
Γ						(Continue to 機材	設計演習1	〔機〕(2)↓↓↓

Evaluation methods		
[Textbooks]		
[References, etc.]		
(Reference books)		
[Study outside of class	ss (preparation and review)]	
Other information (office hours, etc.)	
	o find out about office hours.	
[Courses delivered b	y instructors with practical work experience]	
(1) Category		
A course with practical co	ontent delivered by instructors with practical work experience	
*	practical work experience related to the course	
(2) Details of instructors'		
(2) Details of instructors'	practical work experience related to the course	
(2) Details of instructors'	practical work experience related to the course	
(2) Details of instructors'	practical work experience related to the course	
(2) Details of instructors'	practical work experience related to the course	
(2) Details of instructors'	practical work experience related to the course	
(2) Details of instructors'	practical work experience related to the course	
(2) Details of instructors'	practical work experience related to the course	

機械設計演習 1 (機) (2) [References, etc.] (Reference books) [Study outside of class (preparation and review)] (Other information (office hours, etc.)) *Delase visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] (1) Category A course with practical content delivered by instructors with practical work experience (2) Details of instructors' practical work experience related to the course (3) Details of practical classes delivered based on instructors' practical work experience

									未更新			
Course num	nber	U-ENO	325 3	5059 SJ71								
		計演習 1 of Machi				Instructor's name, job ti and departr of affiliatior	tle, nent	Graduate School of Engineering Professor,NISHIWAKI SHINJI Graduate School of Engineering Associate Professor,SHIKAMA TAIICHI Graduate School of Engineering Associate Professor,TATSUMI KAZUYA Part-time Lecturer,YAMANAKA KOUSUKE				
arget year	3rd ye	ear students o	or above	Number	of cred	lits 2	Yea	/semesters	2020/First semester			
Days and periods	Tue.4,	5,Thu.4,5	Clas	s style	Semin	ar	-	Language of instruction	Japanese			
Overview a	nd pu	irpose o	f the	course]								
[Course obj	ective	es]										
				-								
[Course sch				•					cility for this class.			
letection. ntrusion Deter- pased IDS by s ssued from ID ntrusion Deter- raffic by mach	ction b studyin OS and ction b hine lea time,Ba	y Signatu ng open so communi y Machin arning alg ased on th	ource ication le Lea gorithme exe	used IDS,5ti signature-ba ns, and addi urning,7time ms and publ ercise, stude	mes,Le ased ID ng sign es,Learn lic datas nts pres	arn the mec S and attacl atures to de a the methor set for bencl sents their n	hanisn ts, suc tect att l of cla umarki tethod	n of intrusion h as correspor acks. Issifying norn ng intrusion c	h help the intrusion detection by signature- ndence between alarms nal and malicious letection performance. detection using			
[Course req	uirem	ents]										
None												
Evaluation	meth	ods and	poli	cvl								
[Textbooks]												
[References	s, etc.]											
Referenc	e boo	ks)										
							(Jontinue to 機材	观改訂演省Ⅰ(馈)(2)↓↓↓			

Course title (and course title in English) Exercise of Machine Design 1 English) Exercise of Machine Design 1 English Exercise of Machine Design 1 Exercise of Machin		er U-EN	IG25 35059 SJ7				Graduate Scl	hool of Enginee
In get year Days and periods Wed.4,5,Fri.4,5 Class style Seminar Impaged instructor Japanese [Overview and purpose of the course] Seminar Impaged instructor Japanese [Course objectives] [Course schedule and contents] Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this class is operated, and how to use computing facility for this classic knowledge on the role of IDS in network security and how machine learning can help the intrus detection. Intrusion Detection by Signature-Based IDS,5times,Learn the mechanism of intrusion detection by signature-based IDS and attacks, such as correspondence between issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicio traffic by machine learning algorithms and public dataset for benchmarking intrusion detection using machine learning, and discuss it with other students and instructors. [Course requirements] None [Evaluation methods and policy] [Evaluation methods and policy]	(and course 機柄 title in Exe				name, job ti and departr	itle, nent	Professor,NI Graduate Sci Associate Profe Graduate Sci	SHIWAKI SHI hool of Enginee ssor,SUMIGAWA hool of Enginee
[Overview and purpose of the course] [Course objectives] [Course schedule and contents] Guidance, Ztimes, Guidance on how this class is operated, and how to use computing facility for this cl Basic knowledge on the role of IDS in network security and how machine learning can help the intrus detection. Intrusion Detection by Signature-Based IDS, Stimes, Learn the mechanism of intrusion detection by signature-based IDS and attacks, such as correspondence between issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning, 7/times, Learn the method of classifying normal and malicio traffic by machine learning algorithms and public dataset for benchmarking intrusion detection using machine learning, and discuss it with other students and instructors. [Course requirements] None [Evaluation methods and policy]	Target year	3rd year students	or above Numbe	r of credi	ts 2	Yea	r/semesters	2020/First sen
[Course objectives] [Course schedule and contents] Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this cl Basic knowledge on the role of IDS in network security and how machine learning can help the intrus detection. Intrusion Detection by Signature-Based IDS,Stimes,Learn the mechanism of intrusion detection by signed based IDS by studying open source signature-based IDS and attacks, such as correspondence between issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicion traffic by machine learning algorithms and public dataset for benchmarking intrusion detection using machine learning, and discuss it with other students and instructors. [Course requirements] None [Evaluation methods and policy]	Days and periods	ed.4,5,Fri.4,5	Class style	Semina	r		Language of instruction	Japanese
Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this cl Basic knowledge on the role of IDS in network security and how machine learning can help the intrus detection. Intrusion Detection by Signature-Based IDS,Stimes,Learn the mechanism of intrusion detection by sig based IDS by studying open source signature-based IDS and attacks, such as correspondence between issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicio traffic by machine learning algorithms and public dataset for benchmarking intrusion detection perfor Presentation, 1time,Based on the exercise, students presents their methods of intrusion detection using machine learning, and discuss it with other students and instructors. [Course requirements] None [Evaluation methods and policy]	[Course object	tives]						
detection. Intrusion Detection by Signature-Based IDS,5times,Learn the mechanism of intrusion detection by signature-based IDS and attacks, such as correspondence between issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicio traffic by machine learning algorithms and public dataset for benchmarking intrusion detection using machine learning, and discuss it with other students and instructors. [Course requirements] None [Evaluation methods and policy]	•			is operated	, and how	to use	computing fa	cility for this cl
[Evaluation methods and policy]				time of Taxa		1		data ati an har ai a
	based IDS by stu issued from IDS Intrusion Detecti traffic by machin Presentation,1tim machine learning	dying open s and commun on by Machin he learning algore, Based on t g, and discuss	source signature nications, and ad ne Learning,7tir gorithms and pu the exercise, stu	based IDS ding signation nes,Learn blic datase dents prese	and attack tures to de the method at for bencle onts their n	ks, suc tect at 1 of cla hmark nethod	h as correspon tacks. assifying norn ing intrusion o	ndence between nal and maliciou detection perfor
[Textbooks]	based IDS by stu issued from IDS Intrusion Detecti traffic by machin Presentation,1tin machine learning [Course requi	dying open s and commun on by Machin he learning algore, Based on t g, and discuss	source signature nications, and ad ne Learning,7tir gorithms and pu the exercise, stu	based IDS ding signation nes,Learn blic datase dents prese	and attack tures to de the method at for bencle onts their n	ks, suc tect at 1 of cla hmark nethod	h as correspon tacks. assifying norn ing intrusion o	ndence between nal and maliciou detection perfor
	based IDS by stu issued from IDS Intrusion Detecti traffic by machin Presentation,1tin machine learning [Course requi None	dying open s and commun on by Machin he,Based on t g, and discuss rements]	source signature- nications, and ad ne Learning,7tir gorithms and pu the exercise, stud s it with other stu	based IDS ding signation nes,Learn blic datase dents prese	and attack tures to de the method at for bencle onts their n	ks, suc tect at 1 of cla hmark nethod	h as correspon tacks. assifying norn ing intrusion o	ndence between nal and maliciou detection perfor
	based IDS by stu issued from IDS Intrusion Detect itraffic by machin Presentation, I tin machine learning [Course requi None [Evaluation m	dying open s and commun on by Machin he,Based on t g, and discuss rements]	source signature- nications, and ad ne Learning,7tir gorithms and pu the exercise, stud s it with other stu	based IDS ding signation nes,Learn blic datase dents prese	and attack tures to de the method at for bencle onts their n	ks, suc tect at 1 of cla hmark nethod	h as correspon tacks. assifying norn ing intrusion o	ndence between nal and malicion detection perfor

機械設計演習 1 (機) (2)
[Study outside of class (preparation and review)]
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.
[Courses delivered by instructors with practical work experience]
(1) Category
A course with practical content delivered by instructors with practical work experience
(2) Details of instructors' practical work experience related to the course
(3) Details of practical classes delivered based on instructors' practical work experience

機械設計演習1(機)(2)

[References, etc.] (Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

土面新

Course nu	umber	U-EN	G25 3	5060 SJ71								
Course title (and course title in English)		計演習 2 se of Mach				Instructor's name, job title, and department of affiliation			Graduate School of Engineering Professor, KOMORI MASAHARU Graduate School of Engineering Professor, HIRAYAMA TOMOKK Graduate School of Engineering Associate Professor, KOUNO DAISUU Graduate School of Engineering Senior Lecturer, NAKANISHI HIROA Part-time Lecturer, KANEDA SHUIC			
Target yea	r Brd	year students	or above	Number	of cred	lits	2		/semesters	2020/Sec		
Days and perio				s style	Semin	ar			Language of instruction	Japanese		
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[Course schedule and contents]												
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[Textbook	s]											
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土面新

Course title (and course title in English) Professor,MATSUBARA AT Graduate School of Engineeri Associate Professor,NAKABE KAZUY Graduate School of Engineeri and department of affiliation Professor,NAKABE KAZUY Graduate School of Engineeri Professor,NISHIWAKI SHIN Part-time Lecturer,Part-time L Target year Ind year students or abov Number of credits 1 Year/semesters 2020/Second se Days and periods Wed.5 Class style Practical training Impagedistude Japanese [Overview and purpose of the course] This course consists of two parts: machine shop training and special lectures by visiting lecturers. The machine shop training will be offered for a week in August or September (during summer break). Stude will learn the operation of various machine tools, e.g. a lathe, a milling machine, and a drilling machine make a stirling engine, whose performance will be tested at the end of the course. Hands-on training of disassembly and re-assembly of a commercial diesel engine (or a gasoline engine) will be also offered t learn actual engine mechanism. The seminar series will be offered in the 2nd semester. Professional engineers from various companies be invited to give a lecture on real-world experience on production design, manufacturing, or managem focurse objectives] To experience turning, milling and drilling operations and other basic machining operations. To obtain knowledge and experience on machine tools, cutting tools, measurement, and machining accuracy by h on training. ICourse schedule and contents] Lectures on principle of engines, ltime,Students will learn basic	Course title (and course Brighsh) Graduate School of Engineerin Associate Professor, KOUNO DA Graduate School of Engineerin Professor, NAKABE KAZUYU Graduate School of Engineerin Professor, NISHIWAKI SHIN. Part-time Lecturer, Part-time L Target year Ind year students or abov Number of credits 1 Year/semesters 2020/Second set Days and periods Wed.5 Class style Practical training Japanese IOverview and purpose of the course] This course consists of two parts: machine shop training and special lectures by visiting lecturers. The machine shop training will be offered for a week in August or September (during summer break). Stude will learn the operation of various machine tools, e.g. a lathe, a milling machine, and a drilling machine make a stirling engine, whose performance will be tested at the end of the course. In the seminar series will be offered in the 2nd semester. Professional engineers from various companies be invited to give a lecture on real-world experience on production design, manufacturing, or manageme be invited to give a lecture on real-world experience on production design, manufacturing, or manageme be invited to give a lecture on starking engine. ICourse on principle of engines, Itime,Students will learn basic knowledge on the priciple of a stirling engine. Lectures on principle of engines, Itime,Students will learn basic knowledge on machine tools that they will us machine shop training. Machine shop training (making a stirling engine).4times,Turning operation for cylindrical parts (2 classs milling and drilling operation s (2 classes), assembly and evaluation (1 class). A			5061 PJ71							
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		Special seminars,7t		uture Edisor	n save th	e world	by goo	d idea and ei	ngineering,quot\		
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References, etc.]		
(Reference books)		
Study outside of clas	ss (preparation and review)]	
Other information (o find out about office hours.	
rease visit KOLASIS it	This out about office nours.	
Courses delivered by	y instructors with practical work experience]	
) Category		
course with practical co	ontent delivered by instructors with practical work experience	
2) Details of instructors'	practical work experience related to the course	
) Details of practical cla	asses delivered based on instructors' practical work experience	

[Course requirements] one [Evaluation methods and policy] For the credit, students are in principle required to participate in all the classes, and to submit all the reports. [Textbooks] A textbook will be handed out in class. [References, etc.] (Reference books) None (Related URLs) (None.) [Study outside of class (preparation and review)] (Other information (office hours, etc.)) The class overview will be presented in a guidance class for 2nd year students in Undergraduate Course Program of Mechanical and Systems Engineering in April. Detailed schedule will be given then. Please be aware -- a large part of this class will be offered during the summer break. A class guidance will be given typically in July. Its announcement will be posted in the 1st floor of the building of Dept. of Engineering Science. All the students who want to take this class must come to this guidance *Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

									未更新
Course n	umber	U-ENG2	5 35062 SJ75						
Course title (and course title in English)			び演習 1 (材 boratory and Ex		Instructor's name, job title, and department of affiliation			ALL STAFF Graduate Sch	nool of Engineering nool of Engineering essor,YUGE KORETAKA
Target yea	r Brd y	ear students or a	bove Number	of cred	lits	3	Yea	r/semesters	2020/First semester
Days and peri	odsWed.3	8,4,Thu.3,4 C l	lass style	Semina	ar			Language of instruction	Japanese
[Overview	/ and pu	urpose of t	the course]						
[Course o	bjective	es]							
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Inclose		/K3/							
[Study ou	tside of	f class (pro	eparation and	d revie	w)]				
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Course n	umber	U-EN	G25 3	5066 EJ77							
Course title (and course title in English)				(宇) nautics and Astr	ronautics 1	Instructor's name, job title,] and department of affiliation			Graduate Sch ssistant Profes Graduate Sch Professor,TA Graduate Sch	ssor,SUGIYA nool of Eng ssor,HATTO nool of Eng IKATA SH nool of Eng	AMA FUMIKO tineering RI MASANAR tineering IIGERU
Target yea	r 3rd	year students	or above	Number	of cred	its 1	Y	/ear/s	emesters	2020/Firs	t semester
Days and peri	ods Fri.	3,4	Clas	s style	Experi	ment			Language of instruction	Japanese	
[Overview	[Overview and purpose of the course]										
[Course o	bjectiv	/es]									
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[Course s	chedu	le and co	onten	ts]							
,1time,											
,4times, .4times.											
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[Course r	equire	ments]									
None											
[Evaluatio	on met	hods and	l poli	cy]							
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Course nu	umber	U-ENG	25 35063	SJ75							
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Target yea	r Brd	year students or	above Nur	nber	of cred	its	3	Year/	semesters	2020/Second semester	
		.3,4,Thu.3,4 C			Semina	ar			Language of instruction	Japanese	
[Overview	and p	ourpose of	the cou	rse]							
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(Referei	nce bo	ooks)									
[Study ou	tside d	of class (pr	eparatio	on an	d revie	w)]					
(Other in	format	tion (office	hours.	etc.))							
	*Please visit KULASIS to find out about office hours.										

航空宇宙工学実験1(宇)(2)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

*Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

										未更新
Course nu	umber	U-EN	G25 3	5067 EJ77						
· · · · · · · · · ·		:宙工学実 ng Laboratory		(宇) nautics and Astr	ronautics 2	Instructor's name, job title, and department of affiliation			Assistant Profe Graduate Sch Associate Profe Graduate Sch Assistant Profe Graduate Sch Professor, TA Graduate Sch	tool of Engineering ssor, URABE KEIICHIRO tool of Engineering ssor, MARUTA ICHIROU tool of Engineering ssor, SUGIYAMA FUMIKO tool of Engineering KATA SHIGERU tool of Engineering r, SUGIMOTO HIROSHI
Target yea	r 3rd	year students or above Number of credits 1 Year/ser							r/semesters	2020/Second semester
Days and perio	ods Tue	.3,4	Clas	s style	Experi	men	t		Language of instruction	Japanese
[Overview	and p	urpose o	of the	course]						
[Course o	bjectiv	ves]								
[Course s	chedu	le and co	onten	ts]						
,1time, .4times.										
,4times,										
,4times,										
[Course re	equire	ments]								
None										
[Evaluatio	n metl	hods and	l poli	cy]						
[Textbook	s]									
								,	Continue to them	幸山工学実験2(字)(2)↓↓↓
								(Jontinue to 航空	⊢田⊥子兲駛∠〔于〕(2)↓↓↓

Course nu									
Course title (and course title in English)		科学(材) al Metalic		erials		Instructor's name, job ti and departn of affiliation	tle, nent		nool of Engineering UJI NOBUHIRO
Farget yea	r Brd ye	ear students or	r above	Number	of cred	its 2	Yea	r/semesters	2020/Second semeste
Days and perio				s style	Lecture	3		Language of instruction	Japanese
[Overview	and pu	irpose of	f the	course]					
[Course o	bjective	es]							
[Course s	chedule	and cor	ntent	sl					
Outline of L									
Microstructu	ire Evolu	ution in Ca							
Deformation						rowth,3time	s,		
,3times,		1.50							
Heat Treatm Summary,1t		eels,5time	s,						
summary, It	nne,								
[Course re	equirem	ients]							
None									
[Evaluatio	n meth	ods and	polic	y]	_				
Attendance,			•						
[Textbook	s]								
-	-								
[Reference									
(Referer	nce boo	ks)							
(Related	URLs)								
(http://www	.tsujilab	.mtl.kyoto	-u.ac	.jp/01Tsuji	Lab/Edu	cation/Strue	ctMeta	alMater/)	
[Study out	tside of	class (p	repa	ration an	d revie	w)]			
(
(Other inf									
*Dianca wight	KULAS	SIS to find	out a	hout office	hours				
· riease visit				bout office	nours.				
r icase visit				oout onnee	nours.				

(Reference books) [Study outside of class (preparation and review)] (Other information (office hours, etc.)) Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course 3) Details of practical classes delivered based on instructors' practical work experience	[References, etc.]		
(Other information (office hours, etc.)) Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course)	
(Other information (office hours, etc.)) PPlease visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
(Other information (office hours, etc.)) Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course	Study outside of clas	iss (preparation and review)]	
Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
Please visit KULASIS to find out about office hours. [Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
[Courses delivered by instructors with practical work experience] 1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
 Category A course with practical content delivered by instructors with practical work experience Details of instructors' practical work experience related to the course 	Please visit KULASIS to	to find out about office hours.	
1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
1) Category A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course			
A course with practical content delivered by instructors with practical work experience 2) Details of instructors' practical work experience related to the course		by instructors with practical work experience]	
		content delivered by instructors with practical work experience	
	· · · · · · · · · · · · · · · · · · ·	,	
3) Details of practical classes delivered based on instructors' practical work experience	2) Details of instructors	practical work experience related to the course	
3) Details of practical classes delivered based on instructors' practical work experience			
	 Details of practical classical 	asses delivered based on instructors' practical work experience	

Course number								
	U-ENG25 35	5070 LJ75						
Course title (and course 材料궠 title in Physic English)	崔度物性(材) s of Strength of M	laterials	nar	Instructor's name, job title, and department of affiliation				
Farget year Bro	l year students or above	Number of c	redits	2	Year	r/semesters	2020/Second semeste	
Days and periods Fri.	1 Class	style Leo	cture			Language of instruction	Japanese	
[Overview and]	ourpose of the	course]						
deformation of cry grain boundaries, b	ased on dislocation		solution	i harden	ing, pr	ecipitation ha	rdening, properties of	
	elp students to ac						materials and also to	
 (4) Dislocations in (5) Dislocation mo (6) Grain boundaie (7) Feedback [1 weights] 	tions and thermal s and crystal plast	activation proc						
[Course require	ments]							
Physics of Crystal	Properties and Im	perfections						
[Evaluation met	hods and polic	у]						
Evaluation will be grading determinat		examination.	Attenda	ance and	l daily	reports may t	be considered in	
[Textbooks]								
Hand out materials	will be provided	during the lectu	ire.					
[References, et	.]							
(Reference bd 鈴木秀次 『転位詞 J.P. Hirth and J. Le J.P. Hirth and J. Le 角野浩二(編) 『編 日本金属学会』『J	論入門』(アグネ the 『Theory of I the 『Theory of I 話晶の塑性』(丸	Dislocations, 2 善)ISBN:TV	(McG nd ed.] V86162	raw-Hil (Wile 567	y) IS	BN:04710912 030220		

材料強度物性(材)(2)	Course number
竹內 伸 『結晶塑性論』(内田老鶴圃)ISBN:978-4-7536-5090-3	ーーーー Course title (and course 統計熱 title in Statisti English)
[Study outside of class (preparation and review)]	
To review contents covered in the previous lecture.	Target year 4th
(Other information (office hours, etc.))	Days and periods Mon
Please visit KULASIS to find out about office hours.	In pinter 11/5 [Overview and p Statistical mechanics mechanics through mechanics, solid statistical mechanics Understanding the - Understanding the - Scientific view of Ist week: Concepts 2nd week: Counting 3rd week: Microcar 4th-6th weeks: Qua 10th-11th weeks: Ira 13th week: Applica 14th week: Examin 15th week: Feedbac
	[Course require
	Basic knowledge of useful.
	[Evaluation met
	- Written examinati - Paper assignment
	[Textbooks]
	Lecture notes will b
	[References, etc
	(Reference bo Introduced during c

										未更新
Course nu	umber	U-ENO	325 4:	5073 LJ75	U-EN	G25	45073	LJ57	U-ENG25 4	5073 LJ71
Course title (and course title in English)	統計熱 Statisti	为学 ical Thermo	odynai	nics		nan and	ructor's ne, job ti departn ffiliation	nent		hool of Engineering sor,MATSUMOTO MITSUHIR(
Target yea	r 4th	year students o	r above	Number o	of cred	lits	2	Year	/semesters	2020/First semester
Days and perio				style	Lectur	e			Language of instruction	Japanese
[Overview	and p	ourpose o	f the	course]						
mechanics th	nrough	several bas	ic exa	mples in va	arious fi	elds	of scier	nce and		ard course of statistical , including quantum
[Course o	bjectiv	ves]								
- Understand	ling the	e relation be							opic states. l on statistics.	
[Course s	chedu	le and co	ntent	s]						
4th-6th weel 7th-9th weel 10th-11th w 12th week: 1 13th week: 1 14th week: 1 15th week: 1	ks: Qua eeks: Ir Photons Applica Examin	ntum statis ntroduction s and Phone ttion to Infe ation	tics (E to sol ons	ose-Einste id state phy	in vs. F	ermi	-Dirac)			
[Course re	auire	ments]								
-			namic	s, calculus,	statistic	cs, ai	nalytica	l mech	anics, and qu	antum physics will be
[Evaluatio	n met	hods and	polic	y]						
- Written ex: - Paper assig		ion	-							
[Textbook	s]									
Lecture note	s will t	e provided								
[Referenc	es, etc	.]								
Referen		-								
Introduced d	luring c	lass						,	Continue to	
								, c	Jonunue to	〒1〒1〒??/」子(2)↓↓↓

Course nur	nber	U-EN	G25 4	5071 LJ71								
Course title (and course title in English)		性学(機 of Solids										
Target year	4th y	ear students o	or above	Number o	of cred	its	2	Year	/semesters	2020/First semester		
Days and period	s Tue.2	2	Class	s style	Lectur	e		-	Language of instruction	Japanese		
[Overview a	and pu	urpose o	f the	course]								
[Course ob	jective	es]										
[Course sc	hedule	e and co	ntent	s]								
Electronic dtr Assessment o	f achie	vement,1t		times,								
None												
[Evaluation	meth	ods and	polic	>y]								
[Textbooks]											
[Reference:	s, etc.]										
}{047168057	ion to s 5}	solid state					el isbn{	}{9780	471415268}	, international ed. isbn{		
[Study outs	side of	f class (p	orepa	ration and	d revie	w)]						
(Other info	ormati	on (offic	e hou	urs, etc.))								
*Please visit I	KULAS	SIS to find	l out a	bout office	hours.							

統計熱力学(2)

[Study outside of class (preparation and review)] Since this class covers basics in physics with many examples encountered in science and engineering, students of various research fields are welcome.

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

						未更新	
Course numb	U-EN	G25 45073 LJ75	U-ENG2	5 45073 LJ5	7 U-ENG25 4	5073 LJ71	Course n
	計熱力学(材 tistical Therm		na	tructor's me, job title, d department affiliation		hool of Energy Science fessor,MIYAKE MASAO	Course title (and course title in English)
Target year	3rd year students	or above Number	of credits	2 Ye	ar/semesters	2020/Second semester	Target ye
Days and periods	Tue.3	Class style	Lecture		Language of instruction	Japanese	Days and per
[Overview an	d purpose	of the course]					[Overvier
		deas of Statistical c systems and som					This course
[Course obje	ctives]						The goal is
	-	ooth to understand	fundament	al idead of S	tatistical Therm	odynamics and to	[Course :
study typical ap	plications to c	condensed matter	physics.				Introductio
Course och	ماريام مريدا م						Statistics a
[Course sche				.1 .1		1.00.00	Statistical p Design of e
Outlines, Itime, I means of measu			odynamics,	thermal equ	iilibrium, funda	mentals of Statistics,	Analysis of
		me,Thermodynam	ic laws the	rmodynamie	functions Lag	endre transform	Application
		Imholtz equation,					Reliability.
						ical ensemble, Partition	
		elmholtz free energ			n,Principle of B	oltzmann, simple	
	microcanonica	al ensamble (ideal	gas, elastic	of gum)			[Course
,1time,					D		None
		s paradox, grand c			, Partition func	tion, the 3rd law of	
					s Fermion and	Boson, Bose-Einstein	ſEvaluati
		cs,ideal Fermi gas					The regular
condensation.					0		The regula
		Systems with two l					
						ific heat of solid states.	[Textboo
Evaluation of g	oals, Itime, Ur	iderstanging of typ	pical applic	ations of sta	listic themodyn	amics and submission	Not used
of nonieworks.							
[Course requ	irements]						[Referen
		d to have mastered	l basics of 1	nathematics	, dynamics, eler	nentary quantum	(Refere
mechanics, then	modynamics	and statistics.					
							[Study or
							[Study or
							Homework
							(Other in
					Continue to 統語	熱力学(材エネ)(2)↓↓↓	*Please vis
1							

٦

Course num	ber	U-ENG25 4	5087 LJ71					
Course title (and course title in English)		里 Control			Instructor name, job and depai of affiliati	title, rtment	Professor,NI Graduate Scl	nool of Engineering SHIWAKI SHINJI nool of Engineering fessor,IZUI KAZUHIR
Target year	4th ye	ear students or above	Number	of cred	its 2	Yea	r/semesters	2020/First semester
Days and periods	Wed.4	4 Clas	s style	Lecture	•		Language of instruction	Japanese
[Overview a	nd pu	rpose of the	course]					
This course de	als wit	h the basics of	quality cor	ntrol met	hodologie	es and re	liability engir	eering techniques.
[Course obj	ective	es]						
The goal is to u	inderst	tand the concep	pt of numer	rical and	strategic	approac	hes of quality	control techniques.
[Course sch	edule	and conten	ts]					
Introduction,1t								
Statistics and h			nes,					
Statistical proc Design of expe								
Analysis of va								
Application of			ts,2times,					
Reliability,4tin								
[Course req	uirem	ents]						
None		ionio]						
i tono								
-		ods and poli						
The regular ex-	aminat	tion, in-class ex	camination	is and rep	orts are ta	aken into	o account.	
[Textbooks]								
Not used								
ID of one of o	-							
[References		-						
(Reference		KS)						
[Study outsi	de of	class (prepa	ration an	nd review	w)]			
Homework pro	blems	are assigned.						
(Other info	matic	on (office ho	urs, etc.)))				
*Please visit K	ULAS	SIS to find out a	about office	e hours.				
								
								未更新
Course num	ber	U-ENG25 3	5096 LJ57	U-EN	G25 3509	96 LJ68		
								nool of Biostudies
Course title							Professor,MA	TSUMOTO TOMOHIR

	ry submission of some reports and score of exam are totally evaluated.
[Textbooks]	
he textbook is not	appointed. Writing on the blackboard is performed in every lecture.
	1
References, etc (Reference bo	
	oks/ 熱力学・統計力学」培風館, isbn{}{9784563021399}
	林宏・岩橋槇夫訳):「統計熱力学入門-演習によるアプローチ-」東京化学同
, isbn{}{48079	03225}
	統計力学」裳華房, isbn{}{4785321342}
4. 市村 浩:	熱学演習-統計力学」裳華房, isbn{}{4785321350}
 ン、キッテル・「 ン、辺区専興・「 	熱物理学」丸善, isbn{}{9784621027271} 熱物理学•統計物理学演習」丸善, isbn{}{4621048570}
). 伯ഥ貝吻・「 7 ・W ゲライナー	※彻理子・杭司初理子領百」凡音, ISDI{}{4021048370} - I ナイゼ Hシュテッカー(伊藤伷泰 吉太圭子訳):「執力学・統計力学」
シュプリンガー,	***********************************
3. 久保亮五:「	ゴム弾性」裳華房 isbn { } { 478532807X }
Study outside o	of class (preparation and review)]
Other informat	ion (office hours, etc.))
	ay undestand this lecture if they catch on basics of physics.
Please visit KULA	SIS to find out about office hours.

統計熱力学(材エネ)(2)

Course number	U-ENG25	35096 LJ57	U-ENO	G25	35096	LJ68		
Course title (and course title in English)	理学 lar Biophysics	_	Instructor's name, job title, and department of affiliation			Graduate School of Biostudies Professor, MATSUMOTO TOMOHIRO Institute for Integrated Radiation and Nuclear Science Associate Professor, SAKURAI YOSHINORI Graduate School of Biostudies Professor, TAKATA MINORU Graduate School of Biostudies Professor, HARADA HIROSHI		
Target year Brd y	ear students or abov	Number	of credi	its	2	Year	/semesters	2020/First semester
Days and periods Mon		s style	Lecture	;			Language of instruction	Japanese
[Overview and pu	urpose of the	course]						
Course shisetiu	1			_				
[Course objective	esj							
[Course schedule	e and conter	ts]						
,1time,								
,2times,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
,1time,								
[Course requiren	nents]							
None								
[Evaluation meth	ods and poli	cy]						
						6	Continue to	
								• • • • • • • • • • • • • • • • •

主物物理学 (2)				
[Textbooks]			 	
B.(. 1			
References, e (Reference b				
(Reference b	OOKS)			
Study outside	of class (preparati	on and review)]		
(Other inform	ation (office hours,	etc.))		
Please visit KUI	ASIS to find out abou	t office hours.		

精密加工学 (機) (2)
[References, etc.]
(Reference books)
[Study outside of class (preparation and review)]
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.
[Courses delivered by instructors with practical work experience]
(1) Category
A course with practical content delivered by instructors with practical work experience
(2) Details of instructors' practical work experience related to the course
(3) Details of practical classes delivered based on instructors' practical work experience

未更新

Course n	umbe	r U-EN	G25 4	5099 LJ71						
Course title (and course title in English)		加工学(機 sion Machin				nan and	and department Graduate School of En			ATSUBARĂ ATSŬSHI
Target yea	ı r 4	th year students of	or above	bow Number of credits 2 Year/semesters 2020/First semester						
Days and peri				s style	Lecture	e			Language of instruction	Japanese
[Overview	/ and	purpose o	f the	course]						
[Course o	bject	tives]								
-	ched	lule and co	ntent	ts]						
,2times, .3times.										
,3times,										
,2times,										
,2times,										
,1time,										
,1time, ,1time,										
[Course r	equir	ements]								
None										
[Evaluatio	on me	ethods and	polic	cy]						
Textbook	s					_				
[.01									
L										
								0	Continue to 料	密加工学 (機) (2)↓↓↓

Course n	umber	U-ENO	325 3	5102 LJ75								
Course title (and course title in English)			(化学 (村) emistry of Materials Processing and department of affiliation affili									
Target yea	ı r 3rd y	ear students o	ar students or above Number of credits 2 Year/semesters 2020/First semester									
Days and peri	d periods Wed.1 Class style Lecture Language of instructor Japanese											
[Overview	/ and pu	urpose o	f the	course]								
which become	[Overview and purpose of the course] This course serves the fundamentals related to solution chemistry of electrolytes and electrode reactions, which become the basis of wet processing such as electrolytic refining, electrowinning, corrosion, anticorrosion, and functional electrodeposition.											
[Course o	bjective	es]										
necessary to	[Course objectives] In this course students learn basic technical terms and basic concepts of physical chemistry, which are necessary to study materials science and engineering from the viewpoints of solution chemistry and electrochemistry, to take subsequent advanced courses on materials science and engineering.											
[Course s	chedule	e and co	ntent	s]								
Overview 1	time											
Solution che	emistry o	of electroly	rtes, 2	times, acid	l-base re	eacti	ions, red	ox rea	ctions, equilil	brium of them.		
	rface as a	an interfac								s, explanation of f electrode potential		
Electrolysis electrodes).	, 1 time,	explanatio	n on	the importa	nce of t	hree	e electro	le seti	ıp (working, c	counter and reference		
	ard under	rstanding	of bat	teries and c	orrosioi	ı, ex				ion rate on a electrode tween current and		
Transfer of and liquid ju			natio	n on the tra	nsfer of	ion	s in solu	tion fo	or understand	ing diffusion potential		
Summary, 1	time.											
[Course r	equiren	rements										
Knowledge	· ·		nami	cs of Mater	ials 2 (l	oy P	rof. Uda) is pr	eferable.			
										科電気化学(材) (2) ↓ ↓ ↓		

-	nethods and policy]
 Class participation Class participation<	pation, (2) take-home assignments, and (3) exams. Students will sign a roll sheet every class examination to bail out low-performing students will not be given for any reason.
[Textbooks]	
A course bookle	t written in Japanese will be given out at the first lecture.
[References,	etc.]
(Reference	books)
[Study outsid	e of class (preparation and review)]
	the lectures will return after checking.
Brush up accord	ing to the reports returned.
	nation (office hours, etc.)) LASIS to find out about office hours.

原子炉基礎演習・実験(原)(2)
[Study outside of class (preparation and review)]
(Other information (office hours, etc.))
1) Registration to workers for radioactive material treatment is required before experiment.
2) English course for this experiment is opened.
*Please visit KULASIS to find out about office hours.
[Courses delivered by instructors with practical work experience]
(1) Category
A course with practical content delivered by instructors with practical work experience
(2) Details of instructors' practical work experience related to the course
(3) Details of practical classes delivered based on instructors' practical work experience

Course nu	umbe	er U-l	ENG25 45	5107 SJ28	U-EN	G25	45107	SJ77	U-ENG25 4	5107 SJ57	
Course title (and course title in English)			資習・実験 eactor Exer) (原) cise and Exp	eriments	nan and	tructor's ne, job tit I departm ffiliation	nent	Professor, UN Institute for Integra Professor, MI Institute for Integra Professor, NA Graduate Scl	ted Radiation and Nuclear Science VESAKI HIRONOBU ted Radiation and Nuclear Science (SAWA TSUYOSHI ted Radiation and Nuclear Science AKAJIMA KEN nool of Energy Science essor,PIYON CHIYORUHO	
Target yea	r	4th year stude	ents or above	2020/First semester							
Days and perio	ays and periods Mon.3,4 Class style Seminar anguaged instructor Japanese										
[Overview	and	d purpos	e of the	course]							
low power r	eacto	or are carri	ied out. Gi	uidance and	d lecture	es be	efore exp	perime		which is a small and med at Yoshida main -cho).	
[Course o	bjec	tives]									
Understandi experiments		uclear cha	racteristic	s and safet	y systen	n of	nuclear	reacto	r through rea	ctor physics	
[Course s	che	dule and	content	s]							
week. 1) gui measuremer	idanc it exp	e 2) critic periment 5	ality appro) operatio	barch expe	riment 3	i) co				-cho, Ōsaka) for 1 ment 4) neutron flux	
[Course re			•								
Basic knowl											
[Evaluatio				y]							
reports befo	re an	d after exp	periments								
[Textbook	s]										
Download fi	rom	Web site (Japanese,	English an	d Korea	ın ve	ersions a	ire ava	ilable)		
[Referenc	es, e	etc.]									
(Referen	nce	books)									
								_c	ontinue to 原子炉	基礎演習・実験(原)(2)↓↓↓	

										未更新
Course n	umber	U-EN	G25 1	5110 LJ71	U-EN	G25	15110	LJ77		
Course title (and course title in English)				8・9組) ring Scienc	e A	nam and	ructor's ne, job tit departm ffillation	tle, hent	Professor,HCl Graduate Sch Graduate Sch Professor,IW Graduate Sch Professor,IW Graduate Sch Professor,M. Graduate Sch Professor,M. Institute for Fror Senior Lecturer Graduate Sch Professor,SU Graduate Sch Professor,SU Graduate Sch Professor,HZ	hool of Engineering DUJIYOU MASAKI hool of Engineering sor,NISHIKAWA MASAAKI hool of Engineering AI HIROSHI hool of Engineering IROSE RYOUICHI hool of Engineering ATSUNO FUMITOSHI hool of Engineering ATSUBARA ATSUSHI titer Life and Medical Sciences DACHI TAIJI titer Life and Medical Sciences DACHI TAIJI titer Life and Medical Sciences DACHI TAIJI OKEYO, Kenedy Omodh hool of Engineering IZUKI MOTOFUMI hool of Engineering ISUO MASAHIRO hool of Engineering INDA KEI
Farget yea	r 1st	year students	or above	Number o	of cred	its	2	Year	/semesters	2020/Second semester
Days and peri				s style	Lecture	•			Language of instruction	Japanese
[Course o	bjectiv	res]						_		
[Course s	chedu	le and co	ntent	s]						
,10times, ,4times, ,1time,										
[Course r	equire	ments]								
None								_c	 ontinue to 物理工	

物理工学総論A(7・8・9組)(2)
[Evaluation methods and policy]
[Textbooks]
[References, etc.]
(Reference books)
[Study outside of class (preparation and review)]
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.

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Course n	umbe	r U-EN	G25 1:	5110 LJ71	U-ENG	G25	15110	LJ77			
Course title (and course title in English)		江学総論 A duction to E			2組)	Instructor's name, job title, and department of affiliation			Graduate School of Engineering Professor,HOUIJYOU MASAKI Graduate School of Engineering Associate Professor,NISHIKAWA MASAA Graduate School of Engineering Professor,ANAI HIROSHI Graduate School of Engineering Professor,MATSUNAO FUMITOSH Graduate School of Engineering Professor,MATSUNAO FUMITOSH Graduate School of Engineering Professor,MATSUBARA ATSUSI Institute for Fronier Life and Medical Scienc Professor,ADACHI TAUI Institute for Fronier Life and Medical Scienc Senior Lecture,OKEYO, Kennedy Omor Graduate School of Engineering Professor,ADACHI TAUI Graduate School of Engineering Professor,ASCHOOI of Engineering Professor,ASCHOOI of Engineering Professor,ASCHOOI of Engineering Professor,SUZUKI MOTOFUMI		
Target yea	ır	1st year students o	or above	Number	of credi	its	2	Yea	r/semesters	2020/Second semester	
Days and peri	ods V	Ved.2	Class	s style	Lecture	;			Language of instruction	Japanese	
[Overview	/ and	l purpose o	f the	course]							
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Guidance,2t Basic knowl detection. Intrusion De based IDS b issued from Intrusion De traffic by m Presentation	times. ledge etection y stu IDS etection achin n,1tim	Guidance on on the role o on by Signatu dying open so and communi on by Machir e learning alg	how t f IDS ire-Ba purce s ication he Lea gorithr he exe	this class is in network sed IDS,5ti signature-b- ns, and addi rning,7time ns and publ rcise, stude	security mes,Lea ased IDS ng signa es,Learn lic datase nts prese	and and an an ature the et fo ents	how n he mec d attack es to de method or bench their m	hanisn s, suci ect att of cla marki ethod	e learning can n of intrusion h as correspor tacks. assifying norm ing intrusion d	cility for this class.\ help the intrusion detection by signature- idence between alarms hal and malicious letection performance. detection using	
								(Continue to 物理工学	総論A(9・10・11・12組)(2)↓↓↓	

									未更新
Course n	umber	U-EN	G25 1	5111 LJ75	U-EN	G25 15111	LJ28	U-ENG25 1	5111 LJ77
Course title (and course title in English)		工学総論 B Luction to E			te B	Instructor's name, job ti and departn of affiliation	tle, nent	Professor,TS Graduate Sci Professor,UE Graduate Sci Associate Profe Graduate Sci Associate Profe Graduate Sci Professor,IA Graduate Sci Professor,TA Graduate Sci Professor,KA Graduate Sci Professor,KA Graduate Sci Professor,MU Graduate Sci Professor,MU Graduate Sci	ool of Engineering UJI NOBUHIRO oool of Engineering DA TETSUYA oool of Engineering ssor,KUROKAWA SHIYUU oool of Engineering ssor,FUKAM KAZUHIRO oool of Engineering SSOR JOHN SHIYOUJI oool of Engineering KAGI IKUJI oool of Engineering RAKAMI SADAYOSHI oool of Engineering RAKAMI SADAYOSHI oool of Engineering RAKAMI SADAYOSHI oool of Engineering ITOU MANABU oool of Engineering WANABE HIROSHI
Target yea	ir İst	t year students	or above	Number	of cred	lits 2	Yea	/semesters	2020/First semester
Days and peri	ods We	ed.2	Class	s style	Lecture	e		Language of instruction	Japanese
[Course o		-							
,1time, ,5times, ,4times, ,4times, ,1time,				~1					
[Course r None	equire						,	Continue to 物理⊤	学総論6 (7・8・9組) (2)↓↓↓

物理工学総論B(7・8・9組)(2)	物理	理:
[Evaluation methods and policy]	01	-
[Evaluation methods and policy]		_
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[Textbooks]	1 1	_
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[References, etc.]	4 1	
(Reference books)		
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[Study outside of class (preparation and review)]		(1
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		24.
(Other information (office hours, etc.))	15	Stι
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These visit ROLASIS to find our about office nours.	1 1	
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	*P	lea
[Courses delivered by instructors with practical work experience]	4 1	
 Category A course with practical content delivered by instructors with practical work experience 	1 1	
A course with practical content derivered by instructors with practical work experience	[0	20
(2) Details of instructors' practical work experience related to the course	(1)	
	A	
(3) Details of practical classes delivered based on instructors' practical work experience		
(3) Details of practical classes delivered based on instructors practical work experience	(2)) D
	(3)) D

-	equirements]	
None		
[Evaluation	n methods and policy]	
		_
[Textbook	s	
[Reference	es. etc.l	_
-	ice books)	
IC to all the second	side of slope (meansation and sociary)]	_
[Study out	side of class (preparation and review)]	
(Other inf	ormation (office hours, etc.))	_
*Please visit	KULASIS to find out about office hours.	
*Please visit	KULASIS to find out about office hours.	
[Courses of	delivered by instructors with practical work experience]	
[Courses of (1) Category	delivered by instructors with practical work experience]	
[Courses of (1) Category A course wit	delivered by instructors with practical work experience]	
[Courses of (1) Category A course wit	delivered by instructors with practical work experience] h practical content delivered by instructors with practical work experience	
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[Courses of (1) Category A course wit (2) Details of	delivered by instructors with practical work experience] h practical content delivered by instructors with practical work experience f instructors' practical work experience related to the course	

Course title (and course title in English) 加roduction to Engineering Science B English) 加roduction to Engineering Science B English 加roduction to Engineering Science B English 和department of affiliation 和department of Engineering Professor, IANTANI SHIYOUII Graduate School of Energy Science Professor, KANANABE HIROSH										木史新	
Course title (and course English) 物理工学総論 B(9・10・11・12組) Instructor's name, job title, and department of affiliation Instructor's (Graduate School of Engineering Associate Professor,FUKANI KAZU Graduate School of Engineering Professor,FAKAGI IKUJI Graduate School of Engineering Professor,KANNO IKUO Graduate School of Engineering Professor,KANNANS INUO Graduate School of Engineering Professor,KAWANABE HIROSH Icourse objectives] It year students or abov (Number of credits) 2 Year/semesters 2020/First semester Jays and periods Wed.2 Class style Lecture Impage instator Japanese [Course objectives]	Course n	umber	· U-EN	G25 1	5111 LJ75	U-EN	G25 15111	LJ28	U-ENG25 1	5111 LJ77	
The second se	(and course title in						name, job til and departm	nent	Professor, UDA TETSÜYA Graduate School of Engineering Professor, TSUJI NOBUHIRO Graduate School of Engineering Associate Professor, FUROKAM SHIYI Graduate School of Engineering Associate Professor, SEKO ATSUU Graduate School of Engineering Professor, SEKO ATSUU Graduate School of Engineering Professor, AANNO IKUU Graduate School of Engineering Professor, KANNO IKUO Graduate School of Engineering Professor, SATOU MANABU Graduate School of Engineering Professor, SATOU MANABU Graduate School of Engineering		
[Overview and purpose of the course] [Course objectives] [Course schedule and contents] Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this class.\ Basic knowledge on the role of IDS in network security and how machine learning can help the intrusion detection. Intrusion Detection by Signature-Based IDS,Stimes,Learn the mechanism of intrusion detection by signature-based IDS and attacks, such as correspondence between alarn based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarn tissued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicious traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance Presentation,1time,Based on the exercise, students presents their methods of intrusion detection using	Target yea	1 r 1	st year students	or above	Number of	of cred	lits 2	Yea	r/semesters	2020/First semester	
[Course objectives] [Course schedule and contents] Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this class.\ Basic knowledge on the role of IDS in network security and how machine learning can help the intrusion detection. Intrusion Detection by Signature-Based IDS,Stimes,Learn the mechanism of intrusion detection by signature based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarn based IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicious traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance Presentation,1time,Based on the exercise, students presents their methods of intrusion detection using	Days and peri-	ods W	ed.2	Class	s style	Lecture	e		Language of instruction	Japanese	
[Course schedule and contents] Guidance,2times,Guidance on how this class is operated, and how to use computing facility for this class.\ Basic knowledge on the role of IDS in network security and how machine learning can help the intrusion detection. Intrusion Detection by Signature-Based IDS,Stimes,Learn the mechanism of intrusion detection by signature based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarn issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicious traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance Presentation, Itime,Based on the exercise, students presents their methods of intrusion detection using	[Overview	/ and	purpose o	of the	course]						
Guidance, 2times, Guidance on how this class is operated, and how to use computing facility for this class.\ Basic knowledge on the role of IDS in network security and how machine learning can help the intrusion detection. Intrusion Detection by Signature-Based IDS, 5times, Learn the mechanism of intrusion detection by signature based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarn issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times, Learn the method of classifying normal and malicious traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance Presentation, lime,Based on the exercise, students presents their methods of intrusion detection using	[Course o	bject	ives]								
Basic knowledge on the role of IDS in network security and how machine learning can help the intrusion detection. Intrusion Detection by Signature-Based IDS,5times,Learn the mechanism of intrusion detection by signatur based IDS by studying open source signature-based IDS and attacks, such as correspondence between alarn issued from IDS and communications, and adding signatures to detect attacks. Intrusion Detection by Machine Learning,7times,Learn the method of classifying normal and malicious traffic by machine learning algorithms and public dataset for benchmarking intrusion detection performance Presentation,1time,Based on the exercise, students presents their methods of intrusion detection using	[Course s	ched	ule and co	ntent	s]						
Continue to 物理工学能論 B(9・10・11・12個)(2)」											

Course nu	umber	U-EN0	G25 45114 LJ	57 U-EN	IG25	5 45114	LJ53		
Course title (and course title in English)		基礎論(nentals of)	原) Nuclear Physi	cs	nar	tructor's ne, job ti d departn affiliation	nent	Assistant Pro Graduate Scl	hool of Engineering fessor,OGURE KENZOU hool of Engineering sor,MIYADERA TAKAYUKI
Target yea	r 4th	year students o	or above Numb	er of cree	dits	2	Year	/semesters	2020/First semester
Days and perio	ods Thu	.2	Class style	Lectur	re			Language of instruction	Japanese
[Overview	and p	urpose o	f the course	9]					
Basics of nu	clear st	ructure wil	1 be explained	l.					
[Course o									
To understar	nd nucle	ear structur	re by using qu	antum the	ory.				
[Course s	chedu	le and co	ntents]						
[Course re Quantum ph	la of nu nuclei, 's and fi 1 time, nes particle field, 2t time n of ach equiren ysics 1	clei,2times 2times, ssion,2tim , 1time imes nievement i ments] and 2	es, in study,1time	, ,					
[Evaluatio	n metl	hods and	policy]						
exam									
[Textbook	s]								
Not used	-								
[Referenc	es, etc	.]							
(Referer	nce bo	oks)							
[Study ou	tside c	of class (p	oreparation	and revie	ew)]				
solve proble	ms pres	ented in th	e lectures.						
Other in	format	ion (offic	e hours, etc	:.))					
*Please visit	KULA	SIS to find	l out about of	fice hours.					

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Course nu	umbe	er U-EN	G25 3	5115 LJ53	U-EN	G25	5 35115	LJ72		
Course title (and course title in English)		速器工学(原 iicle Accelerat				nar and	tructor's me, job til d departm affiliation	nent		nool of Engineering sor,TSUCHIDA HIDETSUGU
Target yea	r	Brd year students of	or above	Number	of cred	lits	2	Yea	r/semesters	2020/First semester
Days and perio				s style	Lectur	e			Language of instruction	Japanese
[Overview	/ and	d purpose o	f the	course]						
[Course o	bjec	ctives]								
	-									
[Course s	che	dule and co	nten	tsl		_				
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[Course re	equi	rements]								
None										
[Evaluation	n m	ethods and	noli	-v1		-				
Levaluatio	/11 111	ethous and	point	-y]						
[Textbook	(s]									
[Referenc	es, e	etc.]								
Refere	nce	books)				_				
[Study ou	tsid	e of class (p	orepa	ration an	d revie	w)1		_		
(										
		nation (offic								
*Please visi	t KU	LASIS to find	l out a	about office	e hours.					
1										

# [Evaluation methods and policy] Grading is based on the score of the periodic evaluations. Students will be evaluated based on their demonstrated understanding of the physicochemical properties and reactivity of radioactive materials and the engineering processes involved. [Textbooks] Other materials are not specified. Handouts, etc. will be distributed during lectures. [References, etc.]

(Reference books) Other, Radiochemistry and Nuclear Chemistry, 4th ed., G. R. Choppin et al., Elsevier (2013) isbn{ Nuclear Chemical Engineering, 2nd Ed., M. Benedict et al., McGraw-Hill (1981) isbn[0070045313], etc.

[Study outside of class (preparation and review)] Focusing on reviewing lecture content and exercises is advisable.

(Other information (office hours, etc.))

放射化学(エネ原)**(2)** 

半車新

Attend as needed. Some materials may be omitted or added depending on the number of classes in the relevant year.

*Please visit KULASIS to find out about office hours.

Course nu	umber	U-EN0	G25 3:	5116 LJ77	U-EN	G25	5 35116	LJ60		
Course title (and course title in English)		化学(エネ原) iochemistry of affiliation for affil								
Target yea	<b>r</b> 3rd	year students o	or above	Number o	of cred	its	2	Yea	r/semesters	2020/Second semester
Days and peri				s style	Lecture	•			Language of instruction	Japanese
[Overview	and p	urpose o	f the	course]						
	nical fu	ndamentals	s relate						of radioactive terials, and es	e waste, sential analytical
[Course o	bjectiv	/es]								
										and reactivity of ed on these principles.
[Course s	chedu	le and co	ntent	s]						
The main co 1) Atoms, nr 2) Mass, dec 3) Nuclides, 4) Dilution a 5) Cross-sec 6) Nuclear fi 7) Cycle ang 8) Overview 9) Actinide - 10) Chemica 11) Chemica 12) Electroo 13) Reproce 14) Waste tr 15) Feedbac	uclei, au ay and dating, unalysis tion, ap uel cycl gineerin of geo chemist analy analy therm hemisti ssing (c eatmen	nd isotopes half-life, ra tracer che , NAA plication (a e g: nuclear logical disp ry sis and spe iodynamics y (redox, e xtraction e t (ion exch	adiatic mistry analys fuel, s cosal ( ctrosc s (com lectric quilib ange r	on equilibrin sis, radiation melting, co (advance dis copy of actin pplexation, s c double lay reaction, mextra evaction, mextra	um mpound spersior nide and solubilit ver) ctant, co embrane	ls n, ch l fis y) ount	sion pro ercurrer	ducts		
[Course re N/A	equire	ments]								

Continue to 放射化学 (エネ原) (2)↓↓↓

Course nu	umber	U-ENG25 3	5118 LJ75						
Course title (and course title in English)		ギー・材料熱(l emistry for Energy a			nan and	tructor's ne, job ti I departn Iffiliation	tle, nent	Professor,HI Graduate Scl	hool of Energy Science RATOU TETSUJI hool of Energy Science or,HASEGAWA MASAKATSI
Target yea	<b>r</b> Brd ye	ear students or above	Number	of cred	its	2	Yea	r/semesters	2020/First semester
Days and perio	ods Mon.	3 Class	s style	Lecture	e			Language of instruction	Japanese
[Overview	and pu	rpose of the	course]						
		ide fundamenta ly materials pro						e necessary to	think about
[Course o	bjective	es]							
Students wil use phase di		to calculate the	rmochemi	cal prop	ertie	s of pu	e subs	stances, mixtu	res and solutions, and
[Course s	chedule	and content	s]						
Standard sta Review(1 w Feedback(1	eek) week)	vity(2 weeks)			_				
None	equirein	entsj							
[Evaluatio	n meth	ods and polic	:v1						
Results are e However, th	evaluated ere are ca	by a term-end ases where the	examinatio		es ir	the lec	tures a	are considered	l.
[Textbook									
Instructed du	uring clas	ŝs							
							,	Continue to T → II.ť	

	etc.]
( <b>Reference</b> David R. Gaskel Seshadri Seethar 9780080969862	1 "Introduction to metallurgical thermodynamics." (Scripta Pub. Co) ISBN:0070229457 aman ed. "Treatise on process metallurgy, vol.1 Process fundamentals." (Elsevier) ISB
(Related UR	RLs)
http://www.lupir	n.mtl.kyoto-u.ac.jp/class.html
[Study outsid	e of class (preparation and review)]
	eful for review, quizzes submitted will be returned after checking.
(Other inform	nation (office hours, etc.))
	ientific calculator and a ruler.

エネルギー・材料熱化学2(材エネ)(2)

9780080969862

(Related URLs) http://www.lupin.mtl.kyoto-u.ac.jp/class.html

[Study outside of class (preparation and review)] In order to be useful for review, quizzes submitted will be returned after checking.

(Other information (office hours, etc.))

Please bring a scientific calculator and a ruler.

*Please visit KULASIS to find out about office hours.

未更新

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Course nu	ımber	U-EN	G25 3	5119 LJ75						
Course title (and course title in English)				七学 2 (材 and Materials		nan and	tructor's ne, job ti I departn iffiliation	tle, nent	Professor,HI Graduate Scl	nool of Energy Science RATOU TETSUJI 1001 of Energy Science 0r,HASEGAWA MASAKATSU
Target yea	<b>r</b> 3rd	year students	or above	Number	of cred	its	2	Yea	r/semesters	2020/Second semester
Days and perio	ods Mo	n.2	Clas	s style	Lecture	e			Language of instruction	Japanese
[Overview This course environment	will pro	vide fund	amenta	als of therm					e necessary to	think about
[Course o Students wil use phase di	l be ab	e to calcul	ate the	ermochemio	cal prop	ertie	s of pur	e subs	stances, mixtu	res and solutions, and
[Course s Regular solu Gibbs-Duhe Henrian acti Gibbs phase Phase diagra Nernst equal Review(1 w Feedback(1	tion m m equa vity(1 v rule(3 m of te ion(1 v cek)	odel(3 wee tion(1 wee week) weeks) ernary syste	eks) ek)	-						
[Course re None	equire	ments]								
[Evaluatio Results are e However, th [Textbook Instructed du	valuate ere are <b>s]</b>	ed by a terr cases whe	n-end	examinatio		es in	the lec	tures a	are considered	L.
[Referenc (Referen David R. Ga Seshadri Sec	skell	oks) Introducti							cripta Pub. Co ss fundamenta	) ISBN:0070229457 ls』(Elsevier)ISBN:

Course number							
	U-ENG25 3:	5120 LJ75					
Course title (and course title in English)	析化学(材) cal Sciences		nai	tructor's me, job tit d departm affiliation	nent		nool of Engineering AWAI JIYUN
Target year Brd y	ear students or above	Number	of credits	2	Year	/semesters	2020/Second semest
Days and periods Wed.	.2 Class	s style	Lecture			Language of instruction	Japanese
[Overview and pu							
Quantum spectroche spectrometries which							ed. Various kinds of
[Course objective	es]						
The goal of the cours electrons, spin, princ forth, which are nece	iples of spectro	meters, qua	ntum mech				etween photons and o spectroscopy, and so
[Course schedule	e and content	s]					
<ol> <li>Matrix mechanics spectra.</li> <li>Perturbation theor</li> <li>Optical transition,</li> <li>Harmonic oscillatt</li> <li>Electron spectrosc interaction.</li> <li>Symmetry, Itime, S.</li> <li>Interaction betwee</li> <li>Angular moment</li> <li>Check of achieve</li> </ol>	y,2times,Time i 2times,Blackbo or,1time,Harmo copy,1time,Phot Symmetry of mo en electrons and tum and spin,1ti	ndependeni dy radiation nic oscillati oelectron sp olecules. Gr photons,2t	t perturbation. Time deport. WKB appectroscopy oup theory imes,IR and	on theory pendent p pproxima of trans . Projecti 1 Smekal	y applic perturb ation. F sition n ion ope l-Rama	ed to ionic cr ation. Tsallis field quantiza netal compou crator. an spectrosco	entropy. Electric ation. nds. Configuration py.
[Course requirem	nents]						
• •	nents]						
[Course requirem None [Evaluation meth	-	:y]			_		

材料分析化学(ネ	材)(2)
[Textbooks]	
J. Kawai, quotQua 9784901496759) i	antum Spectrochemistryquot, 2nd Edition, AGNE Gijutsu Center, Tokyo (2015).(ISBN: isbn{}{9784901496759}
[References, et	tc.]
(Reference b	
(Related URL	
	ess.mtl.kyoto-u.ac.jp/)
	• • • •
[Study outside	of class (preparation and review)]
(Other information	ation (office hours, etc.))
	ASIS to find out about office hours.

# 固体電子論(材)(2)

# [Evaluation methods and policy]

Final test, quizzes [Textbooks]

Printouts will be provided

# [References, etc.]

[Reference books] 『固体物理学入門(上)(下)』(丸善)ISBN:9784621076538 志賀正幸 『材料科学者のための固体電子論入門』ISBN:9784753655533

[Study outside of class (preparation and review)]

do exercises at course printouts

# (Other information (office hours, etc.)) In addition, course printouts will be distributed

*Please visit KULASIS to find out about office hours.

土面鉱

									木史新		
Course n	umber	U-ENG25 3	5121 LJ75								
Course title (and course title in English)		子論(材) Theory of Solid	ds		nam and	ructor's ne, job tit departm ffiliation	nent		nool of Engineering ssor,KUROKAWA SHIYUU		
Target yea	<b>r</b> Brd y	year students or above	Number	of cred	lits	2	Year	/semesters	2020/First semester		
Days and peri	ods Tue.	1 Clas	s style	Lecture	е			Language of instruction	Japanese		
[Overview	and pu	urpose of the	course]								
energy band such as met understandi structural ch	ls and the als and so ng of sen naracteris	e basics of band emiconductors of miconductor pro	theory. Ne can be expla perties base ectronic de	ext, we d ained by ed on inf vices su	liscu / thir form ch a	ss the fa nking in nation al s p-n ju	act that terms bout ba nction	t the electroni of band struc ands. We also s. Finally, we	w the concept of c properties of solids ture. Next, we gain an discuss the main explain the electronic potential.		
[Course o	bjectiv	es]									
	Understand concepts that are important in discussing electrons in solids (refer to syllabus). Understand general information concerning the electronic properties of metal and semiconductors.										
[Course s	chedul	e and content	ts]			_					
energy gaps zone schem Fermi surfat band diagra Rothery ruld Semiconduc Semiconduc Surface/inte structure of Latest topic the course of	, Bloch' es, recipr ces and b ms, diffe es. ctors, 4 cl of electro tors, p-n orface/def surfaces, s, 1 class werall an	s theorem, one rocal lattices an boand structure of prences between nlasses: Moveme on holes, Fermi l junctions, carri fect electronic s , work functions s: Discuss the la al confirm the d	e-dimension d Brillouin : f metal, 3 cl metal and i ent of Bloch level and ca er diffusion tates, 2 clas s, surface el test researcl	nal energy zones. lasses: T insulator n electron arrier den n, operati sses: Not lectronic h and teo	gy ba Three rs, ba ns ir nsity ing p tatio c stat chno	ands, red e-dimen and stru n electric , intrins principle n of ele tes. plogies 1	duced sional acture of c field sic sen es of tr ctron a	zones, expand lattice Fermi of metal, rigid s, concept of of niconductors, ransistors. arrangement i			
[Course r	•										
Students shu Scienceand		e completed the ring.	solid state	physics		rse offer			nt of Physical 【体電子論 〔权〕〔2〕↓↓↓		

Course nu	umb		U-FN	G25 3	5124 SJ71	LLEN	G25	35124	\$177		不又利	
Course In	anne	er	0 LIV	025 5	5124 5571	0 LIV	025	551241	5311			
Course title (and course title in English)	nd course Ile in Internship						Instructor's name, job title, and department of affiliation			Graduate School of Engineering Professor,HASUO MASAHIRO Graduate School of Engineering Professor,KUROSE RYOUICHI		
Target yea	r	3rd ye	d year students or above Number of credits 2 Year/semesters 2020/Intensive, Second semester									
Days and perio	ays and periods Intensive Class style Seminar language d'instruction Japanese											
[Overview	and	d pu	irpose d	f the	course]							
The aim of the internship is experiencing on-site activities involved production, manufacturing, development, designing and research of industrial goods at a factory or a research laboratory of Japanese leading companies. On-site learning of the importance of teamwork and production processes in manufacturing is also the aim.												
[Course o	bjeo	ctive	es]									
The goal of the internship is to master a general method of thinking and methodology at Mechanical Engineering. Furthermore, by learning the relationship between a human and machines at an industry, motivate oneself to study and think about one's career development.												
[Course s	che	dule	and co	ntent	s]							
internship su Internship lo the educatio	ich a ocational	ns IA on: E affai	ESTE ca Based on rs office	n be a recrui	cceptable. tment from	compar	ies.	You ca	n find	them at comp	weeks and an overseas oany's web sites and/or	
[Course re None	equi	irem	ents]									
					_							
[Evaluatio							500	() 1		(500())	1	
credits (2) a activities.	re aj	ppro	ved based	1 on th	e summary	report	,50%	b) and p	resent	ation (50%) a	bout the internship	
[Textbook	s]											
Not used												
[Referenc	es, (	etc.]										
(Refere	nce	boo	ks)									
[Study ou	tsid	e of	class (	orepa	ration and	d revie	w)]					
Consult with	the	inte	rnship ho	st loca	ation.							
(Other in	forn	natio	on (offic	e hou	urs, etc.))							
Pre-registrat	ion a	at the	e educatio	onal af	fairs office	of the I	Engi	neering	Scien	ce (Butsuri K	youmu) is required.	
*Please visit	KU	LAS	SIS to fin	d out a	bout office	hours.						

								未更新	
Course number	U-ENG25	35124 SJ71	U-EN	G25	35124	SJ77			
Course title (and course インタ title in Internst English)		原)		Instructor's name, job title, and department of affiliation			Graduate School of Engineering Associate Professor, TAISHI KOBAYASI		
Target year Brd	year students or abov	Number	of cred	its	2	Year	/semesters	2020/Intensive, Second semester	
Days and periods Inte			Language of instruction	Japanese					
[Overview and p	urpose of the	course]							
[Course objectiv	ves]								
[Course schedu	e and conten	ts]		_					
>>		-							
"									
[Course requirer	nents]								
None									
[Evaluation meth	nods and poli	cy]							
[Textbooks]									
[References, etc	1								
(Reference bo	-								
						C	continue to イン	ターンシップ(原)(2)↓↓↓	
L									

								112	
Course nu	mber	U-ENC	325 35125 LE7	7 U-EN	G25 35125	LE48			
Course title (and course title in English for Engineering Science Induced and department of affiliation Graduate School of Engineering Associate Professor, TAISHI KOBAYA									
Farget year	• 4th y	year students of	r above Number	r of cred	its 2	Year	/semesters	2020/Intensive, First semes	
Days and perio	ds Inte	nsive	Class style	Lecture	•		Language of instruction	Japanese and English	
[Overview	and p	urpose of	f the course]						
[Course ol	hingtiv	001							
100013801	ojectiv	<u>co]</u>							
[Course so	chedul	e and co	ntents]						
14times,									
,1time,									
[Course re	quirer	nents]							
None									
[Evaluatio	n meth	nods and	nolicy]						
	mmen	ious anu	policy]						
[Textbook	s]								
[Reference (Reference									
Referen	ice bo	OKS)							
[Study out	side o	f class (p	reparation a	nd revie	w)]				
-									
		-	e hours, etc.)						
*Please visit	KULA	SIS to find	l out about offic	e hours.					

Study outside of clas	s (preparation and review)]	
(Other information (o		
Please visit KULASIS to	find out about office hours.	
Courses delivered by	instructors with practical work experience]	
1) Category		
A course that includes off-	campus training classes.	
2) Details of instructors'	practical work experience related to the course	
<ol> <li>Details of practical class</li> </ol>	sses delivered based on instructors' practical work experience	

Course nu	umber	U-EN	G25 2	5127 LJ71								
Course title (and course title in English)				ネ宇) ing Process	ses	nar and	tructor's me, job tit d departm affiliation	nent	Graduate Sch Professor,MA Graduate Sch Professor,NI	ATSUB nool of	ARA A' Engineer	FSUSHI ring
Target yea	<b>r</b> 2nd y	ear students	or above	Number	of cred	lits	2	Yea	r/semesters	2020/1	First sem	lester
Days and perio	ods Mon.	.3	Class	s style	Lectur	e			Language of instruction	Japane	ese	
[Overview	/ and pu	irpose c	of the	course]								
[Course o	bjective	es]										
[Course s	chedule	e and co	ntent	ts]								
,3times,												
,4times, .7times.												
,/times, .4times.												
,1time,												
[Course re	equiren	nents]										
None	-											
[Evaluatio	on meth	ods and	polic	cv]								
Textbook	sl		_			_		_				
	-											
[Referenc	es, etc.	]										
(Refere		•										
					·			,	Continue to 機械調	。 会計製作	(機工ネ宇)	(2)↓↓↓

Study outside of clas	s (preparation and review)]	
Other information (o		
Please visit KULASIS to	find out about office hours.	
Courses delivered by	instructors with practical work experience]	
) Category		
*	ntent delivered by instructors with practical work experience	
2) Details of instructors'	practical work experience related to the course	
3) Details of practical clas	sses delivered based on instructors' practical work experience	
1	k the second sec	

[References, etc.]		
(Reference books)	)	
ntroduced during class		
[Study outside of cla	ass (preparation and review)]	
nstruct in class.		
(Other information	(office hours, etc.))	
Please visit KULASIS	to find out about office hours.	
-	by instructors with practical work experience]	
(1) Category		
(2) Details of instructors	practical work experience related to the course	
	1 11 ¹ 11 1 1 2 2 ³ 2 1 1 1	
<ol> <li>Details of practical c.</li> </ol>	lasses delivered based on instructors' practical work experience	

システム工学(エネ原)**(2)** 

Course nu	umber	r U-EN	G25 3	5128 LJ77							
Course title (and course title in English)	worse システム工学(エネ原) Systems Engineering name, job title, and department Graduate School of Energy Sci Professor, KAWANABE HIRC										
Target yea	<b>r</b> 3	rd year students o	or above	Number	of cred	its	2	Yea	r/semesters	2020/Second semester	
Days and perio	ays and periods Wed.1 Class style Lecture Languaged instruction Japanese										
[Overview and purpose of the course] Systems engineering is basic idea about a system assembled with some elements. In the course, modeling method of a system, function analysis, economical evaluation, optimization method and reliability analysis are offered. Also, energy system as one of application cases; a thermal and power plant is lectured. [Course objectives]											
			ethod	and charac	teristics	of s	vstem a	nalvsi	is.		
<ul> <li>To understand a variety of method and characteristics of system analysis.</li> <li>To acquire the basic knowledge to optimize the energy systems.</li> </ul>											
[Course s	ched	ule and co	ntent	s]							
		systems eng system. Also								stem and basic	
2. Schedule	plann		2): Le	ctures on th	e metho	od of	f a prog	ram fo	or work proces	sses. "Program	
		ming(5): Le of energy sy				the o	optimiza	ation c	of a system. Fo	or the application	
<ol> <li>Decision- optimizatior</li> </ol>		ng problem(2	2): Leo	ctures on a i	modelin	g of	decisio	n-mak	ting process a	nd method for	
5. System re	liabili	ity analysis(2	2): Le	ctures on a	system	desi	gn and r	eliabi	lity analysis n	nethod.	
6. Applicati	on for	a energy sys	stem(2	2): Systems	enginee	ring	g metho	d is ap	plied to therm	hal and power plants.	
[Course re	equir	ements]									
None											
[Evaluatio	n me	thods and	polic	>y]							
Evaluate by	repor	t(s) and exar	ninati	on.							
[Textbook	-										
Instructed d	uring	class									
								,	Continue to シス	¯テム工学(エネ原)(2)↓↓↓	

Course number								未更新	
	U-ENG25 35	5129 LJ75							
Course title (and course title in English)	Associate Profe Graduate Sch	nool of Engineering sssor,NOSE YOSHITAROU nool of Engineering sssor,SHIBATA AKINOBU							
Target year Brd ye	Brd year students or above Number of credits 2 Year/semesters 2020/F								
Days and periods Tue.3		style	Lecture	e			Language of instruction	Japanese	
[Overview and pu	Irpose of the	course]							
The properties of me processing. In this lea alloys from the atom practical materials ar	cture, we talk or istic viewpoints	n formation	n mecha	nisn	n on mic	cro- an	d nano-struct	ures in metals and	
[Course objective	-								
To study relationship mechanism of micros								understand formation	
[Course schedule	e and content	s]							
(1) Thermodynamics					2-3 wee	eks]			
(2) Phase transformation									
<ul><li>(3) Diffusionless pha</li><li>(4) Recrystallization</li></ul>			eksj						
(5) Feedback [1 weel		-+ weeksj							
[Course requirem	nents]								
None									
[Evaluation meth	ods and polic	;y]							
Evaluation will be ba									
In some cases, report	s and attend are	considered	d.						
[Textbooks]									
Utilizing resumes pro	ovided in the lec	cture.							
[References, etc.]									
(Reference boo									
Introduced during cla	155								
[Study outside of	class (prepa	ration and	d revie	w)]					
To review contents in			ecture.						
(Other information									
*Please visit KULAS	SIS to find out a	bout office	hours.						

										未更新
Course nu	umbe	er U-E	NG25 3	5130 LJ57						
Course title (and course title in English)		古学(原 istical Mecl				nar anc	tructor's ne, job tit I departm affiliation	nent		hool of Engineering ofessor,TASAKI SEIJI
Target yea	r	3rd year studen	ts or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and peri				s style	Lecture	e			Language of instruction	Japanese
[Overview	/ and	l purpose	of the	course]						
[Course o	hing	tiveel				_				
[Course o	bjec	lives								
10	ah c			-1						
[Course s .3times.	cned	dule and d	onten	isj						
,5times,										
,2times,										
,2times,										
,2times, .1time.										
, rume,										
[Course re	equi	rements]								
None										
[Evaluatio	on m	ethods ar	d poli	cy]						
Textbook	re]									
1.010000	.91									
Deference	<u> </u>	1								
[Referenc (Referenc										
	1001	books/								
[Study ou	tside	e of class	(prepa	ration an	d revie	w)]				
(Other in	form	nation (off	ice ho	urs, etc.))						
*Please visit	t KU	LASIS to f	nd out a	about office	hours.					

機械システム学演習(機)(2)	
[Textbooks]	
10-1	
[References, etc.] (Reference books)	
[Study outside of class (preparation and review)]	
(Other information (office hours, etc.))	
Please visit KULASIS to find out about office hours.	
[Courses delivered by instructors with practical work experience]	
(1) Category	
A course with practical content delivered by instructors with practical work experience	
(2) Details of instructors' practical work experience related to the course	
(3) Details of practical classes delivered based on instructors' practical work experience	
., F F F	

											未更新
Course nu	ımbe	er U-EN	G25 3	5131 SJ71							
Course title (and course title in English)		載システム学 cise on Mechan			gineering	nan and	ructor's he, job tit departm ffiliation	nent	Senior Lectur Graduate Sc Associate Pro Graduate Sc	hool of Engin er,NAKANISH hool of Engin ofessor,IZUI K hool of Engin OKOKAWA	I HIROAKI eering AZUHIRO eering
Target yea	r	3rd year students	udents or above Number of credits 1 Year/sen							2020/Intensive, semester	Second
Days and peri	ods I	Intensive	Clas	s style	Semina	ır			Language of instruction	Japanese	
[Overview	and	d purpose o	of the	course]							
This semina advance (in			e on v	arious topic	s in mec	char	iical eng	gineeri	ng. Students	should registe	er in
[Course o	bjec	tives]									
[Course s	che	dule and co	nten	ts]							
,,											
"											
"											
»» »											
,,											
"											
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»» »											
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"											
,,											
"											
[Course re	equi	irements]									
None											
[Evaluatio	n m	ethods and	l poli	cy]							
Depends on	topic	cs.									
								c	Continue to 機械	システム学演習(	機)(2)↓↓↓

Course title (and course title in English)         物質科学基礎 Fundamentals of Materials Science         Instructor's name, job title, and department of affiliation         Graduate School of Engineering Professor,MURASE KUNIAKI           Target year         End year students or above         Number of credits         2         Year/Semesters         2020/First semester										
Target year	2nd y	ear students or above	Number o	of cred	its 2	Yea	r/semesters	2020/First semester		
Days and perio	ds Fri.3	Class	s style	Lecture			Language of instruction	Japanese		
[Overview	and pu	rpose of the	course]							
								(descriptive method) ence and materials		
[Course of	ojective	es]								
materials eng	gineering	g. In this course	students le	arn basi	c technica	l terms	and develop f	als science and fundamental concepts sience and materials		
[Course so	hedule	and content	ts]							
Fundamental symmetry an lattice plane a Fundamental ions; Covalea Inorganic sol defects; Ionic Fundamental ray scattering diffractometri	s of crys d space : and lattic s of cher ncy and lid-state c conduc s of diffi g and dif ry; Laue	symmetry; Latt ce direction; Fr mical bond theo ionicity; Defini materials, 3 tim ction and solid of raction crystallo fraction (Bragg	3 times, Clo tice and unit actional coo ory, 2 times ition of elec mes, Structure electrolytes; ography, 5 t g condition,	se pack t structu ordinate , Electro tronega re of im Crystal times, G structur	ing and ho re; Crystal s. ponic config tivity. portant ior l field and generation e factor, e:	systen guration nic crys optical and pro xtinctio	h and Bravais a and shielding tals; Stoichior properties of operties of X-r	of metals; Point lattice; Depiction of g; Size of atoms and netry and lattice d-block elements. ay; Fundamentals of X ler X-ray		
[Course re	quirem	nents]								
Knowledge o	of physic	s and chemistr	y for the en	trance e	xaminatio	n of Ky	oto University	y.		
[Evaluation	n meth	ods and polic	cy]			_				
Students will	l sign a r	oll sheet every	class. Ten v	vritten t	ake-home	assignr	nents are due	ns (approx. 50%). throughout the given for any reason.		

[Textbooks]	
No textbook is required for th	is course. A course booklet will be given out at the first lecture.
[References, etc.]	
(Reference books) B. D. Cullity, S.R. Stock [E]	lements of X-Ray Diffraction (3rd ed.) [ (Prentice Hall) ISBN:
780201610918	•
2. Smart, E. Moore ↓Solid S 9781439847909	tate Chemistry: An Introduction (4th ed.)』 (CRC Press) ISBN:
	mistry and Its Applications (2nd ed.)』 (Wiley) ISBN:9781119942948
(Related URLs)	
Not available)	
Study outside of class (	preparation and review)]
The take-home assignments a eview.	nd their suggested answers should effectively be used for preparation and
(Other information (offic	ce hours, etc.))
lot available	
Please visit KULASIS to fin	d out about office hours.
Please visit KULASIS to fin	d out about office hours.
*Please visit KULASIS to fin	d out about office hours.

								木史新		
Course nu	mber	U-ENG	25 25135 LJ75							
Course title (and course title in English) Fundamentals of Materials Science I I Instructor's name, Job title, and department of affiliation Graduate School of Engineering Associate Professor, NOSE YOSHITAROU										
Target year	• 2nd	d year students or	above Number	of cred	lits 2	Yea	r/semesters	2020/Second semest		
Days and perio	ds We	d.1 C	lass style	Lectur	e		Language of instruction	Japanese		
[Overview	and p	ourpose of	the course]							
the knowled	ge, to s	study fundam		istics of	lattice def	ects an	d properties in	c interaction. Based or crystalline solid		
[Course of	bjectiv	ves]								
			n a way of cons on crystals and			and dif	fusion and me	chanical properties in		
[Course se	chedu	le and con	tents]							
(7) Deformat (8) Feedback	tion tw t 【1 w	vinning and c	rystalline metal reep deformatio							
[Course re	quire	mentsj								
A end-term e	examin	hods and p nation will be ing determina	a main part of	grading	determina	tion. A	ttendance and	daily reports may be		
[Textbook	s]			_						
-	-	provided in th	ne lecture.							
[Reference	es, etc	c.]								
(Referer Introduced d										
[Study out	side	of class (pr	eparation and	d revie	w)]					
To review co	ontents	in the last ti	me before the le	ecture.						
		•	hours, etc.))							
A part of the	mes w	ill be added	or omitted depe	ending o	n a numbe	r of cla	sses in the terr	n		
*Please visit	KUL4	ASIS to find	out about office	e hours						
ricuse visit		ioro to mid	our about office	nouis.						

											未更新	
Course nu	umber	r	U-EN	G25 2	5134 LJ75							
Course title (and course title in English) Katistical Physics of Materials Statistical Physics of Materials									tle, nent	Graduate School of Engineering Associate Professor,TABATA YOSHIKAZU Graduate School of Engineering Associate Professor,YUGE KORETAKA		
Target yea	<b>r</b> 2	nd yea	ir students	or above	Number	of cred	lits	2	Yea	r/semesters	2020/Second semester	
Days and perio	ods Tu	ue.2		Class	s style	Lecture	e			Language of instruction	Japanese	
[Overview	and	pur	pose o	of the	course]							
[Course objectives]												
[Course s	ched	lule	and co	ntent	s]							
First and sec Thermodyna Analytical n Basic of clas ,3times, Quantum sta Check of acc	amic f nechai ssical atistica quisiti	funct nics stati al th ion, l	ions, Ph and con stical th ermodyn time,	ase Eo cept o ermod	quilibrium f statistical ynamics,2t	and Pha mechan	se T	ransitio		ies,		
[Course re	equir	eme	entsj									
IVOIIC												
[Evaluatio	on me	etho	ds and	polic	¢y]							
[Textbook	s]											
[Referenc	es, e	tc.]										
(Referer	nce b	ook	(s)									
[Study ou	tside	of	class (j	orepa	ration an	d revie	w)]					
(Other in	form	atio	n (offic	e hou	urs, etc.))							
*Please visit	t KUL	ASI	S to fin	d out a	bout office	hours.						
							_					

Course number U-ENG25 25136 LJ75										
Course title (and course title in English)		が料料学基礎2(材工ネ) undamentals of Materials Science II and department of affiliation							ofessor,ICHII TAKASHI hool of Engineering essor,SHIBATA AKINOBU hool of Engineering	
Target yea	r 2nd y	ear students or a	bove Number	of cred	its	2	Year	/semesters	2020/Second semester	
Days and peri	ods Thu.	2 <b>CI</b>	ass style	Lecture	e			Language of instruction	Japanese	
[Overview and purpose of the course]										
This lecture focuses on symmetry, tensor and elastodynamics that are of importance for materials science.										
[Course o										
To understa	nd the ro	le of symme	etry, tensor and	l elastod	ynai	nics on	mater	ials science.		
[Course s	chedul	e and cont	ents]							
Vector and tensor,4-5times,Fundamentals of vector and tensor Symmetry in molecules and crystals,4-5times,Fundamentals of symmetry in molecules and crystals Elastodynamics,4-5times,Fundamentals of elastodynamics										
[Course r	equiren	nents]								
Fundamenta	ils of the	rmodynamic	:S							
[Evaluatio	on meth	ods and p	olicy]							
Grading is d	lue to the	term-end e	xamination. Th	ie record	1 of	attendar	nce ma	ıy be taken in	to account.	
[Textbook	(s]									
Handouts w	ill be giv	en in lecture	es.							
[Referenc	es, etc.	]								
(Reference books)										
[Study ou	tside o	class (pre	eparation and	d revie	w)]					
(Other in	formati	on (office	hours, etc.))							
*Please visi	t KULA	SIS to find o	ut about office	hours.						

	umbe	r U-EN	325 35	5139 LJ76							
Course title (and course title in English)		ルギー化学 gy chemistry	ビ学1(エネ原) stry l			Instructor's name, job title, and department of affiliation			Graduate School of Energy Science Professor,HAGIWARA RIKA		
Farget yea	ır 3	ord year students of	year students or above Number of crec				2	Year	r/semesters	2020/First semester	
Days and peri	ods Ti	ue.2	Class	style	Lecture	e			Language of instruction	Japanese	
[Overviev	v and	purpose o	f the	course]							
[Course s Atomic strue electronic st potential, el 3times,Und crystal, clos 2times,The be described 3times,Che theory, mol radii, bond d ,2times,Syn to molecula 3times,Cor	cture, tructure ectror derstar e pacle facto d. The emical ecular energy nmetry r orbit acepts	lule and co 2times,Unde re of many-e a affinity and nding of fund king structure rs such as ion rmochemistr bonding the geometry ar y will be desc y operation a uals, moleculi and theory o	ntent rstandi lectron ament electron ament c, meta nic rad y of sc ory an d VSE cribed. nd syn ar vibr f Bron	s] ing of fund a atoms, ato onegativ. als of inorgus, iii, coordina blid compoo d energetic 2PR theory nmetry eler ation, vibra sted acids a	amental omic rad ganic so intermet tition nu unds wi s such a , hybrid nents, n ational s and base	s of lii, io lid st tallic mber ll be s Le izationolec pectr pectr es, L	inorgar onic rad tate che compo r, lattice discuss wis stru on orbi cular po roscopi ewis ac	nic che lii, lant emistry ounds, e energ sed. acture, tal, mo bint gro es will cids an	thanide contra such as cryst ionic crystals gy affecting the resonance stra olecular orbita oups will be d l be discussed	s atomic orbital, action, ionization al lattice, symmetry of and covalent crystals he crystal structure will ucture, valence bond l, bond length, bonding escribed. Applications reactions, solvent	
	equir	ements]									
[Course r											
•											
None	on me	ethods and	polic	y]							

_____Continue to エネルギー化学 1 (エネ原) (2)↓↓↓

Target year         bit year students or above         Number of credits         2         Year/semesters         2020/Second seme           Days and periods         Fri.4         Class style         Lecture         argupt distude         Japanese           [Overview and purpose of the course]         The lecturer teaches fundamental matters in inorganic chemistry related to energy conversion and storage. particular, Redox reactions, analytical methods, molecular geometries, and coordination chemistry as well electrochemical energy conversion devices will be lectured.           [Course objectives]         Understanding fundamental matters on energy conversion and utilization related inorganic chemistry as well steir relations to daily life and state-of-the-art researches           [Course schedule and contents]         1.         Oxidation and Reduction, 3times, reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of th elements           2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations           3. An introduction to coordination chemistry, 2 times           Ianguage of coordination chemistry, 2 times           Ianguage of mation           4. Physical techniques in inorganic chemistry, 2 times           Ianguage of portion spectroscopy, resonance techniques, ionization-based techniques, chemica analysis, magnetometry, electrochemical techniques, microsope techniques           5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time per	Course title (and course title in English)		ギー化学 chemistry		\$原)	na	structor's ame, job ti ad departn affiliation	tle, nent		hool of Energy Scie sor,MATSUMOTO KAZU
[Overview and purpose of the course]           The lecturer teaches fundamental matters in inorganic chemistry related to energy conversion and storage, particular, Redox reactions, analytical methods, molecular geometries, and coordination chemistry as well electrochemical energy conversion devices will be lectured.           [Course objectives]         Understanding fundamental matters on energy conversion and utilization related inorganic chemistry as well steir relations to daily life and state-of-the-art researches           [Course schedule and contents]         1. Oxidation and Reduction, 3times, reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of the elements           2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations           3. An introduction to coordination chemistry, 2times           language of coordination chemistry, constitution and geometry, isomerism and chirality, thermodynamics complex formation           4. Physical techniques in inorganic chemistry, 2 times           analysis, magnetometry, electrochemical techniques, microsope techniques, ionization-based techniques, chemicar analysis, specific characteristics of compounds, hydrogen, alkali metal, and alkali earth metal compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries)           6. Group 13, 14, 15, and 16 elements, 1 time boron, altumium, carbon, silkon, nitrogen, and chalcogen compounds, topics related to energy chemistry (carbonaceous materials, solar cells, energy resources)           7. Exercises and comments, 3 times	Target yea	<b>r</b> Brd y	ear students o	or above <b>Nu</b>	umber	of credits	2	Year	/semesters	2020/Second seme
The lecturer teaches fundamental matters in inorganic chemistry related to energy conversion and storage. particular, Redox reactions, analytical methods, molecular geometries, and coordination chemistry as well electrochemical energy conversion devices will be lectured. [Course objectives] Understanding fundamental matters on energy conversion and utilization related inorganic chemistry as well as their relations to daily life and state-of-the-art researches [Course schedule and contents] 1. Oxidation and Reduction, 3times, reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of the elements 2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations 3. An introduction to coordination chemistry, 2times language of coordination chemistry, constitution and geometry, isomerism and chirality, thermodynamics complex formation 4. Physical techniques in inorganic chemistry, 2 times diffraction methods, absorption spectroscopy, resonance techniques, ionization-based techniques, chemica analysis, magnetometry, electrochemical techniques, microsope techniques 5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time periodic properties, periodic characteristics of compounds, hydrogen, alkali metal, and alkali earth metal compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries) 6. Group 13, 14, 15, and 16 elements, 1 time periodic properties, periodic characteristics of compounds, topics related to energy chemistry (carbonaceous materials, solar cells, energy resources) 7. Exercises and comments, 3 times Exercises and comments on the topics in this lecture	Days and peri	ods Fri.4		Class s	tyle	Lecture			Language of instruction	Japanese
particular, Redox reactions, analytical methods, molecular geometries, and coordination chemistry as well electrochemical energy conversion devices will be lectured. <b>[Course objectives]</b> Understanding fundamental matters on energy conversion and utilization related inorganic chemistry as well as their relations to daily life and state-of-the-art researches <b>[Course schedule and contents]</b> 1. Oxidation and Reduction, 3times, reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of the elements 2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations 3. An introduction to coordination chemistry, 2times language of coordination chemistry, constitution and geometry, isomerism and chirality, thermodynamics complex formation 4. Physical techniques in inorganic chemistry, 2 times diffraction methods, absorption spectroscopy, resonance techniques, ionization-based techniques, chemication 5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time periodic properties, periodic characteristics of compounds, hydrogen, alkali metal, and alkali earth metal compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries) 6. Group 13, 14, 15, and 16 elements, 1 time boron, aluminum, carbon, silicon, nitrogen, and chalcogen compounds, topics related to energy chemistry (carbonaceous materials, solar cells, energy resources) 7. Exercises and comments, 3 times Exercises and comments on the topics in this lecture	•				-					
Understanding fundamental matters on energy conversion and utilization related inorganic chemistry as w as their relations to daily life and state-of-the-art researches <b>[Course schedule and contents]</b> 1. Oxidation and Reduction, 3times, reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of th elements 2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations 3. An introduction to coordination chemistry, 2times language of coordination chemistry, 2times (anguage of coordination chemistry, 2 times (diffraction methods, absorption spectroscopy, resonance techniques, ionization-based techniques, chemica analysis, magnetometry, electrochemical techniques, microsope techniques 5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time periodic properties, periodic characteristics of compounds, hydrogen, alkali metal, and alkali earth metal compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries) 6. Group 13, 14, 15, and 16 elements, 1 time boron, aluminum, carbon, silcon, nitrogen, and chalcogen compounds, topics related to energy chemistry (carbonaceous materials, solar cells, energy resources) 7. Exercises and comments on the topics in this lecture	particular, R	edox rea	ctions, ar	alytical 1	methods,	molecula	r geometi			
as their relations to daily life and state-of-the-art researches  [Course schedule and contents]  1. Oxidation and Reduction, 3times, reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of th elements 2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations 3. An introduction to coordination chemistry, 2times language of coordination chemistry, 2times complex formation 4. Physical techniques in inorganic chemistry, 2 times diffraction methods, absorption spectroscopy, resonance techniques, ionization-based techniques, chemica analysis, magnetometry, electrochemical techniques, microsope techniques 5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time periodic properties, periodic characteristics of compounds, hydrogen, alkali metal, and alkali earth metal compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries) 6. Group 13, 14, 15, and 16 elements, 1 time boron, aluminum, carbon, siltcon, nitrogen, and chalcogen compounds, topics related to energy chemistry (carbonaceous materials, solar cells, energy resources) 7. Exercises and comments, 3 times Exercises and comments, 0 times	[Course o	bjective	es]							
Oxidation and Reduction, 3times,     reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of th     elements     2. Molecular symmetry, 2times,     an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals,     representations     3. An introduction to coordination chemistry, 2times     language of coordination chemistry, constitution and geometry, isomerism and chirality, thermodynamics     complex formation     4. Physical techniques in inorganic chemistry, 2 times     diffraction methods, absorption spectroscopy, resonance techniques, ionization-based techniques, chemici     analysis, magnetometry, electrochemical techniques, microsope techniques     5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time     periodic properties, periodic characteristics of compounds, hydrogen, alkali metal, and alkali earth metal     compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries)     6. Group 13, 14, 15, and 16 elements, 1 time     porton, aluminum, carbon, silton, nitrogen, and chalcogen compounds, topics related to energy chemistry     (carbonaceous materials, solar cells, energy resources)     7. Exercises and comments, 3 times     Exercises and comments, 0 times								ization	related inorg	anic chemistry as w
reduction potentials, redox stability, diagrammatic presentation of potential data, chemical extraction of th elements 2. Molecular symmetry, 2times, an introduction to symmetry analysis, applications of symmetry, symmetries of molecular orbitals, representations 3. An introduction to coordination chemistry, 2times language of coordination chemistry, constitution and geometry, isomerism and chirality, thermodynamics complex formation 4. Physical techniques in inorganic chemistry, 2 times diffraction methods, absorption spectroscopy, resonance techniques, ionization-based techniques, chemica analysis, magnetometry, electrochemical techniques, microsope techniques 5. Periodic trends, Hydrogen, Group 1 and 2 elements, 1 time periodic properties, periodic characteristics of compounds, hydrogen, alkali metal, and alkali earth metal compounds, topics related to energy chemistry (hydrogen energy system, secondary batteries) 6. Group 13, 14, 15, and 16 elements, 1 time boron, aluminium, carbon, silicon, nitrogen, and chalcogen compounds, topics related to energy chemistry (carbonaceous materials, solar cells, energy resources) 7. Exercises and comments, 3 times Exercises and comments on the topics in this lecture	[Course s	chedule	e and co	ntents]						
	representation 3. An introd language of complex for 4. Physical th diffraction r analysis, ma 5. Periodic tr periodic pro compounds, 6. Group 13 boron, alum (carbonaceo 7. Exercises an	ons uction to coordina mation echnique nethods, gnetome rends, H perties, p topics re , 14, 15, inium, ca us mater and com	coordina tition chen es in inorg absorptio try, electr ydrogen, beeriodic cl elated to e eriodic cl elated to e and 16 eli arbon, sili ials, solar uments, 3	tion chern nistry, co ganic chern n spectro cochemic: Group 1 si haracteris- nergy ch ements, 1 con, nitro cells, en times	mistry, 2 mistry, 2 scopy, n al techni and 2 ele stics of c emistry time ogen, and ergy rese	times n and geor 2 times esonance t ques, mici ements, 1 t ompounds (hydrogen d chalcoge purces)	netry, iso echnique osope teo ime , hydrogo energy s	omerisi es, ioniz chniqu en, alk ystem,	n and chiralit zation-based es ali metal, and secondary ba	y, thermodynamics techniques, chemica l alkali earth metal atteries)

エネルギー化学1	(エネ原)	(2)	
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_____ [Textbooks]

hriver amp Atkins#039 Inorganic Chemistry, the 6th ed., Oxford University Press.

[References, etc.]

(Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

Homeworks will be occasionally assigned as supplementary exercises. Depending on the progress in the class, schedule may be partially changed. Homeworks and supplementary materials are provided at URL:http://www.echem.energy.kyoto-u.ac.jp The text book will be used in Energy chemistry II held in fall semester.

*Please visit KULASIS to find out about office hours.

エネルギー化学2(エネ原)(2)

_ _ _ _ _ _ _ _ _ _ [Course requirements]

udents are supposed to understand the lecture "Energy Chemistry 1".

[Evaluation methods and policy]

Evaluation will be based on assignments and exercises (40 %) and final examination (60%).

[Textbooks]

Shriver & Atkins; Inorganic Chemistry (6th Ed.) ISBN 9784807908981 which is used in Energy Chemistry 1. isbn{}{9784807908981}

[References, etc.]

(Reference books)

[Study outside of class (preparation and review)] Reading the textbook and reviewing the assignments are recommended.

(Other information (office hours, etc.))

Assignments are given every week to support understanding of the lecture.

*Please visit KULASIS to find out about office hours.

										未更新
Course n	umber	U-EN	G25 35	141 LJ53	U-EN	G25	35141	LJ77	U-ENG25 3	5141 LJ57
Course title (and course title in English)	(and course 中性子理工学 (原) heutron Physics and Engineering and department of affiliation									
Target yea	<b>r</b> Brd	year students	or above	Number	of cred	lits	2	Yea	r/semesters	2020/Second semester
Days and peri	ods Tue.	.3	Class	style	Lectur	e			Language of instruction	Japanese
[Overview	/ and p	urpose o	of the o	course]						
[Course o	bjectiv	es]								
[Course s	chedu	e and co	ntents	s]						
,1time,										
,1time,										
,1time,										
,4times,										
,2times,										
,3times, .2times.										
,1time,										
[Course r	equirer	nents]								
None										
[Evaluatio	on meth	nods and	polic	y]						
[Textbook	(s]									
[Referenc		-								
(Refere	nce bo	oks)								
[Study ou	tside o	f class (j	orepar	ation and	d revie	w)]				
(Other in										
*Please visi	t KULA	SIS to fine	d out al	bout office	hours.					

# 流体力学1(機)**(2)**

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(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

# [Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

Courses mumb	an UE	ING25.24	5142 LJ77	LI EN	G25 2514	2 1 171		小之初
Course numb	er 0-1	311025 2.	7142 LJ77	0-LIV	025 2514	2 LJ/1		
Course title (and course 流仇 title in English)	本力学 1 ( id Dynamic				Instructor name, job and depar of affiliatio	title, tment		nool of Engineering JROSE RYOUICHI
Target year	2nd year stude	nts or above	Number	of cred	its 2	Yea	r/semesters	2020/Second semester
Days and periods			s style	Lecture	•		Language of instruction	Japanese
[Overview an								
Fundamental of N-S equations),								avier-Stokes equations, layer flow.
[Course obje	ctives]							
Understanding of	of the princi	ple of flu	id flow.					
[Course sche	dule and	content	s]					
1 time : Introduc 2 time : Stationa 4 times: Viscour 5 times: Macros 2 times: Exercis 1 times: Summa	ary fluid s fluid (Lan copic expre e							
[Course requ	irements]							
N/A								
[Evaluation n	nethods a	nd polic	y]					
Term-end exam								
[Textbooks]								
Instructed durin	g class							
[References,	etc.]							
(Reference								
[Study outsic	le of class	s (prepa	ration and	d revie	w)]			
Instructed durin		4 . P.			,,			
							Continue to 流	[体力学1  (機) (2)↓↓↓

										未更新	
Course nu	umbe	r U-ENG	G25 2:	5142 LJ77	U-EN	G25	5 25142	LJ71			
Course title (and course title in English)		:力学1(エ 1 Dynamics1	ネ原言	字)		nan and	tructor's ne, job ti I departr affiliatior	tle, nent	Graduate School of Engineering Associate Professor,OOWADA TAKU Graduate School of Engineering Senior Lecturer,SUGIMOTO HIROSHI		
Target yea	r	2nd year students of	or above	Number	of cred	lits	2	Yea	r/semesters	2020/Second semester	
Days and perio	ods T	ue.2	Class	s style	Lectur	e			Language of instruction	Japanese	
[Overview	and	l purpose o	f the	course]							
[Course o	bjec	tives]									
[Course s	cheo	lule and co	ntent	s]							
										cility for this class.\	
Basic knowl detection.	edge	on the role o	f IDS	in network	securit	y and	d how n	nachin	e learning car	help the intrusion	
	tectio	on by Signatu	ire-Ba	sed IDS,5ti	imes,Le	arn t	the mec	hanisr	n of intrusion	detection by signature-	
based IDS b	y stu	dying open so	ource s	signature-b	ased ID	S an	d attacl	cs, suc	h as correspor	ndence between alarms	
		and communi								1 1 1 .	
										hal and malicious letection performance.	
										detection using	
machine lear	rning	, and discuss	it with	h other stud	lents an	d ins	structors	8.			
[Course re	aui	rements1				_					
None	1	,									
[Evaluatio	n m	ethods and	polic	sy]							
[Textbook	s]										
F								(	Continue to 流体	:力学1 (エネ原宇) (2)↓↓↓	
1											

(Reference books) Study outside of class (preparation and review)] (Other information (office hours, etc.))	[References, etc.]	
(Other information (office hours, etc.))		
(Other information (office hours, etc.))		
(Other information (office hours, etc.))	Quality and all of all on the section and an investigation	
	Study outside of class (preparation and review	1
Please visit KULASIS to find out about office hours.	(Other information (office hours, etc.))	
	Please visit KULASIS to find out about office hours.	

											未更新
Course nu	umbe	er	U-EN	G25 3	5143 LJ71	U-EN	G25	5 35143	LJ77		
Course title (and course title in English)			学2(エ /namics2		1		nar anc	tructor's ne, job ti I departn affiliation	nent	Associate Pro Graduate Sch	tool of Engineering fessor,OOWADA TAKU tool of Engineering er,SUGIMOTO HIROSHI
Target yea	r	3rd ye	ear students	or above	Number	of cred	lits	2	Year	/semesters	2020/First semester
Days and perio					s style	Lecture	e			Language of instruction	Japanese
[Overview	and	d pu	irpose c	of the	course]						
		_									
[Course o	bjec	tive	es]								
[Course s	che	dule	and co	nten	ts]						
,2times, ,3times, ,3times, ,6times, ,1time, ICourse re None IEvaluatio			-	poli	cy]						
[Textbook	s]										
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[Study ou						d revie	w)]				
(Other in *Please visit						hours.					

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Course n	umb	er	U-EN	G25 3	5143 LJ71	U-EN	G25	35143	LJ77		
Course title (and course title in English)			学2(機 vnamics2				nam and	ructor's ne, job tit departm ffiliation	nent		hool of Engineering ANAZAKI HIDESHI
Target yea	r	3rd ye	ar students	or above	Number	of cred	its	2	Year/	semesters	2020/First semester
Days and peri	ods	Гhu.2	!	Class	s style	Lecture	e			Language of instruction	Japanese
[Overview	/ an	d pu	rpose c	of the	course]						
[Course o	bje	ctive	es]								
[Course s	che	dule	and co	ntent	s]						
,2times,											
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.1time.											
.2times.											
, 1 times,											
[Course r			ents]								
Fluid Dynar											
[Evaluation	on n	nethe	ods and	l polio	>y]						
[Textbook	(s]										
[Referenc	es,	etc.]									
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G. K. Batch 0521041182	elor X}, (	, An l 同, 2	Introduct 000) isbi	ion to n{}{97	Fluid Dyna 7805216639	umics (C 960}	amb	oridge U	niversi	ty Press, 190	57). isbn{}{
[Study ou	tsic	le of	class (	prepa	ration and	d revie	w)]				
(Other in	forr	natio	on (offic	e hou	urs, etc.))						
*Please visi	t KU	JLAS	IS to fin	d out a	bout office	hours.					
L											

												未到	更新
Course nu	umbe	er	U-EN	G25 4	5144 LJ71								
Course title (and course title in English)			口加工学 brication		工ネ)		nan and	tructor's ne, job tit d departm affiliation	tle, nent	Graduate Scl Professor,TS Graduate Scl Professor,YC	SUCHIY. hool of E	A TOSH Engineeri	IIYUKI ing
Target yea	r	4th ye	ear students o	or above	Number	of cred	lits	2	Year	r/semesters	2020/F	irst seme	ester
Days and peri					s style	Lectur	e			Language of instruction	Japanes	se	
[Overview	/ and	d pu	irpose o	of the	course]								
This course	cove	ers m	nicrofabri	cation	technology	/ for MI	EMS	as well	as ser	miconducors.			
[Course o	bjec	ctive	es]										
[Course s	che	dule	and co	nten	ts]								
Titime, 2times, 3times, 2times, 2times, 2times, 2times, 2times, 1time, <b>[Course rd</b> None <b>[Evaluatic</b>	equi	irem	nents]										
[Referenc (Referen			-										
									(	Continue to マイ・	クロ加工学	(機エネ)	(2)↓↓↓

# マイクロ加工学(機エネ)(2)

# [Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

Category
 A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

# 航空宇宙工学演義(宇)(2)

# [Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

# [Courses delivered by instructors with practical work experience]

 Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

未更新

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Course n	umber	U-EN	G25 4	5145 LJ77		_				
Course title (and course title in English)				宇) nautics and Ast	tronautics	nan and	tructor's ne, job tit I departm affiliation	nent	ALL STAFF Graduate Sch	oool of Engineering oool of Engineering KATA SHIGERU
Target yea	<b>r</b> 4th	year students	or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and peri	ods Tue	.3,4	Class	s style	Lecture	э			Language of instruction	Japanese
[Overview	and p	urpose o	f the	course]						
[Course o	bjectiv	/es]								
[Course s	chedu	le and co	ntent	:s]						
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[Course r	equire	ments]								
None										
[Evaluatio	on met	hods and	polic	;y]						
[Textbook	s]									
[Referenc		-								
(Refere	nce bo	oks)								
								c	Continue to 航空	宇宙工学演義(宇)(2)↓↓↓
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										未更新
Course nu	umber	U-EN0	G25 2	5150 LJ57	U-EN	G25	25150	LJ28	U-ENG25 2	25150 LJ77
Course title (and course title in English)		」性論(材 nsed Matte				nan and	ructor's ne, job ti departn ffiliation	nent	Professor,NA Graduate Sci	hool of Engineering AKAMURA HIROYUKI hool of Engineering sssor,TABATA YOSHIKAZU
Target yea	<b>r</b> Brd	year students o	or above	Number	of cred	its	2	Yea	r/semesters	2020/Second semester
Days and perio	ods Fri.3	3	Class	s style	Lecture	e			Language of instruction	Japanese
[Overview	and p	urpose o	f the	course]						
Basic conce	pt of op	tical, magr	netic a	nd superco	nducting	g pro	operties	of ma	tters.	
[Course o	bjectiv	/es]								
Understandi	ng of ba	asic concep	ot of o	ptical, mag	netic an	d su	percond	lucting	g properties o	f matters.
[Course s	chedu	le and co	ntent	s]						
ferromagnet magnetizatio	6times, ism, and on proce ctivity, 2 , origin , 1time,	magnetic tiferromagn ess, etc. 3times, Me of superco Assessmen	mome netism eisner onduct	ent, atomic n n, molecular effect, type	nagneti field, r -1 and t	sm, neta ype-	single-i llic mag 2 super	on ma gnetisr condu	gnetism, para n, magnetic a	
None										
[Evaluatio	on meth	hods and	polic	>y]						
Evaluation v	vill be b	based on a	final e	xamination						
[Textbook	s]									
Not used										
[Referenc	es, etc	.]								
( <b>Referen</b> S. Blundel ISBN:01985 C. Kittel	『Magn 505914	etism in Co							Physics)』( 71415268	Oxford University Press)
[Study ou	tside o	of class (p	orepa	ration and	l revie	w)]				
Basics of qu	antum r	nechanics	and st	atistical me	chanics	is n	ecessar	у.		
(Other in	format	ion (offic	e hou	urs, etc.))						
*Please visit	t KULA	SIS to find	l out a	bout office	hours.					

						~				未更新
Course nu	umber	U-ENO	325 2	5151 LJ77	U-EN	G25	5 25151	LJ57	U-ENG25 2	25151 LJ28
Course title (and course title in English)				ate Physics		nar anc	tructor's ne, job til d departm affiliation	tle, nent	Associate Pro Graduate Sci	hool of Engineering ofessor,MATSUO JIROU hool of Engineering urer,SEKI TOSHIO
Farget yea	<b>r</b> Brd	year students o	r above	Number	of cred	its	2	Year	/semesters	2020/Second semester
Days and perio	ods Fri.1		Class	s style	Lecture	e			Language of instruction	Japanese
[Overview	and p	urpose o	f the	course]						
solid state pr	ropertie: bjectiv	s on a micr es]	oscop	ic and mac	roscopi	c sci	ale.			um mechanics defines
on a microso				5					r,	F
[Course s	chedul	e and co	ntent	s]						
Junction the	ory,1tin nation a	ne,p-n junc nd report,2	tions,	metal-sem	iconduc	tor j	junction	, hetero		ports and quizzes of the
[Course re	equirer	nents]								
None										
[Evaluatio	on meth	nods and	polio	;y]						
Coursework	will be	evaluated	with a	attendance a	and repo	ort o	n subjec	ts.		
[Textbook	s]									
[Reference	es, etc	.]								
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C. Kittel, Inf	troducti	on to Solid	State	Physics 8t	n editioi	1 ( 1	viley) is	on{}{9	07804714152	(68)
[Study ou	tside o	f class (p	orepa	ration and	d revie	w)]				
(Other in	format	ion (offic	e hou	ırs, etc.))						
*Please visit	KULA	SIS to find	l out a	bout office	hours.					

# 原子核工学序論1(原)(2) [Course requirements] N/A [Evaluation methods and policy] Grading is based on the score of the periodic evaluations. Students will be tested on basic knowledge and understanding of atoms, nuclei, radiation, quantum computation, etc. discussed in each lecture. [Textbooks] Other materials are not specified. Handouts, etc. will be distributed during lectures. [References, etc.] (Reference books) N/A [Study outside of class (preparation and review)] Review mainly the contents of each lecture and the exercises during the lecture is advisable. (Other information (office hours, etc.)) Attend as needed. Some materials may be omitted or added depending on the number of classes in the relevant year. Attending Introduction to Nuclear Engineering 2 at the same time as this course is desirable. *Please visit KULASIS to find out about office hours.

Course nu	umber	U-ENG25 3	5200 LJ75						
Course title (and course title in English)		工学序論 1 (原 ction to Nuclear		g 1	Instructor' name, job and depart of affiliatio	title, tment	Graduate Scl ALL STAFF Graduate Scl Professor,SA	nool of Eng	ineering
Target yea	r 2nd y	ear students or above	Number o	of cred	its 2	Yea	r/semesters	2020/First	semester
Days and perio	ods Mon	.2 Class	s style	Lecture	e		Language of instruction	Japanese	
Study of bas	ic conce sicoche	pts necessary fo mical properties	r understan						
	objective	es] is to understand and to understa							
[Course s Introduction		e and content	s]						
<ol> <li>Discovery</li> <li>History o</li> <li>Basics of</li> <li>Interactio</li> <li>Detection</li> <li>Generatic</li> <li>Industrial</li> <li>Energy gene</li> </ol>	f radiation radiation n with su of radia on of radia uses of	on n ubstances ttion iation							
<ol> <li>8) Energy si</li> <li>9) Basics of</li> <li>10) Reactor</li> <li>11) Reactor</li> <li>12) Reactor</li> <li>13) Reactor</li> <li>14) Viewpoi</li> </ol>	tuation a reactor j control selection selection selection ints on n	nd nuclear pow physics n-present	n reactor ilization an		opment				
						·,	Continue to 原子		〔原〕(2)↓↓↓

Target year       ad year students or above       Number of credits       2       Year/semesters       2020/Second semesters         Days and periods       Mon.2       Class style       Lecture       tagget distinct       Japanese         IOverview and purpose of the coursej       Eccure       tagget distinct       Japanese         Study of the fundamentals of radiation properties and their control, and energy utilization and management necessary for understanding the principles of various nuclear engineering studies.       Image:	Course title (and course title in English)		工学序論 2 ( tion to Nuclea		ng 2	Instructor's name, job ti and departr of affiliatior	itle, nent	ALL STAFF Graduate Scl	nool of Engineering nool of Engineering SAKI TAKAYUKI
	Target yea	r 2nd y	ear students or abov	Number	of cred	its 2	Yea	r/semesters	2020/Second semester
Study of the fundamentals of radiation properties and their control, and energy utilization and management necessary for understanding the principles of various nuclear engineering studies.  [Course objectives] The course objective is to understand the association between basic science and the latest research in the fit of nuclear engineering, and to understand the latest advancements made to basic and applied research and future issues.  [Course schedule and contents] Introduction to Radiation 2 1) Radiation biology 2) Medical application of radiation 3) Effects of radiation on the human body 4) Safe use of radiation 5) Radiation-related laws and regulations New developments in quantum theory 6) Cutting-edge information technology Energy generation and utilization 2 7) History and fundamentals of nuclear fusion 8) Fusion reactor development 10) Ensuring safety 11) Technical ethics 12) Radiation in the environment 13) Nuclear fuel cycle 14) Reprocessing and geological disposal	Days and peri	ods Mon.	2 Clas	s style	Lecture	e		Language of instruction	Japanese
necessary for understanding the principles of various nuclear engineering studies.  [Course objectives] The course objective is to understand the association between basic science and the latest research in the fit of nuclear engineering, and to understand the latest advancements made to basic and applied research and future issues.  [Course schedule and contents] Introduction to Radiation 2 1) Radiation biology 2) Medical application of radiation 3) Effects of radiation on the human body 4) Safe use of radiation and regulations New developments in quantum theory 6) Cutting-edge information technology Energy generation and utilization 2 7) History and fundamentals of nuclear fusion 8) Fusion reactor development 9) Power reactor development 9) Power reactor systems 10) Ensuring safety 11) Technical ethics 12) Radiation in the environment 13) Nuclear fuel cycle 14) Reprocessing and geological disposal	[Overview	and pu	irpose of the	course]					
The course objective is to understand the association between basic science and the latest research in the fit of nuclear engineering, and to understand the latest advancements made to basic and applied research and future issues. [Course schedule and contents] Introduction to Radiation 2 1) Radiation biology 2) Medical application of radiation 3) Effects of radiation on the human body 4) Safe use of radiation on the human body 4) Safe use of radiation on the human body 4) Safe use of radiation and regulations New developments in quantum theory 6) Cutting-edge information technology Energy generation and utilization 2 7) History and fundamentals of nuclear fusion 8) Fusion reactor development 9) Power reactor development 9) Power reactor development 10) Ensuring safety 11) Technical ethics 12) Radiation in the environment 13) Nuclear fuel cycle 14) Reprocessing and geological disposal									ion and management,
of nuclear engineering, and to understand the latest advancements made to basic and applied research and future issues.  [Course schedule and contents] Introduction to Radiation 2  1) Radiation biology 2) Medical application of radiation 3) Effects of radiation on the human body 4) Safe use of radiation on the human body 4) Safe use of radiation 5) Radiation-related laws and regulations New developments in quantum theory 6) Cutting-edge information technology Energy generation and utilization 2 7) History and fundamentals of nuclear fusion 8) Fusion reactor development 9) Power reactor systems 10) Ensuring safety 11) Technical ethics 12) Radiation in the environment 13) Nuclear fuel cycle 14) Reprocessing and geological disposal	[Course o	bjective	es]						
Introduction to Radiation 2  I) Radiation biology  2) Medical application of radiation 3) Effects of radiation on the human body 4) Safe use of radiation 5) Radiation-related laws and regulations New developments in quantum theory 6) Cutting-edge information technology Energy generation and utilization 2 7) History and fundamentals of nuclear fusion 8) Fousion reactor development 9) Power reactor systems 10) Ensuring safety 11) Technical ethics 12) Radiation in the environment 13) Nuclear fuel cycle 14) Reprocessing and geological disposal	future issues	s.	-						
Therefy generation and utilization 2 Thistory and fundamentals of nuclear fusion Fusion reactor development Fusion reactor systems Fusio	<ol> <li>Medical a</li> <li>Effects of</li> <li>Safe use</li> <li>Radiation</li> <li>New develo</li> </ol>	pplication radiation of radiation -related l pments in	n on the human on laws and regul n quantum theo	ations					
15) reedback; contrination of learning achievement	Energy gene 7) History a 8) Fusion re 9) Power re: 10) Ensurin 11) Technic 12) Radiatio 13) Nuclear 14) Reproce	eration and nd fundat actor dev actor syst g safety al ethics on in the of fuel cycl ssing and	nd utilization 2 mentals of nuc relopment tems environment le 1 geological di	lear fusion	ment				

Course number	U-ENG25 35154 LJ75							
Course title (and course title in English)	Flow and Heat Transfer and department of affiliation Professor, YOKOMINE TAKEHIKC							
Target year Brd y	ear students or above Number	of credits 2	Yea	r/semesters	2020/Second semester			
Days and periods Mon.	.2 Class style	Lecture		Language of instruction	Japanese			
[Overview and pu	urpose of the course]							
and turbulent convect are to understand the through the understa	s the following subjects: the ctive heat transfer, phase ch e basic theory of fluid dyna ndings of the mechanisms nergy conversion system w	ange phenomen mics, thermodyr of heat transfer;	a (boiling amics, he especiall	and condensa eat transfer an y thermal hyd	ation). The main goals d their allocation raulics in a nuclear			
[Course objective	es]							
	d the relation between heat at transfer and their allocation				fluid dynamics,			
[Course schedule	e and contents]							
,1.0times, ,1.0times, ,2.0times, ,4.0times, ,1.0times, ,5.0times, , 1.0times,								
[Course requirem	nents]							
None								
[Evaluation meth	ods and policy]							
-	the written examination, b	ut it is also ratin	g a studer	nt#039s class j	performance.			
[Textbooks]								
[References, etc.	]							
(Reference boo	oks)							
[Study outside of	f class (preparation and	d review)]						
(Other informati	on (office hours, etc.))		_	_				
*Please visit KULAS	SIS to find out about office	hours.						
1								

Courses nun									
Course nun	e number	U-ENG25 35	5155 LJ71						
Course title (and course title in H English)			Instructor's name, job title, and department of affiliation			Graduate School of Engineering Professor,IWAI HIROSHI Graduate School of Engineering Associate Professor,TATSUMI KAZUYA			
arget year	<b>year</b> Brd ye	ear students or above	Number o	of cred	its 2		Year	/semesters	2020/Second semester
Days and period	periods Fri.1	Class	style	Lecture	,			Language of instruction	Japanese
[Overview a	iew and pu	irpose of the	course]						
nduction, w /ith respect d the boiling e will discus	ion, we will c spect to conv boiling and c discuss the b	discuss the stead vective heat tran condensation tra asic theory.	ly-unsteady sfer, we wi	/ phenor 11 discus	nenor ss sing	1 and th gle-pha	ne the se for	ory of extend ced convection	ith respect to heat led surface heat transfer on/natural convection ct to thermal radiation,
[Course ob	-								
Provide basic heat transfer, t			1 understan	ding of I	heat ti	ransfer	pheno	omena (heat o	conduction, convective
[Course sch	se schedule	e and content	s]						
nsulation tech ngineering ar 2-4) leat conduction onductivity a asic case exa esistance in f 5) asic informa (xplain dimer	on techniques ring and the b nduction: Exp ivity and Fou se examples. ce in flat plate formation on dimensionles	s, and temperatu basic mechanism plain the basics urier's law, and Explain therma es, pipes, etc., th	are control ns of heat the of heat condition d the derivation d contact re- he theory of t transfer: H n as Prandtl	of equip ransfer p duction ttion of t esistance f extend Formula number	pheno pheno he eq , stead ed sur	, explaimena, omena, uation dy heat rfaces (	in the speci of hea t cond (fins), erning	importance of ifically heat f at conduction luction, and h and so on.	lux, thermal 1, with reference to heat conduction flow in heat transfer.

# 伝熱工学(機)(2)

transfer. With respect to condensation heat transfer, explain the difference between dropwise condensation and film condensation, phenomena in condensation interfaces, and the Nusselt solution in vertical plate film

and nim condensation, phenomena in condensation interfaces, and the Nussen solution in vertical plate initi (12-14) Radiation heat transfer: Discuss black bodies and gray bodies, Kirchhoff's law, Planck's law, and Wien's s displacement law, Stefan-Boltzmann's law, radiation transfer between black body surfaces and radiation in actual surfaces, and the properties of radiation in gases. (15) Confirmation of learning attainment.

[Course requirements] Students are required to have completed Thermodynamics 1, Thermodynamics 2, Fluid Dynamics 1, and Fluid Dynamics 2.

[Evaluation methods and policy] A final examination will be held. In-class quizzes and reports, when carried out, will be factored in.

[Textbooks]

Not used

[References, etc.] (Reference books)

# [Study outside of class (preparation and review)]

Students are required to have completed Thermodynamics 1, Thermodynamics 2, Fluid Dynamics 1, and Fluid Dynamics 2.

# (Other information (office hours, etc.))

The order of classes listed above and their timing may differ depending on the year.

*Please visit KULASIS to find out about office hours.

										未更新	
Course n	umber	U-EN	G25 35	5156 LJ71							
Course title (and course title in English) Fundamentals of Materials 2									Graduate School of Energy Science Associate Professor,OKUMURA HIDEYUKI		
Target yea	r <b>r</b> Brd y	ear students (	or above	Number	of cred	lits	2	Yea	r/semesters	2020/First semester	
Days and peri	ods Wed	.2	Class	s style	Lectur	ture Language of instruction Japanese					
[Overview	/ and pi	irpose o	f the	course]							
[Course o	bjectiv	es]									
[Course s	chedul	e and co	ntent	s]							
,3times,				-		_					
,2times,											
,2times,											
,2times,											
,1time,											
,1time,											
,3times,											
,1time,											
[Course r	equiren	nents]									
None											
[Evaluatio	on meth	ods and	polic	;y]							
[Textbook	(s]										
Text book c http://www.		ught at the	e socie	ty of mater	rial scie	nce,	Japan a	t Hyal	kumanben nea	r Kyoto university.	
[Referenc		-									
(Refere	nce boo	oks)									
[Study ou	tside o	class (p	orepa	ration and	d revie	w)]					
(Other in	formati	on (offic	e hou	ırs, etc.))							
*Please visi	t KULA	SIS to find	l out a	bout office	hours.						

							未更新	
Course number	U-ENG25 3	5158 EJ57	U-ENG	25 35158	EJ53	U-ENG25 3	5158 EJ77	
Course title (and course title in English) 故計工学 2 Design Engineering 2				astructor's ame, job ti nd departn f affiliation	nent	Graduate School of Engineering Professor,KOMORI MASAHARU Graduate School of Engineering Professor,MATSUBARA ATSUSHI Graduate School of Engineering Professor,NISHIWAKI SHINJI		
Target year Brd	year students or above	Number of	f credit	<b>s</b> 2	/semesters	2020/Second semeste		
Days and periods Tue	.2 Clas	s style	Lecture			Language of instruction	Japanese	
[Overview and p	ourpose of the	course]						
[Course objectiv	ves]							
[Course schedu	le and conter							
Stimes.	le and conten	sj						
,3times,								
,2times,								
,4times, .1time.								
,rume,								
[Course require	ments]							
None								
[Evaluation met	hods and poli	cy]						
•	•							
[Textbooks]								
[References, etc	.]							
(Reference bo	ooks)							
					0	Continue to	設計工学 2 (2) ↓ ↓	

Course num	ber U-EN	G25 35157 EJ28								
Course title (and course title in English)         設計工学 1 Design Engineering 1         Instructor's name, job title, and department of affiliation         Graduate School of Engineering Professor,KOMORI MASAHARU Graduate School of Engineering Professor,HIRAYAMA TOMOKO										
Target year	3rd year students of	or above Number	of credits	2	Year/	semesters	2020/First semester			
Days and periods	Mon.1	Class style	Lecture			Language of instruction	Japanese			
[Overview a	nd purpose o	f the course]								
[Course obj	ectives]									
[Course sch	edule and co	ntents]								
None	3times, 3times, 2times, 2times, 1time, 1time, [Course requirements]									
[Textbooks]										
[References	, etc.]					_				
Reference	e books)									
[Study outsi	de of class (p	preparation and	d review)]							
(Other info	mation (offic	e hours, etc.))								
*Please visit K	ULASIS to find	l out about office	hours.							

# 設計工学 2 (2)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

*Please visit KULASIS to find out about office hours.

# [Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

Course nur	mber	U-EN	G25 3	5159 SJ28						
				殳計演習・ I Energy Science and		Instructor's name, job title, and department of affiliation		Graduate School of Energy Science Associate Professor, AKUMURA HIDEYUK Graduate School of Energy Science Associate Professor, ABE MASATAK/ Graduate School of Energy Science Professor, IMATANI SHIYOUI Graduate School of Energy Science Professor, IMATANI SHIYOUI Graduate School of Energy Science Professor, KASHIWAYA YOSHIAK Graduate School of Energy Science Associate Professor, KINOSHITA KATSUYUK Graduate School of Energy Science Associate Professor, KINOSHITA KATSUYUK Graduate School of Energy Science Associate Professor, KASHAWA MASAKATSI Graduate School of Energy Science Associate Professor, ACHIYA KAM Graduate School of Energy Science Associate Professor, HACHIYA KAMASHI Graduate School of Energy Science Associate Professor, HORHYA MASAKATSI Graduate School of Energy Science Associate Professor, HORHYA NAOTI Graduate School of Energy Science Associate Professor, HORHE NAOTI Graduate School of Energy Science Associate Professor, HORHE NAOTI Graduate School of Energy Science Associate Professor, MATSUMOTO KAZUHIKK Graduate School of Energy Science		
Target year	Brd y	ear students o	or above	Number	of cred	its	3	Year	/semesters	2020/First semester
Days and period	dsWed.3	3,4,Thu.3,4	Class	s style	Experi	men	t		Language of instruction	Japanese
[Overview	and pu	urpose o	f the	course]						
[Course ob	jective	es]								
[Course sc	hedul	e and co	ntent	ts]						
,6times, ,6times, ,6times, ,6times,						_	_			
								- <b>-</b> c	ontinue to エネルギ	一応用工学設計演習・実験1(2)↓↓↓

土面新

U-ENG25 35160 SJ57 U-ENG25 35160 SJ53 U-ENG25 35160 SJ77 Course number Course title Graduate School of Engineering nstructor's name, job title, and department of affiliation 原子核工学実験 1 (and cours ALL STAFF Graduate School of Engineering title in Nuclear Engineering Laboratory 1 English) Associate Professor. TASAKI SEIJI Brd year students or above Number of credits Year/semesters 2020/First semester Farget year Days and periods Thu. 1, 2, 3, 4 Class style Experiment anguage of instruction Japanese [Overview and purpose of the course] Basic knowledge of a wide range of scientific and engineering fields (e.g. physics, chemistry, biology, electrical engineering, mechanical engineering, and materials engineering) that form the basis of nuclear engineering, as well as basic proficiency with standards related to radiation and quantum beam technologies specific to nuclear engineering. In addition, students will study experimental procedures through practical training as well as procedures for the safe handling of radioisotopes and radiation generators, methods for rocessing experimental data, and how to prepare scientific reports. [Course objectives] Cultivate familiarity with experimental procedures and a sense of engineering best practices · Acquire basic knowledge and skills related to science and engineering with a mind towards practical application · Cultivate the ability to acquire and utilize basic knowledge and technology related to nuclear engineering. · Learn how to conduct experiments while considering personal and environmental safety. · Cultivate the ability to work effectively, independently, and continuously on various tasks. [Course schedule and contents] Course will cover the following themes. Some of the themes also serve as new instruction and training egarding the handling of radioisotopes The order of lectures differs for each experimental group, and the content of corresponding exercises may change. Lecture 1: Overview of experiments: Provide an overview of each experimental task, text distribution, prelearning instructions and precautions, etc. will be given as necessary Lecture 2: Basics of creating engineering reports: Lecture will focus on creating experimental reports, as well as exercises to learn the basics of creating experimental reports. ecture 3: Radioactive isotope (RI) safety training seminar: Students will learn safe procedures for handling RIs. Students will study safe procedures for handling nuclear fuel materials. Lecture 4: Plan drafting: Exercises and lectures on basic aspects of plan drafting. _____Continue to 原子核工学実験 1[2]↓↓↓

# [Course requirements] None [Evaluation methods and policy] [Textbooks] [Textbooks] [References, etc.] (Reference books) [Study outside of class (preparation and review)] (Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

エネルギー応用工学設計演習・実験1(2)

# 原子核工学実験1(2)

Lecture 5: Equipment safety training: Students will learn about safety when handling machine tools such as drilling machines and lathes.

Lecture 6: Electronic safety training: Students will assemble various circuits and learn safe and reliable circuit manufacturing techniques.

Lecture 7:  $\alpha$ -ray absorption: Students will learn about  $\alpha$ -ray identification using semiconductor detectors and energy absorption, range, and straggling using  $\alpha$ -ray-emitting substances.

Lecture 8: Absorption of  $\beta$  and  $\gamma$ -rays: Students will study procedures for the safe handling of RIs through experiments on energy absorption by  $\beta$  and  $\gamma$ -ray-emitting substances.

Lecture 9: X-ray diffraction: Using a powder X-ray diffractometer, students will learn the basic properties of X-rays and gain an understanding of the relationship between diffraction patterns and crystal structures.

Lecture 10: Atmospheric PIXE/PIGE analysis: Students will discharge a proton beam into the atmosphere and observe its range. In addition, the characteristic X-rays and y-rays generated by various irradiating materials will be measured and trace element analysis will be performed as a study of the properties of ion beams and their use.

Lecture 11: Circuit meter training: Students will learn the operating principles and usage of analog and digital testers.

Lecture 12: Study of oscilloscopes and linear circuits: Students will learn how to use an oscilloscope, an essential tool for observing pulse waveforms as well as how to transmit pulses when they enter the network.

Lecture 13: Analog/digital circuits: Students will learn about the basics of amplifiers and digital circuits with semiconductor elements by actually creating circuits.

Lecture 14: Electron beams/vacuums: Students will focus an electron beam by electric and magnetic fields to learn the functions of electrostatic and magnetic lenses and understand the fundamental principles of vacuum technology.

Lecture 15: Report check: Confirmation of the content of students' submitted reports and provision of guidance regarding resubmission of deficient reports to confirm learning achievement.

[Course requirements]

# [Evaluation methods and policy]

Students will prepare a report for each task, and performance will be evaluated on a scale of 1 to 3 with respect to the degree of achievement of each learning objective, and the total score is converted into a score out of 100.

Note that completing all assignments and submitting reports is a prerequisite for receiving credit.

Reports submitted late may be penalized, and messy or incomplete reports may require correction and

resubmission._____Continue to 原子核工学実験 1(3)↓↓↓

原子核工学実験1(3)	
[Textbooks]	
Fexts and reference materials will be distributed for each experimental theme.	
[References, etc.]	
(Reference books) Other materials will be introduced as needed for each experimental theme.	
[Study outside of class (preparation and review)]	
Submit reports on all experimental themes within the deadline.	
In addition, follow the instructions in the experiment outline description for each experiment the	me.
(Other information (office hours, etc.))	
The method of contacting the faculty in charge of each experimental theme will be given in the i material for each experiment. Taking this course together with Nuclear Engineering Experiment 2 is desirable.	nstructional
*Please visit KULASIS to find out about office hours.	
[Courses delivered by instructors with practical work experience]	
<ol> <li>Category A course with practical content delivered by instructors with practical work experience</li> </ol>	
(2) Details of instructors' practical work experience related to the course ・RI主任者【工学部の事業所(宇治)におけるRI管理の実務経験】	
(3) Details of practical classes delivered based on instructors practical work experience ・RI管理の経験に基づく実務的な教育が行われている。	

エネルギー応用工学設計演習・実	験2(2)		
[Course schedule and co	tents]		
5times,			
6times,			
6times, 6times,			
ltime,			
[Course requirements]			
Jone			
Evaluation methods and	policy]		
[Textbooks]			
[			
[References, etc.]			
(Reference books)			
[Study outside of class (p	eparation and review)		
(Other information (office	hours, etc.)		
*Please visit KULASIS to find			

未更新 U-ENG25 45161 LJ71 Graduate School of Energy Science Associate Professor,OKUMURA HIDEYUKI Graduate School of Energy Science Associate Professor,ABE MASATAKA Graduate School of Energy Science Assistant Professor,HACHIYA KAN Graduate School of Energy Science Professor,IMADUE TAKUMI Graduate School of Energy Science Assistant Professor,IMADERA KENJI Graduate School of Energy Science Assistant Professor,IMADERA KENJI Graduate School of Energy Science Professor,IMADERA KENJI Graduate School of Energy Science Assistant Professor,OGAWA TAKAYA Graduate School of Energy Science Associate Professor,KINOSHITA KATSUYUKI Graduate School of Energy Science Associate Professor,KINOSHITA KATSUYUKI Graduate School of Energy Science Course number Course title Instructor's (and course title in English) エネルギー応用工学設計演習・実験2 name, job title, and department of affiliation Design Practice and Experiments for Applied Energy Science and Engineering 2 Associate Profesor,KINOSHITA KATSUYUKI Graduate School of Energy Science Associate Professor,HASEGAWA MASAKATSU Graduate School of Energy Science Associate Professor,Jun HAYASHI Graduate School of Energy Science Assistant Professor,HORIBE NAOTO Graduate School of Energy Science Associate Professor,MATSUMOTO KAZUHIKO Graduate School of Energy Science Associate Professor,MIYAKE MASAO Brd year students or above Number of credits 3 Year/semesters 2020/Second semester Target year Days and periodsWed.3,4,Thu.3,4**Class style** [Overview and purpose of the course] Language of instruction Japanese Seminar [Course objectives] Continue to エネルギー応用工学設計演習・実験 2 (2) ↓↓↓

Course title (and course title in English)			工学実験 2 r Engineering Laboratory 2			structor's me, job tit d departm affiliation	nent	Graduate School of Engineering ALL STAFF Graduate School of Engineering Associate Professor,TASAKI SEIJI		
Target yea	<b>r</b> Bro	d year students	year students or above Number of credits 3 Year/semest				r/semesters	2020/Second semester		
Days and peri	ods Thu	u.1,2,3,4	Clas	s style	Seminar			Language of instruction	Japanese	
electrical en engineering specific to n	gineeri as we uclear ining a proces	ing, mechan Il as basic p engineerin s well as pr ssing experi	nical e profici g. In a rocedu	ngineering, ency with s ddition, stu res for the	materials tandards re dents will safe handli	engineeri elated to r study pra- ng of radi	ng) th adiati ctical ioisoto	at form the ba on and quantu experimental opes and radia	mistry, biology, sis of nuclear m beam technologies procedures through tion generators,	
<ul><li>application.</li><li>Cultivate</li><li>Learn ho</li></ul>	the ab	ility to acq	uire ar erimen	nd utilize ba ts while co	usic knowle	edge and ersonal a	techno nd en			
[Course s	chedu	le and co	onten	ts]						
Course will The order of change.					ntal group,	and the c	onten	t of correspon	ding exercises may	
Lecture 1: C learning inst								mental task, t	ext distribution, pre-	
Lecture 2: E as exercises							is on c	reating experi	mental reports, as wel	
Lecture 3: S learn about								lioisotopes usi	ng a neutron counter t	
		emistry: St and solve			how to har	ndle unse	aled ra	adioactive ma	terials using	
radioisotope		) und sorre								

# 原子核工学実験 2 (2)

Lecture 5: Ion beam generation and RBS analysis: Students will learn about ion beam technology, vacuum technology, analytical principles, etc. through particle accelerator maneuvering, and will attempt Rutherford backscattering analysis as an applied experiment using ion beams.

Lecture 6: Thermofluid measurement and boiling heat transfer: Students will conduct experiments utilizing boiling to deepen understanding of boiling and critical heat flux, and to learn basic measurement methods used in thermofluid engineering.

Lecture 7: Uranium chemistry: Lectures will focus on the separation of uranium thorium radiative equilibrium solutions (ion exchange, oxidation-reduction reaction) and will perform colorimetric quantitative analysis as study of the handling of nuclear fuel.

Lecture 8: Materials testing/electron microscopy: Students will perform tensile testing on various materials and obtain basic knowledge on the strength of metallic materials by analyzing pulling speed, etc.

Lecture 9: Radiation detection: Students will attempt detection of  $\gamma$ -rays emitted from substances existing in nature by using a Ge semiconductor detector as well as the identification and quantification of emitted nuclides. Students will also deepen their understanding of radiation and radioactive materials by measuring contamination using a survey meter and by measuring the decay process of nearby radioisotopes.

Lecture 10: Nonlinear Optical Effect Lasers: Students will perform laser oscillation experiments using an optical cavity and a solid crystal as study of the basic concepts related to stimulated emission. Students will also observe the generation of secondary harmonic waves using a nonlinear optical crystal, learn about phase matching, and study the basics of optical technology.

Lecture 11: Analog/digital measurement: Students will study the characteristics of analog and digital measurements, as well as the principles of impedance matching and sampling, by actually creating circuits in practice.

Lectures 12 and 13: Simulation experiments: Students will study the basics of computer simulations, and perform a simulated experiment on radiation permeation using Excel.

Lectures 14 and 15: Report check: Confirmation of the content of students' submitted reports and provision of guidance regarding resubmission of deficient reports to confirm learning achievement.

# [Course requirements]

**西乙拔工学中除 2 (2)** 

N/A

# [Evaluation methods and policy]

Students will prepare a report for each task, and performance will be evaluated on a scale of 1 to 3 with respect to the degree of achievement of each learning objective, and the total score is converted into a score out of 100.

Note that completing all assignments and submitting reports is a prerequisite for receiving credit.

Reports submitted late may be penalized, and messy or incomplete reports may require correction and

Reports submitted rate may coperation in the providence of the p

Course title	r U-EN	G27 37135 EJ61					
(and course 材料		cture of Materials	s ar	nstructor's ame, job tit nd departm f affiliation		Graduate Scl Associate Profe	hool of Engineeri ssor,SUMIGAWA TA
Target year	4th year students	or above <b>Number</b>	of credits	<b>s</b> 2	Year	/semesters	2020/First seme
Days and periods T	hu.2	Class style	Lecture			Language of instruction	Japanese
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[Course objec	tives						
Loonige onlier							
[Course sched	dule and co	ontents]					
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None [Evaluation m [Textbooks]		ł policy]					
None [Evaluation m [Textbooks] [References, e	etc.]	ł policy]					
None [Evaluation m [Textbooks]	etc.]	I policy]					
None [Evaluation m [Textbooks] [References, e	etc.]	I policy]					
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None [Evaluation m [Textbooks] [References, e (Reference l [Study outside	etc.] books) e of class (j	preparation ar		)]			
None [Evaluation m [Textbooks] [References, e (Reference l [Study outside	etc.] books) e of class (j nation (offic	preparation ar	)	)]			

原子核工学実験 2 (3)
[Textbooks]
Texts and reference materials will be distributed for each experimental theme.
10-6
[References, etc.]
(Reference books) Other materials will be introduced as needed for each experimental theme.
[Study outside of class (preparation and review)]
Submit reports on all experimental themes within the deadline.
In addition, follow the instructions in the experiment outline description for each experiment theme.
(Other information (office hours, etc.))
The method of contacting the faculty in charge of each experimental theme will be given in the instructional
material for each experiment. Taking this course together with Nuclear Engineering Experiment 1 is desirable.
*Please visit KULASIS to find out about office hours.
[Courses delivered by instructors with practical work experience]
(1) Category
A course with practical content delivered by instructors with practical work experience
(2) Details of instructors' practical work experience related to the course ・RI主任者【工学部の事業所(宇治)におけるRI管理の実務経験】
<ul> <li>(3) Details of practical classes delivered based on instructors practical work experience</li> <li>RI管理の経験に基づく実務的な教育が行われている。</li> </ul>

							小之物
Course numb	U-EN	G25 25164 LJ75					
Course title (and course 熱 title in The English)	力学 1 (機宇 ermodynamics	tle, nent	Graduate School of Engineering Professor,NAKABE KAZUYOSHI Graduate School of Engineering Associate Professor,TATSUMI KAZUYA				
Target year	2nd year students	or above Number	of credit	t <b>s</b> 2	Year	/semesters	2020/First semester
Days and periods	Fri.1	Class style	Lecture			Language of instruction	Japanese
[Overview an	nd purpose o	of the course]					
[Course obje	ctives]						
[Course sche	edule and co	ontents]					
,1time,							
,5times, ,2times,							
,2times,							
,4times,							
,1time,							
,1time,							
[Course requ	irements]						
None							
[Evaluation n	nethods and	l policy]					
[Textbooks]							
[References,	etc.]						
Reference	books)						
[Study outsid	de of class (	preparation an	d review	/)]			
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		e hours, etc.)					
*Please visit KU	JLASIS to fin	d out about office	e hours.				

Course nu		LLEN	G25.2	5164 LJ75						不又利
Course n	Imper	U-EN	025 2	5104 LJ75						
Course title (and course title in English)		学1 (機宇 nodynamics		番偶数)		nan and	tructor's ne, job ti I departn Iffiliation	nent	Professor, YC Graduate Sch	ool of Engineering SHIDA HIDEO tool of Engineering AI HIROSHI
Target yea	<b>r</b> 21	d year students (	or above	Number	of cred	its	2	Yea	r/semesters	2020/First semester
Days and perio				s style	Lecture	e			Language of instruction	Japanese
[Overview	and	purpose o	of the	course]						
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None										
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[Evaluatio	on me	thods and	polic	cy]						
[Textbook	s]									
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10.										
[Study ou	tside	of class (p	orepa	ration and	d revie	w)]				
(Other in	forma	tion (offic	e ho	urs, etc.))						
*Please visit	KUL	ASIS to find	d out a	about office	e hours.					

# 熱力学1(エネ原)(2) Based on test results, critical reviews will be made of student work.

[Course requirements] The fundamental calculus as taught by the Institute of Liberal Arts and Science is a prerequisite for this course.

# [Evaluation methods and policy]

Written examination

[Textbooks] Not used

# [References, etc.]

(Reference books) Thermodynamics and statistical mechanics (A. Harajima, Baifukan) (in Japanese). isbn{}{9784563021399}

[Study outside of class (preparation and review)] After each class, students should spend time to review the equations and its derivations and understand the meaning.

# (Other information (office hours, etc.))

Depending on the number of course classes scheduled for each school year and other factors, a portion of the Syllabus may be omitted, or additions may be made thereto.

*Please visit KULASIS to find out about office hours.

土面鉱

土面新

Course nu	imbe	er	U-EN	G25 2	5164 LJ75						不史利
Course title (and course title in English)			1(エネ lynamics				nar anc	tructor's ne, job til d departm affiliation	nent		nool of Energy Science HIHARA KEIICHI
Target yea	r	2nd ye	ear students	or above	Number	of cred	lits	2	Yea	r/semesters	2020/First semester
Days and perio	ods V	Wed.	3	Class	s style	Lectur	е			Language of instruction	Japanese
fundamental	e, Tl iten pha	herm ns in ise ec	odynami cluding s quilibriur	cs 1, t tate cl	he basic lav nanges of id	leal and	real	l gases, o	cycles		Also discussed are s, phase transformation, etc.
Students wil thermodynar with change	l gai nics s in t	in an , fun thern	understa damental nodynam	l conce ic qua	epts for then ntity that ac	modyn	ami	cs. Stude	ents w	he first and se ill also be able	cond laws of e to quantitatively deal
[Course s	che	dule	and co	ntent	s]						
The first law	erm	odyn	namics, ir nodynam	ntrodu	ction of var classes)					nermodynamic ic heat, enthal	cs. lpy, ideal gas.
The second	law	of the	ermodyn	amics	(2classes)						y ideal gas, introduction
Thermal eng Discussion i Carnot cycle	n the			ll incl	ude the free	expans	ion/	compres	ssion o	of gas, Otto cy	vcle, Brayton cycle,
Free energy Explanation				nergy,	Maxwell ec	quations	s, Jo	ule-Tho	mpsor	n's experiment	
Phase transf Explanation equilibrium,	is m	nade	regarding	, vario					order	phase transfo	rmation, metastable
Confirmatio Confirmatio contents of t	n is :	made	e, via pra				ises,	, of the e	xtent	that students l	have learned the
Feedback (1	class	s)							,	Continue to 熱	力学1 [−] (エネ原) <b>(2)</b> ↓↓↓

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Course nu	umbe	er	U-EN	VG25 3	5165 LJ75						
Course title (and course title in English)			J学 1 lynamic		terials 1		nan and	ructor's ne, job til departm ffiliation	nent		ool of Engineering GIMURA HIROYUKI
Target yea	r	2nd ye	ar student	s or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and perio	ods V	Ved.3	3	Class	style	Lecture	e			Language of instruction	Japanese
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rume,											
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[Evaluatio	n m	etho	ods an	d polic	y]						
[Textbook	s]										
[Referenc	es, e	etc.]									
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[Study ou	tside	e of	class	(prepa	ration and	d revie	w)]				
(Other in	form	natio	on (offi	ce hou	rs, etc.)						
Please visit	KU	LAS	IS to fi	nd out a	bout office	hours.					

									未更新	
Course n	umber	U-ENG25 3	5166 LJ75	5						Co
Course title (and course title in English)		力学2(材) dynamics of M	aterials 2		Instructor's name, job t and depart of affiliation	itle, ment	Graduate Scl Professor,UI			Cour (and title Engl
Target yea	<b>r</b> 2nd y	ear students or above	Number	of credi	<b>ts</b> 2	Yea	r/semesters	2020/First	semester	Targ
Days and peri	ods Tue.3	Clas	s style	Lecture			Language of instruction	Japanese		Days
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[Course r	equirem	ents]								Asse
None										[Co
[Evaluation	on meth	ods and poli	cy]							Und
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Continue to 材料熱力学 2 (材) (2)↓↓↓

Target year	Brd yea	ar students	or above	Number	of credit	<b>s</b> 2	Year	/semesters	2020/First semes
Days and periods	Thu.2		Clas	s style	Lecture			Language of instruction	Japanese
[Overview ar	nd pu	rpose d	of the	course]					
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オ料熱力学 2 (材)(2)	
References, etc.]	
(Reference books)	
Study outside of class (preparation and review)]	
(Other information (office hours, etc.))	
Please visit KULASIS to find out about office hours.	

# [Isao TANAKA and others 『(In Japanese) Introduction to electron theory of materials.] ISBN:10: 9784753655595 The textbook for this lecture (in Japanese) can be purchased at a bookstore. [References, etc.] [(Reference books) Frank L. Pilar "Elementary Quantum Chemistry...] ISBN:10: 0486414647 Mark Weller, Tina Overton, Jonathan Rourke "Inorganic Chemistry...] ISBN:10: 0198768125 Peter Atkins, Julio de Paula, James Keeler "Atkins" Physical Chemistry...] ISBN:10: 0198769865 Neil W. Ashcroft "Solid State Physics...] ISBN:10: 8131500527 Anthony R. West "Solid State Chemistry and its Applications ...] ISBN:10: 0521534402 Standard textbooks for elementary quantum physics, quantum chemistry, solid state chemistry and solid state physics may be used. [Study outside of class (preparation and review)] Support materials are available on KULASIS. Password is given in the lecture room.. They may be used for reviewing. (Other information (office hours, etc.)) Questions may be sent by e-mail.

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*Please visit KULASIS to find out about office hours.

量子無機材料学1(材)(2)

[Textbooks]

							未更新
Course numbe	er U-ENG23 3	3512 LE73					
	子無機材料学2(オ tronic Structures of I		terials 2 an	tructor's ne, job tit d departm affiliation			hool of Engineering ofessor,SEKO ATSUTO
Target year	3rd year students or above	Number	of credits	2	Year	/semesters	2020/Second semester
Days and periods T	ue.2 Class	s style	Lecture			Language of instruction	Japanese
[Overview and	d purpose of the	course]					
chemistry and ba functions is also a [Course objec Learning the func-	nd theory. The rela discussed. tives] damentals of quant	tionship be	tween the e	lectronic	struct	ure of inorga	ions based on quantum nic materials and their
materials science		_					
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wavefunctions, to Theory, approxin method. Theory, approxin approximations in Electronic band s Electronic band s Electronic structu chemical bonding	electronic structure otal energy, and one nations, and metho n quantum chemist structure calculation tructure calculation and chemical be g of molecules and astery of the course	e-electron e ds in quantu ry. n,2times,De u onding of m solids.	nergy. im chemist im chemist ensity funct	ry (1),4ti ry (2),3ti onal theo d solids,	mes,V mes,H ory, ps 2times	fariational me fartree and Ha seudopotentia s,The electron	ethod and perturbation artree-Fock al and basis set in nic structure and
[Course requin None	rementsj						
INONE							
[Evaluation m	ethods and polic	су]					
Evaluations are n	nade based on the e	xamination	. The resul	s of quiz	zes an	id reports ma	y be considered.

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Farget year	3rd year students	or above Number	of credits	2	Year/	semesters	2020/Intensive, Second semester
Days and periods		Class style	Seminar			Language of instruction	Japanese
[Overview ar	nd purpose o	of the course]					
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None		1 policy]					
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None		d policy]					
None		d policy]				ntinue to 調練が	ステム学セミナー (徳) (2)し

量子無機材料学 2 (材) (2)
[Textbooks]
[References, etc.]
(Reference books)
[Study outside of class (preparation and review)]
(Other information (office hours, etc.))
*Please visit KULASIS to find out about office hours.
1

機械システム学セミナー(機)(2)

[Textbooks]

[References, etc.]

(Reference books)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

											未更新
Course n	umb	er	U-EN	G27 3	7312 EJ61	U-EN	G27	37312	EJ76		
Course title (and course title in English)					・評価の基 s of microm		nan and	ructor's ne, job ti departn ffiliation	nent	Professor,TS Graduate Scl Professor,SU Graduate Scl	nool of Engineering UCHIYA TOSHIYUKI nool of Engineering IZUKI MOTOFUMI nool of Engineering DKOKAWA RYUUJI
Target yea	ır	4th y	ear students	or above	Number	of cred	its	2	Yea	/semesters	2020/Intensive, Second semester
Days and peri	iods	Inter	nsive	Class	s style	Semina	ar			Language of instruction	Japanese
[Overview	v an	d pı	urpose o	of the	course]						
[Course o	bje	ctive	es]								
	-	_									
10		aluala			-1						
[Course s	scne	aule	e and co	ontent	sj						
,1time,											
,1time,											
,1time,											
,1time, .3times.											
.3times.											
,1time,											
,2times,											
,1time,											
[Course r	equ	irem	nents]								
None											
[Evaluatio	on m	neth	ods and	l polic	;y]						
[Textbool	ks]										
									,	Continue to 7/25	□材料の加工・評価の基礎(2)↓↓↓
									,	vonumue to ×171	-1/34402011工,11111102亜統(2)↑↑↑

Course nur	nber	U-EN	G26 2	6118 SJ72					
Course title (and course title in I English)		ステム工 ent Systen				Instructor's name, job ti and departn of affiliation	tle, nent	Professor,SA Graduate Sch	nool of Engineering WARAGI TETSUO nool of Engineering r,NAKANISHI HIROA
Target year	4th y	ear students	or above	Number	of cred	its 2	Yea	r/semesters	2020/First semester
Days and period	s Wed.	.2	Class	s style	Lecture			Language of instruction	Japanese
[Overview a	and pu	irpose o	f the	course]					
[Course ob	jective	es]							
[Course sc	hedule	e and co	ntent	s]					
,2times,									
2times, 2times,									
2times, 2times,									
,2times,									
,2times,									
,2-3times,									
[Course red	wirem	nents]							
	14.1.0.1	.00]							
-									
None									
None	meth	ods and	polic	>y]					
None	meth	ods and	polio	sy]					
None	meth	ods and	polid	¢y]					
None		ods and	polic	¢y]					
None		ods and	polic	;y]					
None		ods and	polid	:y]					
None	]		polic	[v]					
None [Evaluation [Textbooks	] s, etc.	]	polic	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
None [Evaluation [Textbooks [Reference	] s, etc.	]	polid	2y]					
None [Evaluation [Textbooks [Reference	] s, etc.	]	polic	[y]					
None [Evaluation [Textbooks [Reference	] s, etc.	]	polic	[v]					
None [Evaluation [Textbooks [Reference	] s, etc.	]	polic	<u>ير:</u>					
None [Evaluation [Textbooks [Reference	] s, etc.	]	_ polic						
None [Evaluation [Textbooks [Reference	] s, etc.	]							シ <i>⊼</i> テ᠘፲활〔總〔2]↓↓

[References, etc.]			
(Reference books)			
Study outside of clas	s (preparation and review)]		
(Other information (o	ffice hours, etc.)		
Please visit KULASIS to	find out about office hours.		
[Courses delivered by	instructors with practical work	experience]	
<ol> <li>Category A course with practical con</li> </ol>	ntent delivered by instructors with pra	actical work experience	_
2) Details of instructors'	practical work experience related to	the course	
3) Details of practical clas	ses delivered based on instructors'	practical work experience	

# 知能システム工学(機)(2)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

*Please visit KULASIS to find out about office hours.

# [Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

### 土面新

										未更新
Course nur	nber	U-EN	G26 3	6201 EJ72						
Course title (and course 林 title in 于 English)			Mater	ials Science	e III	nar anc	tructor's ne, job tit d departm affiliation	nent		nool of Engineering ssor,TOYOURA KAZUAKI
Target year	2nd y	ear students	or above	Number	of cred	lits	2	Year	r/semesters	2020/Second semester
Days and period	<b>Is</b> Fri.1		Clas	s style	Lectur	e			Language of instruction	Japanese
[Overview a	and pu	irpose o	of the	course]						
[Course ob	jective	es]								
[Course sc	hedule	e and co	nten	ts]						
,1time, ,1time, ,1time, ,3times, ,4times, ,1time,										
[Course red	quiren	nents]								
None										
[Evaluation	meth	ods and	poli	cy]						
[Textbooks	-									
isbn{}{97842	54240	184}								
[Reference	s, etc.	]								
Reference	ce boo	oks)				-				

(Reference Dooks) isbn[}9784563067120] isbn{}} D.A.Porter and K.E.Easterling: Phase Transformations in Metals and Alloys isbn{}{0412450305} [Study outside of class (preparation and review)]

(Other information (office hours, etc.))

*Please visit KULASIS to find out about office hours.

[Evaluation methods and policy] Evaluation method: Evaluation will be based on one written examination at the end of semester. Evaluation standard: The result of a written examination should be 60 and above out of 100. (60 and above: Passed, 59 and below: Failed) Evaluation may include short reports. [Textbooks] 松原英一郎他 『金属材料組織学』(朝倉書店)ISBN:9784254240184 [References, etc.] (Reference books) [Study outside of class (preparation and review)] Students are required to carry out a review of class. (Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

材料組織学(2)

Course nu	mber	U-EN	G26 3	6202 PJ72						
Course title (and course title in English)			licros	tructure of N	faterials	nar anc	tructor's ne, job tit d departm affiliation	nent		nool of Engineering DEYUKI YASUDA
Target yea	3rd g	year students o	or above	Number	of cred	its	2	Yea	r/semesters	2020/Second semester
Days and peric	ds Mon	.1	Clas	s style	Lecture	•			Language of instruction	Japanese
microstructu will be expla momentum ( mechanism, equilibrium [Course o] 1. To unders	chemic re. In the ined by ranspor solute p processe bjectiv tand rel	eal propert is lecture, using the t). Student partition, n es). es] ationship	ies of the n rmody ts stuc nicros	materials d nicrostructu ynamics and dy the funda tructure sele en microstr	re evolu d kinetic umentals ection, d ucture e	tion s (a of : lend	during tomic di microstr lritic gro	phase ffusio ucture wth, e	transformatio n, thermal ene e evolution (nu	
class 2. Nucleation 3. Interface 1 4.Growing in 5.Dendritic g 6.Solute part solutes) 7.Eutectic gr 8.Non-equili	on (1): f n (1): cl norpho nterface growth ( ition an rowth (1 brium p cture ev e transf	fundament assical nu logy (1): in (3): local (2): mecha d segregat (): coopera bhase trans rolution (2 formation	tals of cleation nterfa- equili- unism tion (2 storma ): rela	thermodyn on theory ar ce morphole ibrium at in of dendritic 2): solute pa growth (eute ation (1): ra tionship be	nd curva ogy (ato terface, growth urtition a ectic gro pid solic tween m	ture mic solu , sel t in t in wth lific	e effect scale), r ite partit lection n terface, s ) of mul cation, n	macro ion, st nechai segreg tiple p on-equ	scopic interfa ability of inte nism gation (non-un phases, selectio uilibrium and	
[Course re Fundamenta			re of I	Materials 1,	,2 and 3			,	Continue to	

Course num	nber									
Course title (and course			on and	measurem	ent	nan and	tructor's ne, job tit I departm ffiliation			nool of Engineering sor,TSUCHIDA HIDETSUGU
Target year	3rd	year students of	or above	Number	of cred	its	2	Year	r/semesters	2020/First semester
Days and period				s style	Lecture	e			Language of instruction	Japanese
[Overview a										
放射線と物質	にとの	)相互作用	、計測	則に用いる	各種放	射緩	粮検出器	の動	作原理や計測	創の計測法について、 則技術等を述べる。本 幹することである。
[Course obj 放射線の性質 技術を理解す	[及び	- 「物質との								いな動作原理や測定
[Course sch	nedu	le and co	ntent	s]						
	的な	概要を説	明する							D概要(測定の種類や いて説明する。
(2)光子線 光子線(X線 連した基本的	₹• y	線)の性		が物質との	相互作	用	(相互作	用過	程とその断面	<b>荷、減衰など)に関</b>
(3)荷電料 荷電粒子(イ ど)に関連し	オン	〈、電子)	の性質		との相	互作	『用(相	互作	用過程、エネ	、ルギー損失、飛程な
(4)中性子 中性子の性質				月(相互作	用過程	、杉	核反応な	ど) (	に関連した基	基本的事項を説明する。
	+ (ガ	iス入り検								この他の検出器)の基 なび基本特性等を解説
(6)放射線 放射線計測の モジュールの	)基本	構成(放								成など)、計測回路( 。
(7)放射綉 荷電粒子線、					ギース	ペク	トルの	代表的	的な測定法に	こついて説明する。
								(	Continue to	放射線計測学(2)↓↓↓

如射線計測学(2)
(8)放射線計測の定量【1週】 (射線計測の定量に関わる基本的事項について解説する。具体的には、絶対測定と相対測定との道 い、検出効率、立体角などを説明する。
(9)放射線計測における統計【2週】 奴射線計測に用いる統計学(確率分布及び誤差伝播など)を説明する。
(10)総括【1週】 講義の全体のまとめを行うとともに、放射線計測を基礎とした放射線の安全な取扱いについて考 タする。
Course requirements]
灵子物理学
Evaluation methods and policy]
記試験の成績により評価する。
Textbooks]
特に定めない
References, etc.]
References, etc.] (Reference books) ニコラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ² . ibid{}{TW86012413} ibid{}{BB01056431}
(Reference books) ニコラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な
(Reference books) ニコラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}
(Reference books) ニコラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431} Study outside of class (preparation and review)]
<ul> <li>(Reference books)</li> <li>ニコラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な</li> <li>ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)]</li> <li>j義中に配布する演習問題及び参考書等を用いて行う。</li> </ul>
<ul> <li>(Reference books)</li> <li>ニコラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な</li> <li>ibid{}(TW86012413) ibid{}(BB01056431)</li> <li>Study outside of class (preparation and review)]</li> <li>i養中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.))</li> </ul>
<ul> <li>(Reference books) コラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)] i義中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.)) o要に応じてプリントを配布する。</li> </ul>
<ul> <li>(Reference books) コラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)] i義中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.)) o要に応じてプリントを配布する。</li> </ul>
<ul> <li>(Reference books) コラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)] i義中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.)) o要に応じてプリントを配布する。</li> </ul>
<ul> <li>(Reference books) コラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)] i義中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.)) o要に応じてプリントを配布する。</li> </ul>
<ul> <li>(Reference books) コラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)] i義中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.)) o要に応じてプリントを配布する。</li> </ul>
<ul> <li>(Reference books) コラス・ツルファニディス著 阪井英次訳 放射線計測の理論と演習(上、下巻)現代工学社な ibid{}{TW86012413} ibid{}{BB01056431}</li> <li>Study outside of class (preparation and review)] i義中に配布する演習問題及び参考書等を用いて行う。</li> <li>(Other information (office hours, etc.)) o要に応じてプリントを配布する。</li> </ul>

Course nu										未更新
	mber	U-ENO	G25 2	5300 LJ71	U-EN	G25	25300	LJ77		
Course title (and course title in English)		戸物理学( ar Reactor F		s		nam and	ructor's e, job til departm filiation	nent	Graduate Scl Professor,KA	nool of Engineering ANNO IKUO
Farget year	· Bro	d year students o	or above	Number	of cred	its	2	Year	/semesters	2020/First semester
Days and perio	ds Fri.	.1	Class	s style	Lecture	e			Language of instruction	Japanese
[Overview	and	purpose o	f the	course]						
10										
[Course ol	ojecti	vesj								
10	و ما م			-1		_				
[Course so	cneal	lie and co	ntent	sj						
4times,										
4times,										
,3times,										
,3times,										
,1time,										
[Course re										
-	quire	ements								
None										
				SVI IV						
[Evaluatio	n met	thods and	polic	· <b>3</b> 1						
[Evaluatio	n met	thods and	polic	·)]						
[Evaluatio	n met	thods and	polic	,11						
		thods and	polic	,,,,						
		thods and	polic	.,,,						
[Evaluatio		thods and	polic	-31			_			
-		thods and	polic	-,,1						
- [Textbook	s]		polic	-,,1	_					
Textbook	s] es, etc	c.]	polic							
- [Textbook	s] es, etc	c.]								
Textbook	s] es, etc	c.]								
Textbook	s] es, etc	c.]	polic				_	_		
Textbook	s] es, etc	c.]					_			
[Textbook	s] es, etc	c.]						_		
Textbook	s] es, etc	c.]			_					
[Textbook	s] es, etc	c.]								
Textbook	s] es, etc	c.]								
Textbook	s] es, etc	c.]								
[Textbook	s] es, etc	c.]								子炉物理学 (原) [2〕↓↓

Course number	U-ENG	27 37404 LJ61					
Course title (and course title in English)		(材) ymer Materials	na an	structor's me, job tit d departm affiliation	nent I	Part-time Lee	cturer,Part-time Lecturer
Target year Brd y	ear students or	above Number	of credits	2	Year/	semesters	2020/Second semester
Days and periods Mon	.3 0	Class style	Lecture			Language of instruction	Japanese
[Overview and pu	urpose of	the course]					
10 11 11							
[Course objective	esj						
[Course schedul	e and con	itents]					
,1time,							
,3times,							
,4times,							
,4times,							
,2times, .1time.							
, rume,							
[Course requiren	nents]						
None							
[Evaluation meth	ods and	policy]					
[Textbooks]							
[References, etc.	-						
(Reference boo	oks)						
[Study outside of	f class (p	reparation and	d review)]				
	U.	•					
Other informati	on (office	hours, etc.)		_			
*Please visit KULA			hours.				
Lease visit ROLA	515 to 1110	out about office					

# 原子炉物理学(原)(2)

[Study outside of class (preparation and review)]

(Other information (office hours, etc.))

*Please visit KULASIS to find out about office hours.

[Courses delivered by instructors with practical work experience]

(1) Category A course with practical content delivered by instructors with practical work experience

(2) Details of instructors' practical work experience related to the course

(3) Details of practical classes delivered based on instructors' practical work experience

										未更新
Course nu	mber	U-ENC	327 3	7133 LJ60		_				
Course title (and course title in English)		回折学(材) Diffraction	)			nan and	tructor's ne, job tit I departm iffiliation	nent		hool of Engineering KUDA HIROSHI
Target year	• Brd	l year students o	r above	Number	of cred	lits	2	Yea	r/semesters	2020/Second semester
Days and perio	ds Fri.	2	Clas	s style	Lectur	e			Language of instruction	Japanese
[Overview	and p	ourpose of	f the	course]						
									ure, the prope les will be lec	erties of X-rays, X-ray etured.
[Course of	ojecti	ves]								
Students will crystalline st									ourse works o	of X-ray properties,
[Course so	chedu	ile and coi	nten	ts]						
3. Practical e lattices\6. Cr Description o projection Diffraction b Calculation o Diffraction b Structural an Determinatio	phy,3ti exampl ystalli of crys of crys of strue y a po alyses on of B uttice a	imes,1.One les of crystai ne structure: tal planes au tals,3times, cture factors wder sampl- of cubic sy: Bravais#039 and diffractio	dime ls\4. 1 s of s nd din 1. Dif e, 1 tin stems lattic on co	Body-center everal comp rections, 1 tir fraction by ne, 1. Princi s, time, 1. De e in cubic s ndition, 3 tir	red cubi pounds ne,1. Do crystall ple of d termina ystems nes,1. D	c, fa escri ine iffra tion efin	ice-cente aption of lattice\2 ctomete of a latt	ered c f lattic . Brag r\2. X tice pa	ubic and hexa e planes and o g conditions a -ray diffraction rameter in cu	4 Bravais#039 lattices' gonal close-packed directions\2. Stereo and scattering angle\3. on by powder sample bic systems\2. 2. Reciprocal lattice and
[Course re	quire	ments]								
None										
[Evaluatio	n met	hods and	poli	cy]						
The course w	vill be	evaluated fr	om tl	he scores of	a midte	erm	examina	ation (	40%) and a fi	nal examination (60%).

_____Continue to 結晶回折学〔初〕[2]↓↓↓

	Imber									
Course title (and course title in English)		トロニクス ction to E			〈情報〉	nam and	ructor's le, job til departm ffiliation	nent		ool of Informatics DRIKURA MASAH
Target yea	r 2nd y	ear students	or above	Number	of cred	its	2	Year	/semesters	2020/First semeste
Days and perio	ds Tue.	5	Class	s style	Lecture	э			Language of instruction	Japanese
[Overview	and pu	urpose o	f the	course]						
[Course o	bjective	es]								
•						_				
[Course se	chedule	e and co	ntent	s]	_					
,2times,										
.5times.										
.2times.										
.5times.										
,1time,										
,,										
[Course re	auiron	anto]								
-	quiren	ientsj								
None										
[Evaluatio	n meth	ods and	polic	;y]						
Textbook	sl									
[Textbook	s]									
[Textbook	s]									
-	-	1								
[Reference	es, etc.	-								
-	es, etc.	-								
[Reference	es, etc.	-								
[Reference (Referen	es, etc. nce boo	oks)								
[Reference	es, etc. nce boo	oks)	prepa	ration and	d revie	w)]				
[Reference (Referen	es, etc. nce boo	oks)	prepa	ration and	d revie	w)]				
[Reference (Referen	es, etc. nce boo	oks)	orepa	ration an	d revie	w)]				
[Reference (Referen	es, etc. nce boo	oks) f class (j				w)]				

結晶回折学(材) <b>(2)</b>	
[Textbooks]	
Instructed during class	
instation during class	
[References, etc.]	
(Reference books)	
[Study outside of class (preparation and review)]	
Concentrate on a lecture, and review the contents which you got by a lecture by rearanging your lecture n and studying any questions of lecture contents for at least 4 hours in each lecture.	ote
(Other information (office hours, etc.))	
*Please visit KULASIS to find out about office hours.	

Course n	umbe	u-ENC	325 4	5995 GJ77						
Course title (and course title in English)		l研究 1 (機 luation Thesis				nai and	tructor's me, job til d departm affiliation	nent		nool of Engineering SHIWAKI SHINJI
Target yea	r	4th year students o	r above	Number of	of cred	its	4	Year	/semesters	2020/Intensive, First semester
Days and peri	ods I	ntensive	Class	s style	Semina	ar			Language of instruction	Japanese
[Overview	/ and	l purpose o	f the	course]						
体的に取り	組む		舌動な	を通じて課	題解決	能力	りを習得			)ための研究活動を主 (果を関連研究と比較
[Course o										
課題設定、	関連	研究の調査、	研到	結画の立	案、報	告0	D作成な	:どを)	通じて、研究	<b>活動について学ぶ。</b>
[Course s	chec	dule and co	ntent	s]						
1 3~1 5 研究計画の	)調査 回 )新規 回 )立案	、報告  性、独創性 ⁴	痔の柿	<b></b>						
[Course r										
ること。					る、入	学生	F次に対	応し;	た特別研究着	<b>手条件を満たしてい</b>
-		ethods and	•			/ ·	-			
成績評価は	(一連	の研究活動の	り実力	も状況に基	ついて	仃"	) ₀			
[Textbook	(s]									
- 配属研究室	で指	定される。								
[Referenc	es, e	etc.]								
( <b>Refere</b> 木下是雄		<b>books</b> ) 科系の作文技	術』	(中央公論	新社(	新書	t)) ISB	N:978	4121006240	
[Study ou	tside	e of class (p	repa	ration and	d revie	w)]				
		示に従うこ								
(Other in	form	ation (office	e hou	urs. etc.)						
		LASIS to find			hours					
			Juit	ut onnee						

# 未更新

Course nu	ımbe	er	U-EN	325 4	5995 GJ77						
Course title (and course title in English)			1(材 n Thesi				nan and	tructor's ne, job ti I departn Iffiliation	nent		hool of Engineering AKAMURA HIROYUKI
Target yea	r	4th year	students o	r above	Number	of cred	its	4	Yea	r/semesters	2020/Intensive, First semester
Days and perio	ods 1	Intensi	ive	Class	s style	Semina	ar			Language of instruction	Japanese
体的に取り し、その意	指導 組む 義や	うのも う。こう う重要	と、材 の研究 性等に [、]	科科 活動な	と に関する を通じて課	題解決	能力	」を習得			つための研究活動を主 成果を関連研究と比較
[Course o 課題設定、	-		-	研究	結画の立	案、報	告の	)作成な	どを	通じて、研究	活動について学ぶ。
[Course s	che	dule a	and co	ntent	s]						
5~9回 先行研究の 10~12 設定課題の 13~15 研究計画の 上記の研究	回新回立 活	見性、 そ めを 4	独創性: 単位分:			に、特	別句	Ŧ究報告	諸の	執筆指導など	ざを行う。
-				が指定	宦する入学	年次の	特別	」研究着	<b>i</b> 手条	件を満たして	ていること
<b>[Evaluatio</b> 成績評価は						席状況	に寿	<u>は</u> づいて	行う。	0	
[Textbook 指導教員が	-	小に指	示する	教科書	書等を利用	する					
[Reference (Referen			s)								
[Study ou					ration an	d revie	w)]				
各指導教員 (Other inf	•••			-	una ata li						
*Please visit						hours					
- Touse visit			2 10 III	. sar t							

	umber	U-E	NG25 4:	5995 GJ77	7				
Course title (and course title in English)		F究 1 () ation The				Instructor name, job and depar of affiliatio	title, tment	Professor,TA Graduate Scl	hool of Engineering AKAGI IKUJI hool of Engineering essor,TAISHI KOBAYAS
Target yea	<b>r</b> 4th	year studen	ts or above	Number	of cred	lits 4	Yea	r/semesters	2020/Intensive, First semes
Days and perio	ods Inte	ensive	Class	s style	Semin	ar		Language of instruction	Japanese
	り組む	、この	研究活動	かを通じて	て課題解	決能力を			央のための研究活動 に成果を関連研究と.
<b>[Course o</b> 課題設定、			查、研多	計画のゴ	之案、報	告の作成	などを	通じて、研タ	汽活動について学ぶ。
			の立案						
[Course re 物理工学原	•	-		定する入学	学年次の	特別研究	着手条	件を満たして	いること
•	: [子核工	学コー	スが指定		学年次の	特別研究	着手条	件を満たして	ていること
• 物理工学原	· 译存核工 on met	学コー) hods ar	スが指定 nd polic	;y]			着手条	件を満たして	ていること
- 物理工学原 [Evaluatio	・ 子核工 の met 二連の	学コー) hods ar	スが指定 nd polic	;y]			着手条	件を満たして	ていること
・ 物理工学原 [Evaluatic 成績評価は	・ 子核工 の met 二連の	学コー) hods ar	スが指定 nd polic	;y]			着手条	件を満たして	こいること
物理工学原 [Evaluatic 成績評価は [Textbook	i子核工 on met :一連の (S]	学コー: hods ar か研究活動	スが指定 nd polic	;y]			着手条	件を満たして	
物理工学原 <b>[Evaluatic</b> 成績評価は <b>[Textbook</b> Not used	i子核工 on met :一連の (s] es, etc nce bo	学习一) hods ar 可研究活動	スが指定 nd polic	;y]			着手条	件を満たして	こいること
物理工学原 [Evaluatic 成績評価は [Textbook Not used [Referenc (Referenc 各指導教員 [Study ou	i子核工 on met 一連の (s] es, etc nce bo が紹介 tside o	学コー) hods ar の研究活動 io(ks) する of class	スが指定 nd polic 動の実育 (prepa	<b>※]</b> 毎状況に考	まづいて	行う。	着手条	件を満たして	にいること
物理工学原 [Evaluatic 成績評価は [Textbook Not used [Referenc 名指導教員 [Study ou 名指導教員	i子核工 on met 一連の (S] es, etc mce bo いが紹介 tside c	学コー hods ar の研究活動 ioks) する of class に従う。	スが指定 nd polic 動の実が (prepa こと	<b>y]</b> 拖状況に害 ration an	まづいて nd revie	行う。	<b>     著手条     </b>	件を満たして	こいること
物理工学原 [Evaluatic 成績評価は [Textbook Not used [Referenc (Referenc 各指導教員 [Study ou	i子核工 on met 一連の (S] es, etc nce bo が紹介 tside c の指示 format	学コー) hods ar の研究活 ioks) する f class に従う ition (off	スが指分 nd polic 動の実が (prepa こと ごce hou	y] 拖状況にま ration an	まづいて nd revie	行う。	<b>着手条</b>	件を満たして	こいること

	umber	U-ENO	G25 45995	5 GJ77						
Course title (and course title in English)		究1(エ tion Thesi				nan and	ructor's ne, job tit departm ffiliation	nent		nool of Energy Science ATANI SHIYOUJI
Farget yea	<b>ar</b> 4th y	ear students of	or above <b>Nu</b>	mber o	of cred	its	4	Year	/semesters	2020/Intensive, First semester
Days and peri	iods Inter	nsive	Class st	yle	Semina	ar			Language of instruction	Japanese
[Overview 担当教員の 空活動をう	う指導の	もと、エ	ネルギー	応用工	学に関	する て 囲	研究調	題を	設定し、その	)課題解決のための研 得られた成果を関連
研究と比較										ほうれた成本で固定
[Course o					-					
課題設定、 [Course s				画の立	案、報	告の	)作成な	:どを)	通じて、研究	活動について学ぶ。
[Evaluatio	D調查、 D調查、 D D 新規性、 D D 立案 equiren 本 ネル:	、独創性 nents] ギー応用 oods and	工学コー policy]	スが指		入学	全年次の	)特別/	研究着手条件	を満たしていること
一連の研究	活動の	実施状況	に基づい	て行う	0					
[Textbool	ks]									
Not used										
Not used	es, etc.	]			_					
[Referenc	es, etc. nce boo	-			_					
[Referenc	nce boo	oks)	preparati	on and	d revie	w)]				
[Referenc (Refere	nce boo	oks) f class (p		on and	d revie	w)]				
[Reference (Refere	nce boo itside of 員の指示	<del>oks</del> ) f class (p に従うこ	と。		d revie	w)]				

Course nu	Imber	U-ENO	G25 45995 GJ77					
Course title (and course title in English)		究 1 (宇 ion Thesis			Instructor's name, job ti and departn of affiliation	nent		hool of Engineering AKATA SHIGERU
Farget yea	r 4th y	ear students o	r above <b>Number</b>	of cred	its 4	Yea	r/semesters	2020/Intensive, First semeste
Days and perio	ods Inter	nsive	Class style	Semina	ar		Language of instruction	Japanese
学,制御工 研究活動を	学,機能 主体的は	能構造力 こ取り組	学,分子流体力	学)に  動を通	関する研穿 じて課題解	記課題 深決能	を設定し,そ 力を習得する	流体数理学,推進コ この課題解決のための 5.得られた成果を関
[Course o		-						
課題設定, [Course s				[案,報	告の作成な	:どを	通じて,研究	昭香動について学ぶ.
5~9回 先行研究の 10~12 設定課題の 13~15 研究計画の [Course re 物理工学科	回 新規性, 回 立案 equiren	独創性 nents]		入学年	次の特別研	f究着:	手条件を満た	としていること.
[Evaluatio 一連の研究			<b>policy]</b> に基づいて行う	•				
[Textbook	s]							
Not used								
[Referenc	es, etc.	]						
( <b>Referer</b> 各担当教員			に応じて指示す	る.				
			preparation an					
			術論文等を学期		て読み進め	つるこ	と.	
-			e hours, etc.))					
*Please visit	KULAS	SIS to find	l out about office	e hours.				

Course nu	ımb	er	U-EN	G25 4	5995 GJ77						
Course title (and course title in English)			モ1(材 on Thesi				nan and	tructor's ne, job ti I departn Iffiliation	nent		hool of Engineering AKAMURA HIROYUKI
Target yea	r	4th ye	ar students	or above	Number	of cred	its	4	Yea	r/semesters	2020/Intensive, Second semester
Days and perio	ods	Inten	sive	Class	s style	Semina	ar			Language of instruction	Japanese
	指導 組む	・ 算のも 3。 こ	・ いと、材 の研究	料科 活動な	よい としして課	題解決	能力	」を習得			Dための研究活動を主 戈果を関連研究と比較
[Course o			-	THE		<i>d</i> a +0	He a	1 / les - là de	17 44 1		WT This and a set Mr. 29
課題設定、						.采、報	吉0	パド成な	:28;	通じて、研究	に活動について学ぶ。
[Course re	調回新回立活 equ 材 n 一 is]	重、 和 見性、 和 かを 4 irem 斗科学 nethc 車の の	独創性 単位分 ents] ビコース ods and 行究活動	実施マ が指知 <b>polic</b> の実が	するととも 室する入学 <b>&gt;y]</b> 極状況、出	年次の 席状況	特別	川研究着	i手条	執筆指導なと 件を満たして 。	
[Referenc (Referen			ks)								
[Study ou 各指導教員					ration and	d revie	w)]				
谷指導教員 (Other in				-	urs. etc.))						
*Please visit						hours.					

Course title (and course title in English)		そ1(房 on Thes				Instructor's name, job t and depart of affiliation	itle, nent	Professor,TA Graduate Sci	hool of Engineering AKAGI IKUJI hool of Engineering essor,TAISHI KOBAYA
Target year	4th ye	ar students	or above	Number	of cred	lits 4	Yea	r/semesters	2020/Intensive, Second semester
Days and period	s Inten	sive	Class	style	Semin	ar		Language of instruction	Japanese
担当教員の指 主体的に取り 較し、その意	) 組む。	この研	究活動	かを通じて	て課題解	決能力を習	官し、 習得す	その課題解決 る。得られ†	央のための研究活動 と成果を関連研究と
[Course obj	jective	s]							
課題設定、関	目連研究	その調査	、研究	計画のゴ	之案、報	告の作成な	ふどを	通じて、研タ	充活動について学ぶ
5~9回 先 10~12回	七行研究 可 設定	ミ課題の	、報告 新規性		生等の検	討			
	七行研9 回 設分 回 研9 quirem	その調査 E課題の E計画の ents]	、報告 新規性 立案	、独創性			花着手	条件を満たし	していること
1 0~1 2回 1 3~1 5回 [Course req 物理工学科质	E行研究 可 設定 可 研究 <b>quirem</b> 夏子核コ	その調査 ご学コー	、報告 新規性 立案 ·スが指	、 独創 ( 定する)			花着手	条件を満たし	していること
$1 0 \sim 1 2 \square$ $1 3 \sim 1 5 \square$ [Course req	E行研究 到 設定 可 研究 quirem 原子核口	その調査の 記載画の ents] 二学コー ods and	、報告 新規性 立案 ·スが指	た、独創性 行定するフ <b>y]</b>	入学年次	の特別研究	吃着手	条件を満たし	していること
1 0~1 2回 1 3~1 5回 [Course req 物理工学科质	た行研究 コ 研究 quirem 良子核コ metho 一連の研	その調査の 記載画の ents] 二学コー ods and	、報告 新規性 立案 ·スが指	た、独創性 行定するフ <b>y]</b>	入学年次	の特別研究	代着手	条件を満たし	していること
1 0~1 2回 1 3~1 5回 [Course req 物理工学科局 [Evaluation 成績評価は-	た行研究 コ 研究 quirem 良子核コ metho 一連の研	その調査の 記載画の ents] 二学コー ods and	、報告 新規性 立案 ·スが指	た、独創性 行定するフ <b>y]</b>	入学年次	の特別研究	花着手	条件を満たし	していること
1 0~1 2回 1 3~1 5回 [Course req 物理工学科病 [Evaluation 成績評価は-	た行研究员 可 設定 quirem 見子核 一連の の 引	Rの調査のの認識 ang ents] 二学コー ods and 肝究活動	、報告 新規性 立案 ·スが指	た、独創性 行定するフ <b>y]</b>	入学年次	の特別研究	22者手;	条件を満たし	していること
1 0~1 2 回 1 3~1 5 回 [Course req 物理工学科局 [Evaluation 成績評価は一 [Textbooks] Not used	た行研究 可設定 可以下 の研究 可 可 の の 可 こ の の の う こ の の の の の の の の の の の の の	その調査の記載の Elます ents] 二学コー ods and 研究活動 ks)	、報告 新規性 立案 ·スが指	た、独創性 行定するフ <b>y]</b>	入学年次	の特別研究	花着手:	条件を満た [ 	していること
1 0~1 2 回 1 3~1 5 回 [Course req 物理工学科房 [Evaluation 成績評価は一 [Textbooks] Not used [References (References 合指導教員力 [Study outs	た行研究 可設定 可認定 可 可 可 可 可 可 何 子 核 工 一 連 の 命 一 一 に た に 、 、 一 一 に た 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、	その調題のの 記書画の ents] 二学コー ods and 开究活動 ks) トる class (	:、報告 新規也 コン スが 指 りの に の 実 所 の 実 所 の 実	<ul> <li>(独創性)</li> <li>(定する)</li> <li>(水)</li> <li>(水)&lt;</li></ul>	入学年次 書づいて	の特別研	· · · · · · · · · · · · · · · · · · ·	条件を満た [	していること
1 0~1 2回 1 3~1 5回 [Course req 物理工学科房 [Evaluation 成績評価は一 [Textbooks] Not used [References 各指導教員力	に行研究 に行研究 に 可 研 の 研 の 和 一 連 の の 和 。 た に 。 。 、 etc.] こ こ の の の の の の の の の の の の の	その調査の 作の課題の ents] 二学コーー 立学コーー かな and 平究活動	<ul> <li>、報想性</li> <li>スが指</li> <li>オ polic</li> <li>のの実施</li> <li>prepa</li> <li>と</li> </ul>	ac 独創性 設定するフ y] w状況にま	入学年次 基づいて nd revie	の特別研	ぞ着手; 	条件を満たし	していること

Course numbe	U-ENG25	45995 GJ77					
Course title (and course title in English)	研究 1 (エネ) uation Thesis1		1	Instructor's name, job ti and departr of affiliatior	tle, nent		hool of Energy Science IATANI SHIYOUJI
Target year	th year students or abov	Number	of credi	ts 4	Year	/semesters	2020/Intensive, Second semester
Days and periods I	ntensive Clas	ss style	Semina			Language of instruction	Japanese
[Overview and							
	に取り組む。こ	の研究活動	を通じて	:課題解決	快能力;	を習得する。	)課題解決のための研 得られた成果を関連
[Course objec		売計画の古	· SP - 40/		いけたい	ふいマ ログ	活動について学ぶ。
	明先の詞宜、研 ule and conter		.余、牧口	ゴリイド成る	12121	囲して、研究	む 百動に  フレー し 子 ふ 。
[Evaluation m	性、独創性等の ements] ルギー応用工学	:コースが指 icy]		、学年次の	)特別和	研究着手条件	‡を満たしていること。
[Textbooks]							
Not used							
[References, e	tc.]						
(Reference I	,						
[Study outside		aration and	d review	/)]			
各指導教員の指							
	ation (office ho		1				
*Please visit KUl	ASIS to find out	about office	e nours.				

Course title (and course title in English)	特別研究		5 45998 GJ77	lr na ar	astructor's ame, job ti nd departn f affiliation	nent	Graduate Scl Professor,NI	
Target yea	<b>r</b> 4th ye	ear students or a	bove Number	of credits	<b>5</b> 6	Year	/semesters	2020/Intensive semester
Days and perio	ods Inten	sive C	lass style	Seminar			Language of instruction	Japanese
			the course]					
体的に取り	組む。こ	この研究活	工学に関する 動を通じて書 いてまとめる	題解決能	力を習得			
[Course o	bjective	es]						
			研究計画のゴ			行う。	これらの成	<b>  、</b> 果を特別
まとめ、発	表するこ	ことを通じ	て、研究活動	加について	字ぶ。			
[Course s	chedule	and cont	ents]		_	_		
10								
設定課題の 2〜10回		独創性等	の再検証					
		すの実施、	結果の考察、	実験また	は理論検	討の	計画の修正な	よどにより
$1.1 \sim 1.3$	回							
成果のまと 14回	め、特別	刊研究報告	書の執筆、学	2 士発表会	のための	)資料(	乍成	
1 4 回 学士発表会	での発表	長						
15回	11-3-03							
特別研究報	台書の言	1止						
[Course re	equirem	ents]						
	超新したシノン	ステム学コ	ースが指定す		年次に対	応する	る特別研究着	「手条件を注
- 物理工学科			) 個修済みでま					
-		判研究1を		らること。				
・ 物理工学科 ること。ま	た、特別			5622.				
- 物理工学科 ること。ま [Evaluatic	た、特別 on metho	ods and p			における	発表	内容、特別研	f究報告書(
- 物理工学科 ること。ま [Evaluatio	た、特別 n metho 一連の研	ods and p	olicy]		における	発表	内容、特別研	「究報告書の
・ 物理工学科 ること。ま <b>[Evaluatic</b> 成績評価は づいて行う	た、特別 on metho :一連の研 。	ods and p	olicy]		における	発表	内容、特別研	千字報告書の
- 物理工学科 ること。ま [Evaluatic 成績評価は	た、特別 on metho 一連の研 。 [s]	<b>ods and p</b> 开究活動の	olicy]		における	発表	内容、特別研	研究報告書の
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· 物理工学科 ること。ま <b>[Evaluatio</b> 成績評価は づいて行う <b>[Textbook</b> 各研究室に	た、特別 m metho 一連の研 。	ods and p 开究活動の 旨定する。	olicy]		における	発表阿	内容、特別の	T究報告書6
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寺別研究2(	( <b>-</b> )				
Churches assis	ide of class (p		4	 	
fildy outs	ide of class (p )指示に従うこと	reparation and	a review)]		
Other info	ormation (office	hours, etc.))			
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Textbooks] 電教員が個別に指示する教科書等を利用する References, etc.] (Reference books) Study outside of class (preparation and review)] 活海教員の指示に従うこと (Other information (office hours, etc.)) Please visit KULASIS to find out about office hours.	-
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(Other information (office hours, etc.))	

Course n	umber	U-EN	G25 4	5998 GJ77						
Course title (and course title in English)		开究2(材) ation Thesi				nar anc	tructor's ne, job ti I departn affiliation	nent		hool of Engineering AKAMURA HIROYUKI
Farget yea	<b>r</b> 4tł	ı year students	or above	Number	of cred	its	6	Yea	/semesters	2020/Intensive, Second semester
Days and peri	ods Int	ensive	Clas	s style	Semina	ar			Language of instruction	Japanese
体的に取り し、その意 [Course o	組む。 議や国	この研究 重要性等に ves]	活動 ⁾ つい	を通じて課 てまとめる	題解決 能力を	能力養う	」を習得 う。	する。	。得られた质	つための研究活動を主
	表する	ることを通	じて、	研究活動						
[Course r	i、結 り 間回、回 告 動 を equire	<ul> <li>県の考察、</li> <li>回間発表の</li> <li>長会での発</li> <li>県の考察、</li> <li>○執筆</li> <li>26単位分</li> <li>ments]</li> </ul>	実験 ため ん 表 実 険 に め に の の の の の の の の の の の の の の の の の	計画の修正 D資料作成 計画の修正 するととも	などに	より	) 研究を 研究報告	:遂行 ;書の:	執筆指導など	
[Evaluatio	on met 一連の	hods and O研究活動	l poli	cy]					件を満たして	ていること 対容、特別研究報告書
								,	Continue to #	閉研究2 〔材〕 〔2〕↓ ↓ ↓

Course title (and course title in English)		別研究2(エニ aduation Thes				Instructor's name, job ti and departn of affiliation	tle, nent		hool of Energy Science IATANI SHIYOUJI
Target yea	r	4th year students	or above	Number	of cred	its 6	Yea	/semesters	2020/Intensive, Second semester
Days and peri	ods	Intensive	Class	style	Semina	ar		Language of instruction	Japanese
究活動を主 研究と比較 [Course o	:体的 そし、	内に取り組む その意義や ctives]	っこの ●重要性	研究活動 等につい	を通じ  てまと	て課題解決 める能力を	、能力 注養う。	を習得する。 ,	D課題解決のための研 得られた成果を関連
		重研究の調査 することを通					行う。	、これらの原	<b></b> 成果を特別研究として
2~10回 実験の実施	1	見性、独創性	等の再	検証					
13回 特別研究中 14~15 特別研究報 [Course ref]	回 め、 間 四 告 equ	中間発表の 発表会での発 書の執筆 irements]	)ための 法	資料作成	*			研究着手条件	牛を満たしていること
成果のまと 13回 特別研究中 14~15 特別研究報 [Course re 物理工学科 [Evaluation	回め、 間回告 equ	中間発表の 発表会での発 書の執筆 irements] ネルギー応用 nethods and	)ための 法 J工学コ J polic	)資料作成 一スが指 y]	定する	入学年次の	)特別(		牛を満たしていること D内容に基づいて行う

別研究2(エネ)(2)
[extbooks]
bt used
References, etc.] (Reference books)
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Study outside of class (preparation and review)]
指導教員の指示に従うこと。
Other to farmer than fatting have a set a
Other information (office hours, etc.))
Please visit KULASIS to find out about office hours.

Course title (and course title in English)		l研究2(宇) luation Thesi	s2			nam and	ructor's le, job tit departm ffiliation	nent		hool of Engineering AKATA SHIGERU
Target yea	r	4th year students o	or above	Number	of cred	lits	6	Year	/semesters	2020/Intensive, Second semester
Days and perio	ods I	ntensive	Clas	s style	Semina	ar			Language of instruction	Japanese
学,制御工 研究活動を 連研究と比	学, 主体 較し	機能構造力 的に取り組 , その意義	学, う む. こ	分子流体力 この研究活	学) に 動を通	関す じて	る研究 課題解	課題	を設定し,そ 力を習得する	流体数理学,推進 その課題解決のため。 5.得られた成果を
	関連									と検証を行う. こね て学ぶ.
13回~1 特別研究の [Course re	め, 5回 発表	と報告書の rements]	執筆		7 244	Vero	#+111(2***	1.44	て ク /4 センド 1	<ol> <li>h+tuirure</li> </ol>
を修得して	いる	こと.			人字牛	-火の	时间	究看 :	テ余件を満方	とし,特別研究1(4
		ethods and の研究活動			告会に	おけ	る発表	長内容,	特別研究幸	服告書の内容に基づい
[Textbook	s]									
Not used										
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Course II	umbe	ər	U-EN	IG25 4	5998 GJ77							
Course title (and course title in English)	別研究2(原) aduation Thesis2					Instructor's name, job title, and department of affiliation			Graduate School of Engineering Professor,TAKAGI IKUJI Graduate School of Engineering Associate Professor,TAISHI KOBAYAS			
arget year 4th year students or above Number of							its	6	Yea	r/semesters	2020/Intensive, Second semester	
Days and peri	Days and periods Intensive Class style Seminar Language distudior Japanese											
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課題解決の	っため	の研	究活動	かを主体	本的に取り	組む。	この	研究活	動を		?課題を設定し、その 释決能力を習得する。 〕を養う。	
[Course of												
課題設定、 まとめ、発									行う。	。これらの成	<b> 炭果を特別研究として</b>	
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	l land		め	北事る	D.346.44X		- 1,2 .			り研究を遂行		
15回 将 [Course r	宇別研 equi	特別  究執	研究執  告会で ents]	の成長	果発表(ポン		表)	別研究	着手	条件を満たし	-	
15回 将 [Course r 物理工学科 [Evaluatio	针別研 Tequi 斗原子 On m	特別 (究朝 remo ·核工	研究韓  告会で    学コー	での成身 -スが打 d polic	県発表(ポン 旨定する入 ≽ <b>y]</b>	、学年次(	表)			条件を満たし	ていること	
15回 N [Course r 物理工学和 [Evaluatic 成績評価は	特別研 equi 科原子 on m よ一連	特別 作究執 <b>rem</b> 核工 <b>ethc</b> 直の研	研究執 告会で mts] 学コー ds an 探活重	での成身 -スが打 d polic	県発表(ポン 旨定する入 <b>≥y]</b> 極状況、特	、学年次(	表)			条件を満たし	-	
15回 N [Course r 物理工学和 [Evaluatic 成績評価は	特別研 equi 体原子 on m は一連 長内容	特別 作究執 <b>rem</b> 核工 <b>ethc</b> 直の研	研究執 告会で mts] 学コー ds an 探活重	での成身 -スが打 d polic	県発表(ポン 旨定する入 <b>≥y]</b> 極状況、特	、学年次(	表)			条件を満たし	ていること	
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1 5回 制 [Course r 物理工学和 [Evaluatio 成額評価は おける発表 [Textbool Not used [Reference (Refere Introduced of [Study ou 各指導教員]	特別研 equi 非原子 on m 進 た 大 反 内 名	中方 中方 中方 中方 中方 中 市 市 市 市 市 市 市 市 市 一 本 核 ー eth に の の む 単 で し の の む 単 の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の の む し の む し の の む し の の む し の む し の む し の む し の む し の む し の む し の む し の む し の む し の む し の む し の む し の む し の つ し つ の つ し つ つ む し の つ し つ つ つ つ し つ つ し つ つ つ つ つ し つ つ つ つ つ つ つ つ つ つ つ つ つ	研究執 「研究執 「研究執 「一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一	での成身 ースが引 す <b>d poli</b> d 小の実抗 行行う。 、 「 <b>prepa</b>	具発表(ポス 旨定する入 室 <b>y]</b> 絶状況、特	学年次( 示別研究= d review	(表)の特) 報告:			条件を満たし	ていること	
15回 श [Course r 物理工学科 [Evaluatio 成績評価は おける発表 [Textbool Not used [Reference (Refere Introduced of [Study ou 各指導教員	特別研 equi 非原子 on m は一 で た 内容 ks] ces, c durin utsidu form	·特別 許完報 rema rema rema rema (の の が と た こ ] bool g clau e of 示に natio	研究す のnts] 学コー 、づいて 、づいて (S) is Class ( 従うこ n (offi	での成長 ースが打 す りの実抗 行行う。 ・ と こ と こ と て を 中 の に	果発表(ポス 旨定する入 <b>シy]</b> 極状況、特 ration an urs, etc.))	学年次( ) ) が別研究 d review	(表)の特) 報告:			条件を満たし	ていること	

# 特別研究2(字)(2) [Study outside of class (preparation and review)] 指示された参考書および学術論文等を学期をかけて読み進めること. (Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

Course numb	er U-ENG	G25 45998 GJ77								
Course title (and course 特) title in Gra English)	別研究2(材 aduation Thesis		n	nstructor's name, job tit nd departm f affiliation		Graduate School of Engineering Professor,NAKAMURA HIROYUK				
Target year	4th year students of	or above <b>Number</b>	of credit	<b>s</b> 6	Year	r/semesters	2020/Intensive, First semester			
Days and periods	Intensive	Class style	Seminar			Language of instruction	Japanese			
体的に取り組む し、その意義 ⁴	尊のもと、材 す。この研究 や重要性等に、	 料科学に関する	題解決能	力を習得			つための研究活動を主 成果を関連研究と比較			
	車研究の調査、	、研究計画の立 じて、研究活動			行う。	、これらの反	<b></b> 東を特別研究として			
[Course sche	dule and co	ntents]								
		等の再検証 実験計画の修正	などによ	り研究を	遂行					
10回		ための資料作成	4							
特別研究中間 1 1~1 3回 実験の実施、 1 4~1 5回 特別研究報告言	結果の考察、	表 実験計画の修正	などによ	り研究を	遂行					
上記の研究活動	助を6単位分	実施するととも	に、特別	]研究報告	書の	執筆指導など	ごを行う。			
[Course requ	irements]									
物理工学科材料	斗科学コース;	が指定する入学	年次の特	闭研究着	手条	件を満たして	こいること			
[Evaluation n										
成績評価は一連 の内容に基づい		の実施状況、出	席状況、	中間発表	会に:	おける発表内	的容、特別研究報告書			
					,	Continue to 特	別研究 2 (材) <b>(2)</b> ↓↓↓			

(and course title in English)		持別研究2(エネ) raduation Thesis2					ructor's ne, job ti departn ffiliation	nent	Graduate School of Energy Science Professor,IMATANI SHIYOUJI		
Farget yea	r	th year stude	nts or abov	Number	of cred	its	6	Yea	r/semesters	2020/Intensive, First semeste	
Days and perio	ods II	ntensive	Clas	s style	Semina	ar			Language of instruction	Japanese	
究活動を主 研究と比較 [Course o	体的 し、 <b>bjec</b>	に取り組 その意義 tives]	む。こ や重要	の研究活動 性等につい	hを通じ いてまと	て課める	!題解決  能力を	2能力 2養う。	を習得する。 ,	D課題解決のための研 得られた成果を関連 成果を特別研究として	
まとめ、発								.11 7	, C1190/	ス木/と村川川元として	
実験の実施 11~12 成果のまと						с ·)	117212	. K21 ]			
特別研究中 1 4 ~ 1 5 特別研究報 [Course re	回 告書 equir	表会での の執筆 ements]	発表			入学	年次の	)特別	研究着手条作	牛を満たしていること	
13回 特別研究中 14~15 特別研究報 [Course re 物理工学科 [Evaluatio	回 告書 equir エネ	表会での の執筆 <b>ements]</b> ルギー応	発表	コースが指		入学	空中次の	)特別	研究着手条件	牛を満たしていること	

# 特別研究2 (材) (2) [Textbooks] 指導教員が個別に指示する教科書等を利用する [References, etc.] (Reference books) [Study outside of class (preparation and review)] 各指導教員の指示に従うこと (Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

特別研究2(エネ)(2)

[Textbooks]

Not used

[References, etc.] (Reference books)

[Study outside of class (preparation and review)] 各指導教員の指示に従うこと。

(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.

Course number	U-ENG25 4:	5998 GJ77						
Course title (and course title in English)	究 2 (原) ion Thesis2		Instructor's name, job ti and departn of affiliation	nent	Graduate School of Engineering Professor,TAKAGI IKUJI Graduate School of Engineering Associate Professor,TAISHI KOBAYASHI			
Target year 4th y	ear students or above	Number of crea	dits 6	Yea	r/semesters	2020/Intensive, First semester		
Days and periods Inter	nsive Class	s style Semin	ar		Language of instruction	Japanese		
	・ を踏まえ、担当 研究活動を主体	á教員の指導のも 体的に取り組む。	この研究活	動を	通じて課題角	宅課題を設定し、その 释決能力を習得する。 力を養う。		
[Course objective 課題設定、関連研究 まとめ、発表する	- 究の調査、研究			行う。	。これらの反			
[Course schedule	e and content	s]						
<ol> <li>1回 設定課題の約</li> <li>2~10回 実験6</li> <li>11回 成果のま、</li> <li>12~14回 特別研究第</li> <li>15回 特別研究第</li> </ol>	の実施、結果の とめ 引研究報告書の	)考察、実験計画 )執筆		によ	り研究を遂行	Ţ		
[Course requirem								
物理工学科原子核	工学コースが措	<b>這する</b> 入学年次	の特別研究	諸手	条件を満たし	していること		
[Evaluation meth	ods and polic	y]						
成績評価は一連ので おける発表内容に		每状況、特別研究	報告書の内	容、!	特別研究報告	告会(ポスター発表)に		
[Textbooks]								
Not used								
[References, etc. (Reference boo	-							
(Reference boo Introduced during cla								
[Study outside of		ration and revie	ew)]					
各指導教員の指示は								
(Other information								
*Please visit KULAS	SIS to find out a	bout office hours.						

								木史新
Course nu	Imber	U-ENG29	39028 LJ10	U-EN	G29 39028	LJ55		
Course title (and course title in English)		析 cal Analysis	Instructor's name, job ti and departr of affiliation	tle, nent	Graduate School of Informatics Associate Professor, YOSHIKAWA HITOSH			
Target yea	r 2nd	year students or ab	Number o	of cred	lits 2	Yea	r/semesters	2020/Second semester
Days and perio	ods Wed	.3 Cla	iss style	Lectur	e	-	Language of instruction	Japanese
[Overview	and p	urpose of th	e course]					
[Course o	bjectiv	es]						
[Course s	chedul	e and conte	nts]					
,1time, ,6times, ,3times,								
,4times, ,1time,								
[Course re	equirer	nents]						
None								
[Evaluatio	n meth	ods and po	licy]					
[Textbook	s]							
[Referenc		-						
(Referer	nce bo	oks)						
[Study ou	tside o	f class (prej	paration and	d revie	w)]			
(Other in	formati	on (office h	ours, etc.)					
*Please visit	KULA	SIS to find ou	t about office	hours.				

Course nu	umber	U-EN	G26 1	6063 LJ72							
Course title (and course title in English)	電気回路基礎論 Fundamentals of Circuit Theory						tructor's ne, job ti I departn Iffiliation	nent	Graduate School of Engineering Associate Professor,HISAKADO TAKASHI		
Target yea	<b>r</b> lst y	ear students o	or above	Number	of cred	lits	2	Year	/semesters	2020/First semester	
Days and perio	Days and periods Tue.5 Class style Lecture Language distrution Japanese										
[Overview	· ·	-									
										resitive elemnts and	
2-port circui		nt source:	s; swit	cnes and dy	ynamics	OII	irst- and	1 secol	nd-order netw	orks; phasor analysis;	
[Course o	bjectiv	es]									
Students are phasor.	expecte	d to learn	the tra	ansient anal	lysis by	diff	erential	equati	on and steady	y state analysis by	
[Course s				-							
DC circuit,3times,We introduce Kirchhoff#039s current law and Kirchhoff#039s voltage law, Ohm#039s law and independent sources. Differential equation of circuit,5times,We introduce inductors and capacitors and explain the differential equation of circuit. AC circuit,4times,We introduce phasor and explain the steady state analysis. two-port circuit,2times,We extend one-port elements to two-port circuits. academic achievement test,1time,The level of understanding on this lecture will be confirmed.											
[Course re	equiren	nents]									
INORE											
[Evaluatio	on meth	ods and	polic	;y]							
Reports and	examina	tions									
[Textbook	(s]										
東村浩士『エース電気回路理論入門』(朝倉書店)ISBN:4254227469											
[Referenc	[References, etc.]										
(Referei	(Reference books)										
[Study ou	tside of	class (p	orepa	ration and	d revie	w)]					
After the les											
*Please visit	(Other information (office hours, etc.)) *Please visit KULASIS to find out about office hours.										

										未更新	
Course nu	umber										
Course title (and course title in English)	ourse 数理解析 Analysis in Mathematical Sciences					nan and	tructor's ne, job tit I departm offiliation	nent	Graduate School of Informatics Associate Professor, YOSHIKAWA HITOSHI		
arget yea	ear 4th year students or above Number of credits 2 Year/semes								/semesters	2020/First semester	
Days and perio				s style	Lecture	e			Language of instruction	Japanese	
[Overview	/ and	purpose o	of the	course]							
	1.1	• • • • •									
[Course o	bject	lives									
[Course s	ched	ule and co	ntent	s]							
1time,											
5times, 3times,											
2times,											
1time,											
1time,											
1time,											
1time,											
,											
[Course re	equir	ements]									
None											
[Evaluatio	on me	ethods and	polio	>y]							
[Textbook	(s]										
[Referenc	es, el	tc.]									
Refere	nce b	ooks)									
[Study ou	tside	of class (	prepa	ration and	d revie	w)]	_				
(Other in	forma	ation (offic	e hou	urs, etc.))			_				
Please visi	t KUL	ASIS to fin	d out a	bout office	hours.						