

Akashi College				Electrical and Computer Engineering Computer Engineering Course								Year				2023											
Department Goals																											
Course Category		Course Title	Course Code	Credit Type	Credits	Class Hours per Week																Instructor	Division in Learning				
						1st Year				2nd Year				3rd Year				4th Year						5th Year			
						1st		2nd		1st		2nd		1st		2nd		1st		2nd				1st		2nd	
						1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q			1 Q	2 Q	3 Q	4 Q
General	Compulsory	Japanese IV	5401	Academic Credit	2																	ZENTOH Masashi					
General	Compulsory	Physical Education IV-1	5402	School Credit	1																	GOTOH Takayuki,KO BAYASHI Yuki					
General	Compulsory	Physical Education IV-2	5403	School Credit	1																	GOTOH Takayuki,MAEDA Tadanori					
General	Compulsory	English IV A	5404	School Credit	1																	AKIMOTO Hiromi					
General	Compulsory	English IV B	5405	School Credit	1																	MORIMOTO Nana					
General	Compulsory	Advanced English I	5406	School Credit	1																	HERBERT John C.					
General	Compulsory	Advanced English II	5407	School Credit	1																	HERBERT John C.					
General	Elective	Chinese-1	5408	School Credit	1																	ARIKAWA Kei					
General	Elective	Chinese-2	5409	School Credit	1																	ARIKAWA Kei					
General	Elective	German-1	5410	School Credit	1																	YOKOTA Kazuya					
General	Elective	German-2	5411	School Credit	1																	YOKOTA Kazuya					
General	Elective	French-1	5412	School Credit	1																	FUJIMOTO Tomonari					
General	Elective	French-2	5413	School Credit	1																	FUJIMOTO Tomonari					
General	Elective	Mathematical Concepts	5414	School Credit	1																	MATSUMIYA Atusi					
General	Elective	Overseas Training II	5415	School Credit	1																	All faculty of the department					

General	Common	Japanese IV-1	5416	School Credit	1																	KUBOTA Ikumi	
General	Common	Japanese IV-2	5417	School Credit	1																	TANGE Atsuko	
Specialized	Common	C o + w o r k III A	5418	School Credit	1																	All faculty	
Specialized	Common	C o + w o r k III B	5419	School Credit	1																	All faculty	
Specialized	Common	Applied Physics I	5420	School Credit	1																	OGASAWARA Hiromichi	
Specialized	Common	Electronic Circuits I	5421	School Credit	1																	OHMUKAI Masato	
Specialized	Common	Preliminaries to Graduation Thesis	5422	School Credit	1																	All faculty of the department	
Specialized	Common	Discrete Mathematics A	5423	School Credit	1																	HAMADA Yukihirō	
Specialized	Common	Discrete Mathematics B	5424	School Credit	1																	HAMADA Yukihirō	
Specialized	Common	Computer Architecture	5425	Academic Credit	2																	NOMURA Hayato	
Specialized	Common	Computer Programming III A	5426	School Credit	1																	HIRANO Masatsugu	
Specialized	Common	Computer Programming III B	5427	School Credit	1																	HIRANO Masatsugu	
Specialized	Common	Operating System	5428	School Credit	1																	NOMURA Hayato	
Specialized	Common	Data Structures and Algorithms	5429	Academic Credit	2																	HAMADA Yukihirō	
Specialized	Common	Experiments of Computer Engineering I A	5430	School Credit	2																	TERASAWA Shinichi, INOUE Kazunari, HIRANO Masatsugu, NOMURA Hayato.	

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General	Elective	Sports Science I	5507	School Credit	1		GOTO H Takayuki,KO BAYASHI Yuki	
General	Elective	Sports Science II	5508	School Credit	1		GOTO H Takayuki,ISHIDA Masami	
General	Elective	T O E I C I	5509	School Credit	1		INOUE Hidetoshi	
General	Elective	T O E I C II	5510	School Credit	2		INOUE Hidetoshi	
General	Elective	T O E I C III	5511	School Credit	3		INOUE Hidetoshi	
General	Elective	Overseas Training III	5512	School Credit	1		All faculty of the department	
Specialized	Compulsory	Intellectual Property Rights	5513	School Credit	1		MORISADA Yuji	
Specialized	Compulsory	Computer Simulation	5514	School Credit	1		OHMUKAI Masato	
Specialized	Compulsory	Graduation Thesis	5515	School Credit	9		All faculty of the department	
Specialized	Compulsory	Probability and Statistics	5516	Academic Credit	2		HAMADA Yukihiko	
Specialized	Compulsory	Information Theory	5517	School Credit	1		NAKAI Yuichi	
Specialized	Compulsory	Compiler	5518	School Credit	1		MIURA Kinya	
Specialized	Compulsory	Software Engineering	5519	School Credit	1		TSUCHIDA Takayuki	
Specialized	Compulsory	Information Network	5520	School Credit	1		INOUE Kazunari	
Specialized	Compulsory	Advanced Information Networks	5521	School Credit	1		INOUE Kazunari	
Specialized	Compulsory	Database	5522	School Credit	1		TSUCHIDA Takayuki	
Specialized	Compulsory	Artificial Intelligence	5523	School Credit	1		MIURA Kinya	

Specialized	Computer	Experiments of Computer Engineering II	5524	School Credit	2													4			HAMADA Yukihiko	
Specialized	Elective	Fundamentals of Communication Systems	5525	Academic Credit	2													2				
Specialized	Elective	Communication System	5526	School Credit	1														2			
Specialized	Elective	Control Engineering II	5527	School Credit	1													2			ENOMOTO Ryuji	
Specialized	Elective	Application of Electronics	5528	School Credit	1													2			ENOMOTO Ryuji	
Specialized	Elective	Image Engineering	5529	Academic Credit	2														2		NAKAI Yuichi	
Specialized	Elective	Qualifications in Computer Engineering I	5530	School Credit	1													1	1		NAKAI Yuichi	
Specialized	Elective	Qualifications in Computer Engineering II	5531	School Credit	1													1	1		NAKAI Yuichi	

Akashi College		Year	2023		Course Title	Japanese IV	
Course Information							
Course Code		5401		Course Category		General / Compulsory	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials		野田尚史・森口稔著：日本語を話すトレーニング（ひつじ書房）					
Instructor		ZENTOH Masashi					
Course Objectives							
1）報告・論文を、整理した情報を基にして、主張が効果的に伝わるように論理の構成や展開を工夫し、作成することができる。 2）作成した報告・論文の内容および自分の思いや考えを、的確に口頭発表することができる。 3）課題に応じ、根拠に基づいて議論できる。							
Rubric							
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目1		明確な結論・意見・報告を分かりやすく、論理的・実証的、レイアウトにも優れたレジメに作成できる。		明確な結論・意見・報告を分かりやすく、論理的・実証的なレジメに作成できる。		結論・意見・報告を示す材料は上げられるが構成・レイアウトに不備がある。	
評価項目2		動作・スピード・わかりやすさに優れたプレゼンテーションができ、質問にも的確に答えることができる。		準備されたプレゼンテーションができるが、質問に対して即座に適切な回答ができない。		読み合わせに近いプレゼンテーションとなっている。	
評価項目3		テーマに即した意味のある発言が、簡潔・論理的・実証的にできる。		テーマに合った、意味のある発言だが、冗長となっている。		テーマから外れてはいないが、未整理な発言内容である。	
Assigned Department Objectives							
Teaching Method							
Outline		テキストの設定に従った学生の発表と、それに対する質疑応答を中心に授業を進行する。日本語を使用する様々な場面での諸問題を取り上げ、日本語の表現と日本人の発想の特徴について、知識の整理、自発的な考察、適切な実践により習得することを目指す。					
Style		講義形式。学生のプレゼンテーション（A4 1 枚のレジメを使用）と質疑応答を中心に、各テーマの理解とプレゼン技術の習得をはかる。					
Notice		本科目は、授業で保証する学習時間と、予習・復習及び課題レポート作成に必要な標準的な自己学習時間の総計が、90時間に相当する学習内容である。 事前学習を含め、発表と質疑応答に意欲的に取り組み、国語表現に必要な知識と技術を実際に習得しよう心がけること。なお適宜、資料を配付し、小テストを実施する。 評価の対象としない欠席条件(割合) 1/3以上の欠課					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester	1st Quarter	1st	オリエンテーション 授業の概要 発表予定の立案		レジメの作成の仕方、プレゼン注意、それぞれの評価基準が理解できる。		
		2nd	問い合わせをする トレーニング 1 の発表と質疑応答 上記問題点の考察と整理		「問い合わせ」のテーマを理解し、必要な技術（話し方・5W2H・タイミングなど）を中心としたレジメを作成し、プレゼンテーションすることができる。		
		3rd	お願いをする トレーニング 3 の発表と質疑応答 上記問題点の考察と整理		「お願いする」テーマを理解し、必要な技術（気配り・タイミング・話し方など）を中心としたレジメを作成し、プレゼンテーションすることができる。		
		4th	誘う・断る・謝る トレーニング 5 の発表と質疑応答 上記問題点の考察と整理		対他意識に関するテーマを理解し、必要な技術（気配り・タイミング・話し方）を中心としたレジメを作成し、プレゼンテーションすることができる。		
		5th	スピーチをする トレーニング 9 の発表と質疑応答 上記問題点の考察と整理		「スピーチ」のテーマを理解し、必要な技術（ふさわしい内容・話し方）を中心としたレジメを作成し、プレゼンテーションすることができる。		
		6th	文書作成の基礎的技術（図表・引用）		図表の作成の仕方、引用の仕方を適切に行える		
		7th	やさしい日本語 トレーニング 1 2 の発表と質疑応答 上記問題点の考察と整理		「やさしい日本語」のテーマを理解し、必要な技術（語選択・異文化理解・マナーなど）を中心としたレジメを作成し、プレゼンテーションすることができる。		
		8th	会議で発言する(1) トレーニング 1 0 の発表と質疑応答 上記問題点の考察と整理		「会議での発言」のテーマを理解し、必要な技術（意見整理・決定の仕方・会議進行など）を中心としたレジメを作成し、プレゼンテーションすることができる。		
	2nd Quarter	9th	会議で発言する(2)+プレゼンテーション（1） トレーニング 1 3 の発表と質疑応答 上記問題点の考察と整理やさしい日本語 トレーニング 1 2 の発表と質疑応答 上記問題点の考察と整理		上記に加え、「プレゼンテーション」のテーマを理解し、必要な技術（材料選択・資料作成など）を中心としたレジメを作成し、プレゼンテーションすることができる。		

		10th	プレゼンテーション(2) トレーニング1 3の発表と質疑応答 上記問題点の考察と整理	「プレゼンテーション」のテーマを理解し、必要な技術（材料選択・資料作成など）を中心としたレジメを作成し、プレゼンテーションすることができる。
		11th	研究発表(1) トレーニング1 4の発表と質疑応答 上記問題点の考察と整理	「研究発表」のテーマを理解し、必要な技術（スライド・質疑応答など）を中心としたレジメを作成し、プレゼンテーションすることができる。
		12th	研究発表(2)+面接(1) トレーニング1 5の発表と質疑応答 上記問題点の考察と整理	「面接」のテーマを理解し、必要な技術（質問意図・種類別の基準・自己紹介の仕方など）を中心としたレジメを作成し、プレゼンテーションすることができる。
		13th	面接(2) トレーニング1 5の発表と質疑応答 上記問題点の考察と整理	「面接」のテーマを理解し、必要な技術（志望理由・質問を通じたPRなど）を中心としたレジメを作成し、プレゼンテーションすることができる。
		14th	アカデミックライティングの基礎（研究計画書・論文の構成）	研究計画の作成の仕方、論文の書き方の基本を理解することができる
		15th	レポート・論文の作成の仕方（パワーライティング・論証・例示）	文章の構成、論証、適切な例示の示し方を理解できる
		16th	期末試験	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Physical Education IV-1	
Course Information							
Course Code		5402		Course Category		General / Compulsory	
Class Format		Skill		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		GOTOH Takayuki,KOBAYASHI Yuki					
Course Objectives							
<ul style="list-style-type: none">Participate in classes to improve students' own health and physical strength. Also, have some level of self-discipline.Can take action to conduct sports safely. Also, recognizes the significance of collaborating and cooperating with the team and can take the necessary action to do so.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Actively participate in classes to improve their health and physical strength. Have a high level of self-discipline.		Participate in classes to improve their health and physical strength. Have some level of self-discipline.		Do not participate in classes. Do not strive to improve their health and physical strength. Have a poor level of self-discipline.	
Achievement 2		Actively participate in various sport practices and games, and are very competitive. Also have a great influence on games, etc.		Can participate in various sport practices and games.		Do not participate in various sport practices and games.	
Achievement 3		Understand and can play or take on the role of a leader.		Understand the role of a leader, but cannot play that role.		Do not understand the role of a leader. Also, never play that role.	
Assigned Department Objectives							
Teaching Method							
Outline		The goal of this course is for students to learn more about the fun and depth of sports so that they can build the habit of playing sports on a daily basis. This class requires an active and proactive attitude to participate. Students will split into groups and leaders will take the lead to plan, review, and implement the course content. Students can choose from: Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc					
Style		Students are encouraged to improve their skills through games based on the rules, how to play games, and the basic skills they learned in previous years. They are also encouraged to experience the fun of enhancing teamwork while collaborating and cooperating with your team with your leader in the center. Students should take the initiative in creating a safe and welcoming class, and the instructors support their effort.					
Notice		<ul style="list-style-type: none">Wear training wear and athletic shoes. If students fail to wear them, points will be deducted from their grade.Do not wear or bring accessories, watches, or any other unnecessary items. These are also eligible for grade deduction.Tardiness will be excused for the first 20 minutes. Students can participate in the class after 20 minutes, but their attendance will be marked as absent.If it is discovered that a student left class early without being excused (ditching class), their attendance for that class will be marked as absent, and their grade for previous classes will suffer a deduction equal to an absence.Students who miss 1/4 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester r	1st Quarter	1st	Guidance Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Understand the purposes and objectives of this course. Split into teams in each sport and select a leader.		
		2nd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		3rd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		4th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		5th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		6th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		7th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		

		8th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
	2nd Quarter	9th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Split into teams in each sport and select a leader.
		10th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		11th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		12th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		13th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		14th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		15th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		16th	No final exam	

Evaluation Method and Weight (%)

	Approach to a class	Practical skill	Leadership	Total
Subtotal	75	15	10	100
Basic Proficiency	75	0	0	75
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	15	10	25

Akashi College		Year	2023	Course Title	Physical Education IV-2
Course Information					
Course Code	5403		Course Category	General / Compulsory	
Class Format	Skill		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	GOTOH Takayuki, MAEDA Tadanori				
Course Objectives					
<ul style="list-style-type: none"> Participate in classes to improve students' own health and physical strength. Also, have some level of self-discipline. Can take action to conduct sports safely. Also, recognizes the significance of collaborating and cooperating with the team and can take the necessary action to do so. 					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Actively participate in classes to improve their health and physical strength. Have a high level of self-discipline.		Participate in classes to improve their health and physical strength. Have some level of self-discipline.		Do not participate in classes. Do not strive to improve their health and physical strength. Have a poor level of self-discipline.
Achievement 2	Actively participate in various sport practices and games, and are very competitive. Also have a great influence on games, etc.		Can participate in various sport practices and games.		Do not participate in various sport practices and games.
Achievement 3	Understand and can play or take on the role of a leader.		Understand the role of a leader, but cannot play that role.		Do not understand the role of a leader. Also, never play that role.
Assigned Department Objectives					
Teaching Method					
Outline	The goal of this course is for students to learn more about the fun and depth of sports so that they can build the habit of playing sports on a daily basis. This class requires an active and proactive attitude to participate. Students will split into groups and leaders will take the lead to plan, review, and implement the course content. Students can choose from: Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc				
Style	Students are encouraged to improve their skills through games based on the rules, how to play games, and the basic skills they learned in previous years. They are also encouraged to experience the fun of enhancing teamwork while collaborating and cooperating with your team with your leader in the center. Students should take the initiative in creating a safe and welcoming class, and the instructors support their effort.				
Notice	<ul style="list-style-type: none"> Wear training wear and athletic shoes. If students fail to wear them, points will be deducted from their grade. Do not wear or bring accessories, watches, or any other unnecessary items. These are also eligible for grade deduction. Tardiness will be excused for the first 20 minutes. Students can participate in the class after 20 minutes, but their attendance will be marked as absent. If it is discovered that a student left class early without being excused (ditching class), their attendance for that class will be marked as absent, and their grade for previous classes will suffer a deduction equal to an absence. Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Guidance Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Understand the purposes and objectives of this course. Split into teams in each sport and select a leader.	
		2nd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		3rd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		4th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		5th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		6th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		7th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	

		8th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
	4th Quarter	9th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Split into teams in each sport and select a leader.
		10th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		11th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		12th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		13th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		14th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		15th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		16th	No final exam	

Evaluation Method and Weight (%)				
	Approach to a class	Practical skill	Leadership	Total
Subtotal	75	15	10	100
Basic Proficiency	75	0	0	75
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	15	10	25

Akashi College		Year	2023		Course Title	English IV A
Course Information						
Course Code	5404			Course Category	General / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials	(1) Roman Holiday (2) DataBase (3) NextStage					
Instructor	AKIMOTO Hiromi					
Course Objectives						
(1) Improve the English listening and reading skills: Improve practical English proficiency through listening and reading exercises using a movie-oriented textbook. (2) Improve English vocabulary and grammar: Retain basic English skills through learning English words and grammatical elements. (3) Understand culture and history of English-speaking countries Gain a deeper understanding of American social issues and modern history using videos.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
Achievement 1	Can fully improve practical English proficiency through listening and reading exercises.		Can improve practical English proficiency through listening and reading exercises.		Cannot improve practical English proficiency through listening and reading exercises.	
Achievement 2	Can fully improve English vocabulary through learning English vocabulary.		Can improve English vocabulary through learning English vocabulary.		Cannot improve English vocabulary through learning English vocabulary.	
Achievement 3	Fully learn a wide range of knowledge and skills, including the logical thinking and international perspective necessary for future engineers.		Learn a wide range of knowledge and skills, including the logical thinking and international perspective necessary for future engineers.		Do not learn a wide range of knowledge and skills, including the logical thinking and international perspective necessary for future engineers.	
Assigned Department Objectives						
Teaching Method						
Outline	(1) The aim is to improve practical English proficiency through a movie-oriented textbook. (2) Comprehend information from videos and authentic materials and link it to oral speech in English.					
Style	There will be vocabulary tests. Lessons explain the key points in the textbook and do practice questions for each unit.					
Notice	Students who miss 1/4 or more of classes will not be eligible for evaluation. Course schedule will be provided in the first week. Be sure to understand in detail.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan						
			Theme	Goals		
1st Semester r	1st Quarter	1st	Class guidance Explain how classes will be conducted, vocabulary quizzes, assignments grading system, etc.	Gain a proper understanding on the class content and assignments, and plan ahead.		
		2nd	Learn culture of English-speaking countries with videos	Improve vocabulary, grammar, and listening and reading skills through video		
		3rd	Unit 1: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		4th	Unit 2: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		5th	Unit 3: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		6th	Learn culture of English-speaking countries with videos	Improve vocabulary, grammar, and listening and reading skills through video		
		7th	Unit 4: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		8th	Unit 5: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
	2nd Quarter	9th	Unit 6: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		10th	Learn culture of English-speaking countries with videos	Improve vocabulary, grammar, and listening and reading skills through video		
		11th	Unit 7: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		12th	Unit 8: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		13th	Unit 9: Learn listening and reading on the topics	Improve vocabulary, grammar, and listening and reading skills following the topics of the textbook.		
		14th	Learn culture of English-speaking countries with videos	Improve vocabulary, grammar, and listening and reading skills through video		

		15th	Q&A for the final exam	Reflect on the class content so far, and review and answer to questions for the periodic exam.			
		16th	The final exam	Test their understanding of the class content so far.			
Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Quizes	Total
Subtotal	50	0	0	0	0	50	100
Basic Proficiency	50	0	0	0	0	50	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	English IV B
Course Information						
Course Code	5405			Course Category	General / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	Second Semester			Classes per Week	2	
Textbook and/or Teaching Materials	Our Science (Seibido), Database 4500 (Kiriara), Next Stage (Kiriara)					
Instructor	MORIMOTO Nana					
Course Objectives						
(1) Develop the necessary vocabulary skills, as well as the ability to read and write in English through the practice of reading English content and writing in English. (2) Improve hearing skills and English proficiency by using audio materials or other means. (3) Gain a wide range of knowledge and skills, including an international perspective as an engineer, through dealing with various topics related to modern society.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
Achievement 1	Can fully develop the necessary vocabulary skills, as well as the ability to read and write in English through the practice of reading English content and writing in English.		Can develop the necessary vocabulary skills, as well as the ability to read and write in English through the practice of reading English content and writing in English.		Cannot develop the necessary vocabulary skills, as well as the ability to read and write in English through the practice of reading English content and writing in English.	
Achievement 2	Can fully improve hearing skills and English proficiency by using audio materials that come with the textbook or other means.		Can improve hearing skills and English proficiency by using audio materials that come with the textbook or other means.		Cannot improve hearing skills and English proficiency by using audio materials that come with the textbook or other means.	
Achievement 3	Can fully gain a wide range of knowledge and skills, including an international perspective as an engineer, through dealing with various topics related to modern society.		Can gain a wide range of knowledge and skills, including an international perspective as an engineer, through dealing with various topics related to modern society.		Cannot gain a wide range of knowledge and skills, including an international perspective as an engineer, through dealing with various topics related to modern society.	
Assigned Department Objectives						
Teaching Method						
Outline	The aim of this course is to help students improve their English vocabulary and reading comprehension in order to develop English skills they will need as an engineer in the age of globalization, and gain knowledge of the syntax and grammar necessary for reading comprehension.					
Style	There will be vocabulary quizzes in every lesson. Students will read English texts and solve exercise questions to test their understanding of the content. We will use CDs to build listening ability. We will practice English writing based on the content learned. There will be assignments as appropriate.					
Notice	Students who miss 1/4 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
2nd Semester	3rd Quarter	1st	Orientation		Gain a proper understanding on the class content and assignments, and plan ahead.	
		2nd	Unit 1		Understand the English sentences in each Unit and can use them appropriately.	
		3rd	Unit 2		Understand the English sentences in each Unit and can use them appropriately.	
		4th	Unit 3		Understand the English sentences in each Unit and can use them appropriately.	
		5th	Exercises		Understand the English sentences in each Unit and can use them appropriately.	
		6th	Unit 4		Understand the English sentences in each Unit and can use them appropriately.	
		7th	Unit 5		Understand the English sentences in each Unit and can use them appropriately.	
		8th	Unit 6		Understand the English sentences in each Unit and can use them appropriately.	
	4th Quarter	9th	Exercises		Understand the English sentences in each Unit and can use them appropriately.	
		10th	Unit 7		Understand the English sentences in each Unit and can use them appropriately.	
		11th	Unit 8		Understand the English sentences in each Unit and can use them appropriately.	
		12th	Unit 9		Understand the English sentences in each Unit and can use them appropriately.	

		13th	Exercises	Understand the English sentences in each Unit and can use them appropriately.
		14th	Unit 10	Understand the English sentences in each Unit and can use them appropriately.
		15th	Review	Summary of the content learned.
		16th	Final exam	Test their understanding of the class content so far.

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	Advanced English I
Course Information					
Course Code	5406		Course Category	General / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials	Knockout Presentations - How to Deliver Your Message with Power, Punch, and Pizzazz (Third Edition) [Available on paperback or e-book], Morgan James Publishing, © 2019 by Diane DiResta. This book is required for both Advanced English I & II .				
Instructor	HERBERT John C.				
Course Objectives					
1) Mastering presentation delivery skills 2) Writing stimulating presentation content 3) Recognizing weaknesses in presentations and tactfully suggesting ideas for peer and self-improvement 4) Using Visual Aids effectively in a presentation 5) Handling questions from the audience skillfully 6) Writing conference proposals					
Rubric					
	Mastery Level		Standard Level		Unacceptable Level
Objective 1 Mastering presentation delivery skills	Able to use confident body language, a strong voice, great eye contact, appropriate intonation and stress, and natural gestures in a presentation		Able to show an awareness of how to use body language, voice projection, eye contact, intonation, stress, and gestures in a presentation		Cannot use body language, voice projection, eye contact, intonation, stress, or gestures appropriately in a presentation
Objective 2 Writing stimulating presentation content	Able to write persuasive and interesting presentation content		Able to show an awareness of how to write persuasive and interesting presentation content		Cannot write persuasive or interesting presentation content
Objective 3 Peer and self-critiquing	Able to give tactful and constructive criticism and advice in peer critiques and to write well thought out self-reflections		Able to show an awareness of how to give tactful and constructive criticism and advice in peer critiques and to write well thought out self-reflections		Cannot give tactful or constructive criticism or advice in peer critiques and not able to write sincere self-reflections
Objective 4 Using visual aids effectively in a presentation	Able to create and use visual aids that are easy for the audience to look at and understand		Able to show an awareness of how to create and use visual aids that are easy for the audience to look at and understand		Cannot create or properly use visual aids that are easy for the audience to look at and understand
Objective 5 Handling questions from the audience skillfully	Able to handle difficult questions from a presentation audience tactfully and confidently		Able to show an awareness of how to handle difficult questions from a presentation audience tactfully and confidently		Cannot handle questions from the audience with confidence
Objective 6 Writing conference proposals	Able to write research abstracts and summaries as impressive conference presentation proposals		Able to show an awareness of how to write research abstracts and summaries as conference presentation proposals		Cannot write research abstracts or summaries in English
Assigned Department Objectives					
Teaching Method					
Outline	Advanced English I involves the preparation and confident delivery of English presentations designed for professional and business contexts.				
Style	There will be several short assignments and activities from the textbook to prepare students for their initial and final presentations.				
	For Akashi Kosen students, the class will meet in the Global Terrace, but they may be asked to do group work with students from other NIT campuses in TEAMS channels assigned to them during class time.				
	Students from other NIT campuses, who have been accepted into this class, may join each class via TEAMS.				
	The final project of this course is an (in class) online "Professional and Business English Presentation Contest," where the students will present their work orally in front of peers and teachers. In addition to the 20 students enrolled in class, up to five additional individuals and/or teams of 2 or 3 students might be accepted for participation in the online contest through a vetting process. All participants will receive a "Certificate of Achievement" unless they are among the top ranked contestants, in which case they will receive a "Certificate of Excellence" with their ranking indicated.				
Notice	Students who miss 1/4 or more of classes will not be eligible for evaluation.				
	Students must critique each other's work and self-reflect on each of their practice presentation performances.				
	Final contest eligibility for those who are not enrolled in the class will be extended to all interested NIT students regardless of their nationality, native language, or academic year.				
	Students must not recycle their presentation content from or into any other presentations for other class assignments or contests such as COCET's English Presentation Contest.				
	Whether the students participate in person or through a live camera projection, the teacher must be able to see ALL of the participants engaged in relevant class time behavior throughout the duration of each class. Otherwise, the teacher reserves the right to mark the student absent. Students joining via TEAMS must leave their cameras on.				

Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Course and textbook introductions Dos and don'ts of public speaking Homework: 1) Choose a presentation topic. 2) Read "Unit 1: Secrets of Platform Effectiveness"	Consider how to make the most of the course and textbook this semester. Begin planning a persuasive presentation.	
		2nd	Unit 1: Secrets of Platform Effectiveness Homework: 1) Write a presentation outline. 2) Read "Unit 7: Listener-Centered Communication: Principles of Persuasion."	Learn about the common myths of public speaking and mistakes that many speakers make. Learn tips for writing a presentation outline and organizing presentation content.	
		3rd	Unit 7: Listener-Centered Communication Principles of Persuasion (Part One) Critique a classmate's outline. Homework: 1) Write a first draft of your presentation. 2) Review "Unit 7: Principles of Persuasion"	Study techniques that will make you a more persuasive presenter. Work together with peers to improve your presentation focus.	
		4th	Unit 7: Listener-Centered Communication Principles of Persuasion (Part Two) Critique a classmate's first draft. Homework: Revise and rehearse your presentation.	Study techniques that will make you a more persuasive presenter. Work together with peers to improve your presentation content.	
		5th	Presentation workshop Peer critiques Homework: Rehearse your presentation and visualize/dream of having a perfect performance.	Work in groups to help each other rehearse and polish the forthcoming "Initial Presentations." Complete peer evaluation forms.	
		6th	Initial Presentations (Part One) Homework: Write your self-reflection report on how you may have done a better Initial Presentation.	Make a persuasive presentation in English with confidence and enthusiasm. We will do the first 10 of 20 presentations in this class.	
		7th	Initial Presentations (Part Two) Homework: 1) Write your self-reflection report on how you may have done a better Initial Presentation. 2) Read "Unit 2: Sizzle or Steak?"	Make a persuasive presentation in English with confidence and enthusiasm. We will do the second 10 of 20 presentations in this class.	
		8th	Unit 2: Sizzle or Steak? Adding pizzazz to your presentation (Part One) Homework: 1) Rewrite your presentation transcript based on self-reflection, peer critiques, and teacher feedback. 2) Review "Unit 2: Sizzle or Steak?"	Develop visual, vocal, and verbal presentation delivery skills. Work together with peers to improve your presentation content.	
	2nd Quarter	9th	Unit 2: Sizzle or Steak? Adding pizzazz to your presentation (Part Two) Final Presentation rehearsals (In class and/or as homework) Homework: Read "Unit 3: Fear Fixes: Conquering Nervousness"	Develop visual, vocal, and verbal presentation delivery skills. Prepare for your final presentation.	
		10th	Unit 3: Fear Fixes Conquering Nervousness (Part One) Final Presentation rehearsals (In class and/or as homework) Homework: Review "Unit 3: Fear Fixes: Conquering Nervousness"	Practice exercises that may help you control your nervousness when you perform in front of an audience. Prepare for your final presentation.	
		11th	Unit 3: Fear Fixes Conquering Nervousness (Part Two) Final Presentation rehearsals (In class and/or as homework) Homework: Read "Unit 4: Listening: The Other Side of Speaking"	Practice exercises that may help you control your nervousness when you perform in front of an audience. Prepare for your final presentation.	
		12th	Unit 4: Listening: The Other Side of Speaking Becoming a better listener and helping others to listen to you (Part One) Final Presentation rehearsals (In class and/or as homework) Homework: Review "Unit 4: Listening: The Other Side of Speaking"	Practice exercises that may help you become a better listener and help others to listen to you. Prepare for your final presentation.	
		13th	Unit 4: Listening: The Other Side of Speaking Becoming a better listener and helping others to listen to you (Part Two) Final Presentation rehearsals (In class and/or as homework)	Practice exercises that may help you become a better listener and help others to listen to you. Prepare for your final presentation.	
		14th	Presentation workshop Peer critiques Homework: Rehearse your presentation and visualize/dream of having a perfect performance.	Work in groups to help each other rehearse and polish the forthcoming "Final Presentations." Complete peer evaluation forms.	

		15th	Final presentation in the context of a presentation contest within the class Summer Homework (For Advanced English II): Choose a topic for a research conference presentation and write an abstract and summary as a presentation proposal.	Presentation grades will be determined by how well the presentation reflects the acquisition and implementation of presentation techniques learned from this course. The winners of the contest will be determined separately, without direct references to the content taught in the course.
		16th	No Test	

Evaluation Method and Weight (%)

	Short Assignments/Reflective Writing	Initial Presentation	Final Presentation	Total
Subtotal	30	30	40	100
Professional Presentation Skills	30	30	40	100

Akashi College		Year	2023	Course Title	Advanced English II
Course Information					
Course Code	5407		Course Category	General / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials	Knockout Presentations - How to Deliver Your Message with Power, Punch, and Pizzazz (Third Edition) [Available on paperback or e-book], Morgan James Publishing, © 2019 by Diane DiResta. This book is required for both Advanced English I & II.				
Instructor	HERBERT John C.				
Course Objectives					
1) Mastering presentation delivery skills 2) Writing stimulating presentation content 3) Recognizing weaknesses in presentations and tactfully suggesting ideas for peer and self-improvement 4) Using Visual Aids effectively in a presentation 5) Handling questions from the audience skillfully 6) Writing conference proposals					
Rubric					
	理想的な到達レベルの目安	標準的な到達レベルの目安	未到達レベルの目安		
評価項目1 Mastering presentation delivery skills	Able to use confident body language, a strong voice, great eye contact, appropriate intonation and stress, and natural gestures in a presentation	Able to show an awareness of how to use body language, voice projection, eye contact, intonation, stress, and gestures in a presentation	Cannot use body language, voice projection, eye contact, intonation, stress, or gestures appropriately in a presentation		
評価項目2 Writing stimulating presentation content	Able to write persuasive and interesting presentation content	Able to show an awareness of how to write persuasive and interesting presentation content	Cannot write persuasive or interesting presentation content		
評価項目3 Peer and self-critiquing	Able to give tactful and constructive criticism and advice in peer critiques and to write well thought out self-reflections	Able to show an awareness of how to give tactful and constructive criticism and advice in peer critiques and to write well thought out self-reflections	Cannot give tactful or constructive criticism or advice in peer critiques and not able to write sincere self-reflections		
評価項目4 Using visual aids effectively in a presentation	Able to create and use visual aids that are easy for the audience to look at and understand	Able to show an awareness of how to create and use visual aids that are easy for the audience to look at and understand	Cannot create or properly use visual aids that are easy for the audience to look at and understand		
評価項目5 Handling questions from the audience skillfully	Able to handle difficult questions from a presentation audience tactfully and confidently	Able to show an awareness of how to handle difficult questions from a presentation audience tactfully and confidently	Cannot handle questions from the audience with confidence		
評価項目6 Writing conference proposals	Able to write research abstracts and summaries as impressive conference presentation proposals	Able to show an awareness of how to write research abstracts and summaries as conference presentation proposals	Cannot write research abstracts or summaries in English		
Assigned Department Objectives					
Teaching Method					
Outline	Advanced English II involves the preparation and confident delivery of English presentations designed for professional research conferences.				
Style	There will be several short assignments and activities from the textbook to prepare students for their initial and final presentations. For Akashi Kosen students, the class will meet in the Global Terrace, but they may be asked to do group work with students from other NIT campuses in TEAMS channels assigned to them during class time. Students from other NIT campuses, who have been accepted into this class, may join each class via TEAMS. The final project of this course is an (in class) online "Mock Research Conference," where the students will present their work orally in front of peers and teachers.				
Notice	評価の対象としない欠席条件(割合) 1/4以上の欠課。 Students must critique each other's work and self-reflect on each of their practice presentation performances. Students must not recycle their presentation content from or into any other presentations for other class assignments or contests such as COCET's English Presentation Contest. Whether the students participate in person or through a live camera projection, the teacher must be able to see ALL of the participants engaged in relevant class time behavior throughout the duration of each class. Otherwise, the teacher reserves the right to mark the student absent. Students joining via TEAMS must leave their cameras on.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class <input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					

			Theme	Goals
2nd Semester	3rd Quarter	1st	Unit 5: Research and Analyze Your Audience Designing an audience-centered presentation (Part One) Critique your classmate's conference proposal (From your summer homework: The research abstract and summary) Homework: 1) Rewrite your abstract and summary based on comments from your peers and your teacher. 2) Read/review "Unit 5: Research and Analyze Your Audience."	Practice exercises that may help you reach your audience effectively. Begin planning a mock conference presentation.
		2nd	Unit 5: Research and Analyze Your Audience Designing an audience-centered presentation (Part Two) Homework: 1) Write a presentation outline. 2) Read "Unit 6: Building Your Presentation."	Practice exercises that may help you reach your audience effectively. Learn tips for writing a research presentation outline and organizing presentation content.
		3rd	Unit 6: Building Your Presentation Structuring a research presentation (Part One) Critique a classmate's outline. Homework: 1) Write a first draft of your presentation. 2) Review "Unit 6: Building Your Presentation"	Organize the structure of your research presentation in a logical and systematic matter. Work together with peers to improve your presentation focus.
		4th	Unit 6: Building Your Presentation Structuring a research presentation (Part Two) Critique a classmate's first draft. Homework: Revise and rehearse your presentation.	Organize the structure of your research presentation in a logical and systematic matter. Work together with peers to improve your presentation content.
		5th	Presentation workshop Peer critiques Homework: Rehearse your presentation and visualize/dream of having a perfect performance.	Work in groups to help each other rehearse and polish the forthcoming "Initial Presentations." Complete peer evaluation forms.
		6th	Initial Presentations (Part One) Homework: Write your self-reflection report on how you may have done a better Initial Presentation.	Present your research in English with confidence and enthusiasm. We will do the first 10 of 20 presentations in this class.
		7th	Initial Presentations (Part Two) Homework: 1) Write your self-reflection report on how you may have done a better Initial Presentation. 2) Read "Unit 8: Seeing Is Believing."	Present your research in English with confidence and enthusiasm. We will do the second 10 of 20 presentations in this class.
		8th	Unit 8: Seeing Is Believing Creating and using visual aids effectively (Part One) Homework: 1) Rewrite your presentation transcript based on self-reflection, peer critiques, and teacher feedback. 2) Review "Unit 8: Seeing Is Believing."	Create and practice using visual aids effectively. Work together with peers to improve your presentation content and visual aids.
	4th Quarter	9th	Unit 8: Seeing Is Believing Creating and using visual aids effectively (Part Two) Final Presentation rehearsals (In class and/or as homework) Homework: Read "Unit 9: Setting the Stage"	Create and practice using visual aids effectively. Work together with peers to improve your presentation content and visual aids. Prepare for your final presentation.
		10th	Unit 9: Setting the Stage Logistical considerations for setting up a presentation (Part One) Final Presentation rehearsals (In class and/or as homework) Homework: Review "Unit 9: Setting the Stage."	Consider ways to use the surroundings of your presentation stage to your advantage. Prepare for your final presentation.
		11th	Unit 9: Setting the Stage Logistical considerations for setting up a presentation (Part Two) Final Presentation rehearsals (In class and/or as homework) Homework: Read "Unit 10: Q&A, Difficult People, and Deadly Disasters."	Consider ways to use the surroundings of your presentation stage to your advantage. Prepare for your final presentation.
		12th	Unit 10: Q&A, Difficult People, and Deadly Disasters Handling question and answers calmly and effectively (Part One) Final Presentation rehearsals (In class and/or as homework) Homework: Review "Unit 10: Q&A, Difficult People, and Deadly Disasters."	Learn how to handle difficult audience members and difficult questions. Prepare for your final presentation.
		13th	Unit 10: Q&A, Difficult People, and Deadly Disasters Handling question and answers calmly and effectively (Part Two) Final Presentation rehearsals (In class and/or as homework)	Learn how to handle difficult audience members and difficult questions. Prepare for your final presentation.
		14th	Presentation workshop Peer critiques Homework: Rehearse your presentation and visualize/dream of having a perfect performance.	Work in groups to help each other rehearse and polish the forthcoming "Final Presentations." Complete peer evaluation forms.

		15th	Final presentation in the context of a mock research conference within the class	Presentation grades will be determined by how well the presentation reflects the acquisition and implementation of presentation techniques learned from this course.	
		16th	No Test		
Evaluation Method and Weight (%)					
		Short Assignments/Reflective Writing	Initial Presentation	Final Presentation	Total
Subtotal		30	30	40	100
Professional Presentation Skills		30	30	40	100

Akashi College		Year	2023	Course Title	Chinese-1
Course Information					
Course Code	5408		Course Category	General / Elective	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials	虞萍：「ペアで学ぼう！中国語」朝日出版社。				
Instructor	ARIKAWA Kei				
Course Objectives					
①中国語の発音をマスターし、基礎的な語彙と文法の規則を応用できるようにし、会話力と読解力を養うように目指します。 ②挨拶や日常会話など、身の回りの事を実用的な中国語で表現でき、簡単な中国語でコミュニケーションを取れることを目指します。 ③中国人の考え方や生活習慣、中国文化に対する理解を深めていきます。					
Rubric					
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安
評価項目1	中国語の発音をマスターし、基礎的な語彙と文法の規則を応用できるようにし、会話力と読解力を十分に養っている。		中国語の発音をマスターし、基礎的な語彙と文法の規則を応用できるようにし、会話力と読解力を養っている。		中国語の発音をマスターし、基礎的な語彙と文法の規則を応用できるようにし、会話力と読解力を養っていない。
評価項目2	挨拶や日常会話など、身の回りの事を実用的な中国語で表現でき、簡単な中国語で十分にコミュニケーションを取ることができる。		挨拶や日常会話など、身の回りの事を実用的な中国語で表現でき、簡単な中国語でコミュニケーションを取ることができる。		挨拶や日常会話など、身の回りの事を実用的な中国語で表現でき、簡単な中国語でコミュニケーションを取ることができない。
評価項目3	中国人の考え方や生活習慣、中国文化に対する理解を十分深めている。		中国人の考え方や生活習慣、中国文化に対する理解を深めている。		中国人の考え方や生活習慣、中国文化に対する理解を深めていない。
Assigned Department Objectives					
Teaching Method					
Outline	外国語の勉強に肝心なのは発音とされています。中国語も例外ではありません。この授業では、発音を丁寧に学び、焦らずにしっかりとレベルアップを図りながら、「聞く」「話す」「読む」「書く」の能力をバランスよく身につけることを目指します。また、中国の社会や文化などにも触れながら、よりスムーズにコミュニケーションを取れるように異文化への理解も深めていきます。				
Style	①事前に予習を行い、学習ポイント把握したうえで授業に臨むこと。 ②授業に積極的に参加すること。 ③発声練習、会話練習にしっかりと取り組むこと。 ④予習時に生じた疑問や、授業中に理解できない事項は質問をすること。 連絡員：井上英俊				
Notice	目標達成のため、次の自己学習が必要である。 ①学習ポイントを把握し授業の理解度を高めるため、予習を行うこと。 ②授業で学習した後に必ず復習を行うこと。 ③テキストの添付CDや音声ストリーミングURLを活用し、中国語の発音を自主的練習すること。 合格の対象としない欠席条件(割合) 1/4以上の欠課				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	発音 1、2、3	声調、単母音、子音を学ぶ。	
		2nd	発音 4、5	複合母音、鼻音を伴う母音を学ぶ。	
		3rd	第 1 課 あなたは日本人ですか？	人称代詞、名前の聞き方と答え方、動詞述語文を学ぶ。	
		4th	第 1 課 文法のまとめ	練習 I、II を学ぶ。	
		5th	第 2 課 あなたは何を学びますか？	「的」の使い方、副詞「也」、疑問詞「什么」を学ぶ。	
		6th	第 2 課 文法のまとめ	練習 I、II を学ぶ。	
		7th	第 3 課 あなたは最近どうですか？	形容詞述語文、「」＋動詞、副詞「都」を学ぶ。	
		8th	復習と中間テスト	既習内容を復習する。	
	2nd Quarter	9th	第 3 課 文法のまとめ	練習 I、II を学ぶ。	
		10th	第 4 課 これはどなたの辞書ですか？	指示代詞、量詞、反復疑問文を学ぶ。	
		11th	第 4 課 文法のまとめ	練習 I、II を学ぶ。	
		12th	第 5 課 彼はいつ北京に来ますか？	時間の言い方、「……吧」の使い方、「去/来/回/到」＋場所＋動詞を学ぶ。	
		13th	第 5 課 文法のまとめ	練習 I、II を学ぶ。	
		14th	第 6 課 図書館はどこにありますか？	「有」と「在」、主述述語文、「几」と「多少」を学ぶ。	
		15th	前期総まとめ	復習と質問応答を実施する。	
		16th	期末試験		
Evaluation Method and Weight (%)					
	定期試験		小テスト	平常点	Total

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

Akashi College		Year	2023		Course Title	Chinese-2
Course Information						
Course Code	5409			Course Category	General / Elective	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	Second Semester			Classes per Week	2	
Textbook and/or Teaching Materials	虞萍：「ペアで学ぼう！中国語」朝日出版社.					
Instructor	ARIKAWA Kei					
Course Objectives						
(1) The goal is to master the pronunciation of Chinese language, to learn to apply basic vocabulary and grammar rules, and to develop conversational skills and reading comprehension.						
(2) The goal is to be able to express things around them, such as greetings and daily conversations, in practical Chinese, and to communicate in simple Chinese.						
(3) The goals is to gain a deeper understanding of the Chinese way of thinking, lifestyle, and culture.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
Achievement 1	Mastered the pronunciation of Chinese, learned to use basic vocabulary and grammar rules, and fully developed conversational skills and reading comprehension.		Mastered the pronunciation of Chinese, learned to use basic vocabulary and grammar rules, and developed conversational skills and reading comprehension.		Have not mastered the pronunciation of Chinese, learned to use basic vocabulary and grammar rules, and developed conversational skills and reading comprehension.	
Achievement 2	Can express things around them, such as greetings and daily conversations, in practical Chinese, and communicate well in simple Chinese.		Can express things around them, such as greetings and daily conversations, in practical Chinese, and communicate in simple Chinese.		Cannot express things around them, such as greetings and daily conversations, in practical Chinese, and communicate well in simple Chinese.	
Achievement 3	Fully gained a deeper understanding of the Chinese way of thinking, lifestyle, and culture.		Gained a deeper understanding of the Chinese way of thinking, lifestyle, and culture.		Have not gained a deeper understanding of the Chinese way of thinking, lifestyle, and culture.	
Assigned Department Objectives						
Teaching Method						
Outline	It's said that pronunciation is the key to studying foreign languages. Chinese is no exception. In this class, we aim to achieve a balanced level of listening, speaking, reading, and writing skills while learning pronunciation carefully and taking time improving it. We will also deepen our understanding of the different cultures so that we can communicate more smoothly, while touching on the Chinese society and culture.					
Style	"(1) Pre-study and learn the learning points before attending classes. (2) Actively participate in class. (3) Work hard on vocal and conversational practice. (4) Ask questions that arise during the pre-study or that you do not understand during classes. Liaison: Hidetoshi Inoue"					
Notice	"To achieve these goals, students are required to do the following self-study: (1) Pre-study to know the learning points and improve understanding of classes. (2) Be sure to review after learning in class. (3) Self-practice Chinese pronunciation using the CDs that come with the textbook and audio streaming URLs. Students who miss 1/4 or more of classes will not be eligible for a passing grade."					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
2nd Semester r	3rd Quarter	1st	Review of the content learned in the first semester	Review the content learned in the first semester		
		2nd	Lesson 7: 你喝茶是喝茶？	Learn A 是 B, 想 + verb, 要 + verb, and comparison expressions.		
		3rd	Lesson 7: Grammar summary	Learn Practice I and II.		
		4th	Lesson 8: 你喜哪件？	Learn the interrogative 哪, reduplication of verbs, and expressions with a topicalized object at the beginning of a sentence.		
		5th	Lesson 8: Grammar summary	Learn Practice I and II.		
		6th	Lesson 9: 你每天睡几个小？	Learn period (amount of time), the state complement 得, and 怎么.		
		7th	Lesson 9: Grammar summary	Learn Practice I and II.		
		8th	Review and midterm test	Review the content learned.		
	4th Quarter	9th	Lesson 10: 你才去哪儿了？	Learn how to use verb + 了 that express past experiences, and 又, 再, and .		
		10th	Lesson 10: Grammar summary	Learn Practice I and II.		
		11th	Lesson 11: 你在干什么呢？	Learn about the aspects of progressive and continuous, 一会儿, 有点儿, 一点儿, and 打算 + verb.		

		12th	Lesson 11: Grammar summary	Learn Practice I and II.
		13th	Lesson 12: 你会开？	Learn the adverbs 会, 能, and 可以, the double object, and 别/不要 that express prohibitions
		14th	Lesson 12: Grammar summary	Learn Practice I and II.
		15th	Summary of the second semester	Review and answer to questions.
		16th	Final exam	

Evaluation Method and Weight (%)					
	Examination	Tasks	Small tests	Others	Total
Subtotal	60	20	20	0	100
Basic Proficiency	60	20	20	0	100
Specialized Proficiency	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0

Akashi College		Year	2023		Course Title	German-1
Course Information						
Course Code		5410		Course Category	General / Elective	
Class Format		Lecture		Credits	School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term		First Semester		Classes per Week	2	
Textbook and/or Teaching Materials		DVDわかるぞドイツ語！見えるぞドイツ語！ 春日正男、松澤淳（朝日出版社）				
Instructor		YOKOTA Kazuya				
Course Objectives						
●The goal is to clearly understand German sentence structure and rules, and to be able to read intermediate German with the help of a dictionary. ●The goal is to be able to express things around them in simple German, using what they learned in interactive practice. ●The goal is to have a deeper understanding of the German way of thinking and lifestyle by reading German reading materials on social conditions.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Achievement 1		Clearly understand German sentence structure and rules, and can read intermediate German with the help of a dictionary.		Clearly understand German sentence structure and rules, and can read intermediate German to some extent with the help of a dictionary.		Do not clearly understand German sentence structure and rules, and cannot read intermediate German even with the help of a dictionary.
Achievement 2		Can express things around them in German, using what they learned in interactive practice.		Can express things around them in simple German, using what they learned		Cannot express things around them in simple German.
Achievement 3		Can deepen their understanding of the German way of thinking and lifestyle through reading German reading materials on social conditions.		Can deepen their understanding of the German way of thinking and lifestyle to a certain extent through reading German reading materials on social conditions.		Cannot deepen their understanding of the German way of thinking and lifestyle through reading German reading materials on social conditions.
Assigned Department Objectives						
Teaching Method						
Outline		The main purpose of this class is to learn the basic grammar of German and to balance students' overall German reading, writing, listening, and speaking abilities. When learning grammar, we will incorporate many interactive practice that use the grammar topics in each section will be incorporated so students can learn German that is practical and alive. In addition, students will improve their German reading comprehension and increase knowledge of Germany through reading materials on German social conditions.				
Style		In addition to classes, a lot of interactive practice will be incorporated, and students will also improve reading comprehension through readings. Liaison: Akimoto Hiromi				
Notice		(1) During the first class, a few dictionaries will be introduced. Students should choose a dictionary from those that they think will be easy to use and bring it to the class every time. (2) Properly do the assignments given. Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
1st Semester	1st Quarter	1st	Introduction to German and Germany		Understand the alphabet and pronunciation rules.	
		2nd	Introduction to German and Germany		Understand pronunciation rules and greeting expressions.	
		3rd	Lektion 1		Grammar: Understand present tense personal conjugation of verbs.	
		4th	Lektion 1		Grammar: Understand German word order.	
		5th	Lektion 1		Reading: Understand Japan inside Germany.	
		6th	Lektion 1		Grammar: Understand sein and haben.	
		7th	Lektion 2		Grammar: Understand the gender and number of nouns.	
		8th	Lektion 2		Reading: Understand German beer and wine.	
	2nd Quarter	9th	Lektion 2		Grammar: Understand case inflections of articles and nouns.	
		10th	Lektion 3		Reading: Understand Berlin	
		11th	Lektion 3		Grammar: Understand irregular verbs and the imperative mood.	
		12th	Lektion 4		Grammar: Understand Europe and the EU.	
		13th	Lektion 4		Grammar: Understand definite and indefinite articles.	

		14th	Lektion 5	Reading: Understand the part-time jobs of German youth.			
		15th	Review	Review the content learned in the first semester.			
		16th	Final exam	Understand the content learned.			
Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Quizes	Total
Subtotal	50	0	0	30	0	20	100
Basic Proficiency	50	0	0	30	0	20	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023	Course Title	German-2
Course Information					
Course Code	5411		Course Category	General / Elective	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials	DVDわかるぞドイツ語！見えるぞドイツ語！ 春日正男、松澤淳（朝日出版社）				
Instructor	YOKOTA Kazuya				
Course Objectives					
•The goal is to clearly understand German sentence structure and rules, and to be able to read intermediate German with the help of a dictionary. •The goal is to be able to express things around them in simple German, using what they learned in interactive practice. •The goal is to have a deeper understanding of the German way of thinking and lifestyle by reading German reading materials on social conditions.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Clearly understand German sentence structure and rules, and can read intermediate German with the help of a dictionary.		Clearly understand German sentence structure and rules, and can read intermediate German to some extent with the help of a dictionary.		Do not clearly understand German sentence structure and rules, and cannot read intermediate German even with the help of a dictionary.
Achievement 2	Can express things around them in German, using what they learned in interactive practice.		Can express things around them in simple German, using what they learned		Cannot express things around them in simple German.
Achievement 3	Can deepen their understanding of the German way of thinking and lifestyle through reading German reading materials on social conditions.		Can deepen their understanding of the German way of thinking and lifestyle to a certain extent through reading German reading materials on social conditions.		Cannot deepen their understanding of the German way of thinking and lifestyle through reading German reading materials on social conditions.
Assigned Department Objectives					
Teaching Method					
Outline	The main purpose of this class is to learn the basic grammar of German and to balance students' overall German reading, writing, listening, and speaking abilities. When learning grammar, we will incorporate many interactive practice that use the grammar topics in each section will be incorporated so students can learn German that is practical and alive. In addition, students will improve their German reading comprehension and increase knowledge of Germany through reading materials on German social conditions.				
Style	In addition to classes, a lot of interactive practice will be incorporated, and students will also improve reading comprehension through readings. Liaison: Akimoto Hiromi				
Notice	(1) During the first class, a few dictionaries will be introduced. Students should choose a dictionary from those that they think will be easy to use and bring it to the class every time. (2) Properly do the assignments given. Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Lektion 5	Grammar: Understand personal pronouns.	
		2nd	Lektion 5	Grammar: Understand prepositions.	
		3rd	Lektion 6	Reading: Understand German bakeries.	
		4th	Lektion 6	Grammar: Understand modal verbs and the future tense.	
		5th	Lektion 6	Grammar: Understand subordinating conjunctions.	
		6th	Lektion 7	Reading: Understand the travel situation in Germany.	
		7th	Lektion 7	Grammar: Understand separable verbs.	
		8th	Lektion 7	Grammar: Understand reflexive verbs.	
	4th Quarter	9th	Lektion 8	Reading: Understand Munich.	
		10th	Lektion 8	Grammar: Understand case inflections of adjectives.	
		11th	Lektion 9	Reading: Understand Oktoberfest in Munich.	
		12th	Lektion 9	Grammar: Understand the three basic forms and past tense of verbs.	
		13th	Lektion 10	Reading: Understand the football situation in Germany.	
		14th	Lektion 10	Grammar: Understand the perfect tense.	

		15th	Review	Review the content learned in the second semester.			
		16th	Final exam	Understand the content learned.			
Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Quizes	Total
Subtotal	50	0	0	30	0	20	100
Basic Proficiency	50	0	0	30	0	20	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023	Course Title	French-1
Course Information					
Course Code	5412		Course Category	General / Elective	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials	釣馨・武内英公子『私だけのフランス語ノート』朝日出版社				
Instructor	FUJIMOTO Tomonari				
Course Objectives					
In the recent trend of globalization, the multilingualism and multiculturalism perspectives have become increasingly important. Internationalization does not make the world uniform, but it requires diverse cultures to co-exist. From the perspective that the best way to learn different cultures is to learn languages, we will become familiar with taking action for a multicultural and multilingual coexistence society through French learning.					
Rubric					
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安
評価項目1	Learn the basic French proficiency by learning the French language structure.		Learn the basic French proficiency by learning the French language structure.		Do not learn the basic French proficiency by learning the French language structure.
評価項目2	Learn the basic French proficiency by learning French vocabulary.		Learn the basic French proficiency by learning French vocabulary.		Do not learn the basic French proficiency by learning French vocabulary.
評価項目3	Can take action for a multicultural and multilingual coexistence society through learning French.		Can take action for a multicultural and multilingual coexistence society through learning French.		Cannot take action for a multicultural and multilingual coexistence society through learning French.
Assigned Department Objectives					
Teaching Method					
Outline	In this course, students will learn the basics of French communication. The French language structure, or so-called grammar, have many rules, and it seems complicated at first glance, such as the relationship between spelling and pronunciation, the rules on the gender of nouns, and the verb conjugation. However, if you become master them to some extent, your horizon will suddenly broaden, and you can communicate fairly well with a few vocabularies. While learning the basic expressions of everyday conversation, such as how to introduce yourself and seasonal greetings, the class aims to help students achieve a balanced mastering of the four skills: listening, speaking, reading, and writing.				
Style	After explanation of the grammar and vocabulary, students will do practice questions to acquire proficiency. Liaison: Chiho Kitagawa				
Notice	In order to learn foreign languages, it's important to make the most of the innate communication skills and imagination of the learners, so active participation in classes is required. Also, students are encouraged to spend more time for review rather than for pre-study. Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Guidance: How classes will be conducted / General explanations about France and the French language	Understand the overview of classes. Understand the general characteristics of France and the French language.	
		2nd	Lesson 0: L'alphabet and pronunciation / Greeting	Pronounce French words and greet.	
		3rd	Lesson 0: L'alphabet and pronunciation / Greeting	Use numbers from 1 to 10.	
		4th	Lesson 1: Let's introduce yourself!	Make simple verb conjugation. Say names of European countries and cities in French.	
		5th	Lesson 1: Let's introduce yourself!	Introduce themselves in French.	
		6th	Lesson 2: Let's talk about nationalities and languages!	Understand the basic rules of the gender of nouns.	
		7th	Lesson 2: Let's talk about nationalities and languages!	Listen to names, nationalities, towns, occupations, and words of others.	
		8th	Review	Understanding the weak points on the content learned so far.	
	2nd Quarter	9th	Lesson 3: Let's talk about things around you!	Increase their vocabulary and talk about things around them.	
		10th	Lesson 3: Let's talk about things around you!	Use numbers up to 20. Say regions of France and its specialties.	
		11th	Lesson 4: Let's talk about your family! (1)	Use numbers up to 69. Use the verbs avoir and faire.	
		12th	Lesson 4: Let's talk about your family! (1)	Talk about the ages and occupations of their and other people's family members.	
		13th	Lesson 5: Let's talk about your family! (2)	Talk about the characteristics and personalities of their family members.	
		14th	Lesson 5: Let's talk about your family! (2)	Explain clothes.	

		15th	Lesson 6: Let's talk about things you like!		Talk about things they like.		
		16th	Final exam		Speak and write based on the content learned since week 9.		
Evaluation Method and Weight (%)							
	試験	発表	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	50	0	0	30	0	20	100
基礎的能力	50	0	0	30	0	20	100
専門的能力	0	0	0	0	0	0	0
分野横断的能力	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	French-2
Course Information						
Course Code		5413		Course Category	General / Elective	
Class Format		Lecture		Credits	School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term		Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials		釣馨・武内英公子『私だけのフランス語ノート』朝日出版社				
Instructor		FUJIMOTO Tomonari				
Course Objectives						
This course aims to apply and expand on the "French -1" course offered in the previous semester. The specific objectives are: 1. to understand and pronounce simple French expressions; 2. to be able to conjugate regular and irregular verbs in the present tense (i.e., to change them according to their person); 3. to understand how expressions (articles, adjectives, etc.) change according to the number and gender of nouns; and 4. to be able to think about the meaning of simple sentences and to form simple sentences.						
Rubric						
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安
評価項目1		Learn the basic French proficiency by learning the French language structure.		Learn the basic French proficiency by learning the French language structure.		Do not learn the basic French proficiency by learning the French language structure.
評価項目2		Learn the basic French proficiency by learning French vocabulary.		Learn the basic French proficiency by learning French vocabulary.		Do not learn the basic French proficiency by learning French vocabulary.
評価項目3		Can take action for a multicultural and multilingual coexistence society through learning French.		Can take action for a multicultural and multilingual coexistence society through learning French.		Cannot take action for a multicultural and multilingual coexistence society through learning French.
Assigned Department Objectives						
Teaching Method						
Outline		While reviewing the contents of the first semester, students will learn grammatical items that are a little more advanced than those of the first semester. There is indeed a lot to memorize in elementary grammar, but since the contents of the second semester are based on the contents of the first semester, students should be able to gradually acquire proficiency by focusing on review. We expect the active participation of students.				
Style		After explanation of the grammar and vocabulary, students will do practice questions to acquire proficiency. Liaison: Chiho Kitagawa				
Notice		In order to learn foreign languages, it's important to make the most of the innate communication skills and imagination of the learners, so active participation in classes is required. Also, students are encouraged to spend more time for review rather than for pre-study. Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
2nd Semester r	3rd Quarter	1st	Review of the topics covered in the first semester, and warm up for the second semester	Can speak and write in French based on the content learned in the first semester.		
		2nd	Lesson 7: Let's talk about food!	Can talk about breakfast. Can use the verb prendre. Can explain French cuisine.		
		3rd	Lesson 8: Let's go on a trip!	Can talk about destinations. Can talk about transport options. Can use sentences in the near future tense.		
		4th	Lesson 9: Let's talk about the weather!	Can speak using weather expressions.		
		5th	Lesson 9: Let's say the time and duration!	Can say the time and duration.		
		6th	Lesson 10: Let's compare.	Can speak using comparison expressions.		
		7th	Lesson 11: Let's shop!	Can use numbers up to 100. Can tell the total amount of shopping.		
		8th	Review	Understanding the weak points on the content learned so far.		
	4th Quarter	9th	Lesson 11: Let's ask the way!	Can use command forms. Can give directions.		
		10th	Lesson 12: Let's explain what you do on a day!	Can create sentences using pronominal verbs in the present tense.		
		11th	Lesson 12: Let's explain what you do on a day!	Can talk about what they do on a normal day.		
		12th	Lesson 13: Let's talk about customs!	Can talk about customs of the French people. Can use the verb pouvoir. Can use personal pronouns.		
		13th	Lesson 14: Let's talk about what you did during your trip! (1)	Understand how to form the perfect tense using avoir, and can use it.		
		14th	Lesson 15: Let's talk about what you did during your trip! (2)	Understand how to form the perfect tense and imperfect tense using être, and can use them		
		15th	Summary of Lessons 14 and 15	Can talk about what they did yesterday based on what they do on a normal day learned in Lesson 12.		

		16th	Final exam				
Evaluation Method and Weight (%)							
	試験	発表	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	50	0	0	30	0	20	100
基礎的能力	50	0	0	30	0	20	100
専門的能力	0	0	0	0	0	0	0
分野横断的能力	0	0	0	0	0	0	0

Akashi College		Year	2023	Course Title	Mathematical Concepts
Course Information					
Course Code	5414			Course Category	General / Elective
Class Format	Lecture			Credits	School Credit: 1
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th
Term	Second Semester			Classes per Week	2
Textbook and/or Teaching Materials	碓氷久ほか 大学編入のための数学問題集 大日本図書				
Instructor	MATSUMIYA Atusi				
Course Objectives					
(1) 確率の諸概念を理解し、確実な計算を身に着け、いろいろな問題をこなせるようになること。 (2) 線型代数の諸概念を理解し、行列やベクトルに関する確実な計算を身につけ、いろいろな問題をこなせるようになること。 (3) 微積分の諸概念を理解し、確実な計算を身につけ、いろいろな問題をこなせるようになること。 (4) 抽象的枠組を具体的問題に適用する能力を獲得し、適切な試験答案の作りかたを身につけること。					
以上いずれについても、各回の小試験と期末試験により達成度をはかる。					
Rubric					
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安
評価項目1	確率の諸概念を十分理解し、確実な計算を身につけ、いろいろな問題を十分解くことが出来る。		確率の諸概念を理解し、確実な計算を身につけいろいろな問題を解くことが出来る。		確率の諸概念を理解できず、確実な計算を身につけていないのでいろいろな問題を解くことが出来ない。
評価項目2	線型代数の諸概念を十分理解し、行列やベクトルに関する確実な計算を身につけいろいろな問題を十分解くことが出来る。		線型代数の諸概念を理解し、行列やベクトルに関する確実な計算を身につけいろいろな問題を解くことが出来る。		線型代数の諸概念を理解できず、行列やベクトルに関する確実な計算を身につけいろいろな問題を解くことが出来ない。
評価項目3	微積分の諸概念を十分理解し、確実な計算を身につけいろいろな問題を十分解くことが出来る。		微積分の諸概念を理解し、確実な計算を身につけいろいろな問題を解くことが出来る。		微積分の諸概念を理解できず、確実な計算を身につけていないのでいろいろな問題を解くことが出来ない。
評価項目4	抽象的枠組を具体的問題に適用する能力を十分獲得している。		抽象的枠組を具体的問題に適用する能力を獲得している。		抽象的枠組を具体的問題に適用する能力を獲得出来ない。
Assigned Department Objectives					
Teaching Method					
Outline	高専で学習した数学に初歩の確率論の学習を含め、これらに関して復習と問題演習を行う。多くの問題を解くことによって数学的能力を高め、さらに高度な数学に親しめる能力を身につけることを目標とする。付随的に、大学編入試験に臨む学生の受験対策の機会にもなるようにしたい。				
Style	課題提出をもとに、講義や質問を行い確認小試験を行う。				
Notice	テキストは大学編入試験の問題集で、豊富な問題量を含んでいる。自分が必要となる範囲を自分自身で見定めて調べるように心がけ、講義の進行とは別に各自でどんどん学習を進めていくべきである。受け身の受講姿勢では編入試験対策として有効にはならないので注意。 合格の対象としない欠席条件(割合) 1/3以上の欠課				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class <input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	基礎数学の復習 1 1年次に学習した数学Aの内容について、復習と問題演習をおこなう。	基礎数学の内容を理解している。	
		2nd	基礎数学の復習 2 1年次に学習した数学Bの内容について、復習と問題演習をおこなう。	基礎数学の内容を理解している。	
		3rd	一変数関数の微分 一変数関数の微分について、復習と問題演習をおこなう。	1変数関数の微分について理解している。	
		4th	一変数関数の積分 一変数関数の積分について、復習と問題演習をおこなう。	1変数関数の積分について理解している。	
		5th	関数の展開 数列の極限、級数とべき級数、テイラーの定理とテイラー展開について、復習と問題演習をおこなう。	関数の展開について理解している。	
		6th	多変数関数の微積分 (1) 主として二変数関数の、偏微分、極値の判定について復習し、問題演習をおこなう。	多変数関数の微分について理解している。	
		7th	多変数関数の微積分 (2) 主として二変数関数の重積分について、計算法と利用法を復習し、問題演習をおこなう。	多変数関数の積分について理解している。	
		8th	課題 課題に取り組み補強すべき分野を確認する。	適切な試験答案の作り方を身につける。	

4th Quarter	9th	微分方程式 一階、二階の微分方程式の基本的な型についての解法を復習し、問題演習をおこなう。また基本的な型からやや外れるような問題や、連立微分方程式などを取りあげ、問題演習をおこなう。	簡単な1階線形微分方程式を解くことができる。定数係数2階斉次線形微分方程式を解くことができる。
	10th	ベクトル 空間内の図形、線形独立・線形従属などの復習と問題演習をおこなう。	ベクトルに関する問題を解くことができる。
	11th	行列と行列式 行列と行列式の計算、階数、連立方程式、逆行列、連立一次方程式の解法などの復習と問題演習をおこなう。	行列に関する問題を解くことができる。
	12th	線形変換 線形変換とその表現行列、行列の固有値と固有ベクトル、行列の対角化について、復習と問題演習をおこなう。	線形変換、固有値と固有ベクトルに関する問題を解くことができる。
	13th	ベクトル空間 ベクトル空間、部分空間、基底・次元、線形写像について、やや抽象的な問題の復習と演習をおこなう。	ベクトル空間、部分空間、基底・次元、線形写像に関する問題を解くことができる。
	14th	確率 古典的確率概念と具体的問題 素朴な確率概念と、条件付き確率や期待値などの概念を学び、具体的な問題の例を取りあげる。	独立試行の確率、余事象の確率、確率の加法定理、排反事象の確率を理解し、簡単な場合について、確率を求めることができる。条件付き確率、確率の乗法定理、独立事象の確率を理解し、簡単な場合について確率を求めることができる。
	15th	さまざまな複合的問題 複数の分野にまたがる知識を必要とする問題をいくつかとりあげ、問題演習をおこなう。	適切な試験答案の作りかたを身につけている。
	16th	期末試験	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	Overseas Training II
Course Information					
Course Code	5415		Course Category	General / Elective	
Class Format	Practical training		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Year-round		Classes per Week	1	
Textbook and/or Teaching Materials					
Instructor	All faculty of the department				
Course Objectives					
(1) Can make efforts to increase knowledge and skills through participating in training overseas.					
(2) Can develop a broad perspective by participating in training in different cultures.					
(3) Can communicate with people involved in the local area using English, etc.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can fully make efforts to increase knowledge and skills through participating in training overseas.		Can make efforts to increase knowledge and skills through participating in training overseas.		Cannot make efforts to increase knowledge and skills through participating in training overseas.
Achievement 2	Can fully develop a broad perspective successfully by participating in training in different cultures.		Can develop a broad perspective by participating in training in different cultures.		Cannot develop a broad perspective by participating in training in different cultures.
Achievement 3	Can fully communicate with people involved in the local area smoothly using English, etc.		Can communicate with people involved in the local area using English, etc.		Cannot communicate with people involved in the local area using English, etc.
Assigned Department Objectives					
Teaching Method					
Outline	The objectives of this course are to develop the ability to think things from various perspectives and to communicate through a variety of training experiences overseas. The training can be carried out during summer vacation, etc. The number of days for the training must be more than five days. This course's content will amount to over 45 hours in total. These hours include training overseas, preliminary guidance (manner lesson, preliminary research on the training destination), debrief session, and self-study time for preparing reports to be submitted to relevant institutions, etc.				
Style	Pre-orientation, on-site training, and debriefing				
Notice	Students are required to keep in close contact with their class teacher or supervisor. During the training, students are required to actively engage and communicate with the local people and act appropriately as a trainee, including their clothing and language. No conditions for missing classes that will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
				<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			
		8th			
	2nd Quarter	9th			
		10th			
		11th			
		12th			
		13th			
		14th			
		15th			
		16th	No final exam		
2nd Semester	3rd Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			

	4th Quarter	8th		
		9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th	No final exam	

Evaluation Method and Weight (%)			
	Report	Presentation	Total
Subtotal	50	50	100
Basic Proficiency	0	0	0
Specialized Proficiency	0	0	0
Cross Area Proficiency	50	50	100

Akashi College		Year	2023	Course Title	Japanese IV-1
Course Information					
Course Code	5416			Course Category	General / Compulsory
Class Format	Lecture			Credits	School Credit: 1
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th
Term	First Semester			Classes per Week	2
Textbook and/or Teaching Materials	担当者がプリントを配布する。＜参考教材＞鎌田美千子・仁科浩美著『アカデミック・ライティングのためのパラフレーズ演習』（スリーエーネットワーク）、浜田麻里ほか著『大学生と留学生のための論文ワークブック』（くろし出版)				
Instructor	KUBOTA Ikumi				
Course Objectives					
1. 適切で効果的なことばを使い、身近な話題をテーマにして論文が書ける。 2. クラスメートとのアイデア共有や意見交換をとおして、自分の日本語力や考え方を見直すことができる。					
Rubric					
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安
評価項目1	論理的な文章の組み立て方やことばのルールを理解し、また適切に使いこなし、論文が書ける。		文章の組み立て方やことばの使い方に不自然な点はあるが、理解はしており、ある程度論理的に文章が書ける。		論理的な文章の組み立て方やことばのルールがあまり理解できず、論理的な文章が書けない。
評価項目2	クラスメートとの言語活動に参加し、自分の日本語や考えを見直すだけでなく、相手にもコメントや助言をすることができる。		クラスメートとの言語活動に参加し、自分の日本語や考えを見直すことができる。		クラスメートとの言語活動にあまり参加できない。または、参加できるが、自分の日本語や考えを見直すことができない。
Assigned Department Objectives					
Teaching Method					
Outline	本授業では、アカデミック・ライティングに必要な言語表現を学び、学術的な文章が書けるようになるための日本語力を養う。				
Style	学術的な文章に触れるとともに、論文の構成を意識しながら実際に文章を書く練習を重ねる。また、さまざまなパラフレーズをとおして、アカデミック・ライティングに必要な言語表現が適切に使えるようになるための練習を行う。				
Notice	評価の対象としない欠席条件(割合) 1/4以上の欠課				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
				<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	オリエンテーション	授業の目標および内容を把握する。	
		2nd	イントロダクション 単語の言い換え（書き言葉）	論文を書くときに気をつけるべきことがわかる。自分が授業で扱いたいテーマについて考えることができる。	
		3rd	論文の構成 単語の言い換え（和語と漢語）	どのように論文を構成したらわかりやすい論文になるかがわかる。	
		4th	本論のまとめ方 単語の言い換え（名詞化）	本論のまとめ方がわかり、与えられたテーマについて実際に論文の構成を考え、書いてみるができる。	
		5th	文の種類 単語の言い換え（ジャンルによる使い分け）	事実、意見、行動を述べる文それぞれの特徴と、どの構成要素に使われる文であるかがわかる。そのうえで、短い論文が書ける。	
		6th	序論（背景説明）	論文の背景説明を行う方法がわかり、与えられたテーマについて実際に書いてみるができる。	
		7th	序論（問題提起と方向付け） 意味の言い換え（長い文／複数の文）	与えられた読み物から問題点が見つけれられる。また、その問題をどのように解決しようとするのかという計画が示せる。	
		8th	序論 意味の言い換え（上位概念）	身近なテーマについて論文の序論が書ける。	
	2nd Quarter	9th	本論（論拠提示） 意味の言い換え（簡潔な表現）	事実と意見の違いがわかり、両者を書き分けることができる。	
		10th	本論（論拠提示） 意味の言い換え（含意／解釈）	客観的な表現を使って事実が説明できる。	
		11th	本論（結論提示）	論拠を受けて論理的に導いた意見が書ける。	
		12th	本論（論の展開）	論文の例を読み、その中の論がどのように展開されているかがわかる。	
		13th	本論	あるテーマについて論文の本論が書ける。	
		14th	結び（まとめ、評価）	論文の全体のまとめの書き方がわかる。また、書きあがった論文に評価を加えることができる。	
		15th	結び（展望提示）	結論から考えられる将来に向けての展望について言及できる。	
		16th	まとめと振り返り	授業を通して新たに発見したこと、考えが変わったこと、さらには自分の日本語の能力と技能がどうなったかについて説明できる。	
Evaluation Method and Weight (%)					

	発表・成果物	課題提出	授業態度	Total
Subtotal	70	10	20	100
基礎的能力	20	10	0	30
専門的能力	20	0	0	20
分野横断的能力	30	0	20	50

Akashi College		Year	2023		Course Title	Japanese IV-2		
Course Information								
Course Code		5417		Course Category		General / Compulsory		
Class Format		Lecture		Credits		School Credit: 1		
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th		
Term		Second Semester		Classes per Week		2		
Textbook and/or Teaching Materials		プリントを配布する。						
Instructor		TANGE Atsuko						
Course Objectives								
1. 適切で効果的なことばを使い、身近な話題をテーマにして論文が書ける。 2. クラスメートとのアイデア共有や意見交換をとおして、自分の日本語力や考え方を見直すことができる。 3. 日本文化に対する理解を深め、自分の考えを述べることができる。								
Rubric								
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安		
評価項目1		論理的な文章の組み立て方やことばのルールを理解し、また適切に使いこなし、論文が書ける。		文章の組み立て方やことばの使い方に不自然な点はあるが、理解はしており、ある程度論理的に文章が書ける。		論理的な文章の組み立て方やことばのルールがあまり理解できず、論理的な文章が書けない。		
評価項目2		クラスメートとの言語活動に参加し、自分の日本語や考えを見直すだけでなく、相手にもコメントや助言をすることができる。		クラスメートとの言語活動に参加し、自分の日本語や考えを見直すことができる。		クラスメートとの言語活動にあまり参加できない。または、参加できるが、自分の日本語や考えを見直すことができない。		
評価項目3		日本文化に対する理解を深め、自分の考えを適切な表現を使って述べるができる。		日本文化に対する理解を深め、ある程度自分の考えを述べることができる。		日本文化に対する理解があまり深まらず、自分の考えを述べることができない。		
Assigned Department Objectives								
Teaching Method								
Outline		本授業では、アカデミック・ライティングにふさわしい文章が書けるようになることを目指す。また、日本の文学作品に触れることで、日本文化に対する理解を深めることも目的とする。						
Style		さまざまな文章を読むとともに、自分の意見を文章化したり、発表したりする。						
Notice		評価の対象としない欠席条件(割合) 1/4以上の欠課						
Characteristics of Class / Division in Learning								
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced		
Course Plan								
			Theme	Goals				
2nd Semester r	3rd Quarter	1st	オリエンテーション	授業の目標および内容を把握する。				
		2nd	小論文を書く（1）	小論文を書くときに気をつけるべきことがわかる。				
		3rd	小論文を書く（2）	どのように小論文を構成したら、わかりやすい小論文になるかがわかる。				
		4th	小論文を書く（3）	適切な表現を使って小論文を書くことができる。				
		5th	論文を読む（1）	論理的展開と論証を理解し、説明することができる。				
		6th	論文を読む（2）	論理的展開と論証を理解し、説明することができる。				
		7th	論文を読む（3）	論文の内容に対して批判的意見をあげることができる。				
		8th	日本の小説を読む（1）	表現・構成に注意して小説の展開を理解することができる。				
	4th Quarter	9th	日本の小説を読む（2）	表現・構成に注意して小説の展開を理解することができる。				
		10th	日本の小説を読む（3）	内容を理解した上で、自分の意見を述べることができる。				
		11th	関西を舞台にした文学作品を読む（1）	表現・構成に注意して理解することができる。				
		12th	関西を舞台にした文学作品を読む（2）	表現・構成に注意して理解することができる。				
		13th	関西を舞台にした文学作品を読む（3）	内容を理解した上で、自分の意見を述べることができる。				
		14th	百人一首に親しむ（1）	百人一首について説明できる。				
		15th	百人一首に親しむ（2）	百人一首の歌について、自分の意見を述べることができる。				
		16th	まとめと振り返り	授業を通して新たに発見したこと、考えが変わったこと、さらには自分の日本語の能力と技能がどうなったかについて説明できる。				
Evaluation Method and Weight (%)								
	発表・成果物		課題提出		授業態度		Total	
Subtotal		70		10		20		100
基礎的能力		20		10		0		30
専門的能力		20		0		0		20

分野横断的能力	30	0	20	50
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Akashi College		Year	2023	Course Title	C o + w o r k III A
Course Information					
Course Code	5418		Course Category	Specialized / Compulsory	
Class Format	Seminar		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials	No required textbook and the required material will change according to the contents of the activity of each team.				
Instructor	All faculty				
Course Objectives					
1) Self-reliance: To acquire individuality and self-management ability 2) Co-operation skills: To gain the ability to work in teams and respect the teammates. 3) Creative Skills: To acquire the ability to gather and organize information, discover and propose solutions to problems.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
1 Self-reliance	Schedule management, reporting, contact, consultation, planning goals with the teammates		Individually able to schedule management, reporting, contact, consultation, planning goals.		Not able to schedule management, reporting, contact, consultation, and planning goals
2 Co-operation skills	Open to different opinions, able to express the student personal opinion, and ability to lead the team into a consensus.		Open to different opinions, able to express the student personal opinion, and ability to play the attributed role in the team.		Not open to different opinions, not able to express the student personal opinion, and can't to play the attributed role in the team.
3 Creative Skills	The student can voluntarily gather information, organize and summarize this information, form ideas and explain those ideas to others.		The student can voluntarily gather information, organize and summarize this information, and explain those ideas to others.		The student can't voluntarily gather information, can't organize and summarize this information, and can't explain those ideas to others.
Assigned Department Objectives					
Teaching Method					
Outline	This course aims to develop the students' self-reliance, co-operation and creative skills in a manner that the student can contribute to a team in a variety of environments (working with students from other departments, different age, and people from outside the school). Each group is to work with the instructor in charge and challenge themselves in creating something or perform activities that will bring happiness to someone other than the team members. Each team has to elaborate a plan and do its activities. The students will revise their plan after its presentation at a briefing session and retrospective evaluation.				
Style	2nd,3rd, and 4th academic year students from all four departments are randomly selected to compose a group with multiple students. After each student introduces themselves to the team, they will perform ice breaks and other activities that will help to build relationships within the group. Later the team will discuss and discover a problem to work with, make plans, divide roles among the members and work together toward a solution to the problem. Through working to solve this problem the students will achieve the goals of self-reliance, co-operation, and creativity. After the course start, make sure that you can contact the teacher in charge of the team. Based on the course rubric distributed in class each student has to establish individual goals. The course rubric is used to self-evaluation, mutual evaluation, and to evaluate the performance of each student. Every week at the end of the lesson, the student has to fill a retrospective sheet and set the next goal.				
Notice	The grading system of the course is composed on the self-evaluation by students, mutual evaluation, evaluation by the teacher in charge of the team (1), and multiple faculty members at the briefing session at the end of the term (2). Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class <input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Course overall guidance, presentation of the members of each team, team building guidance, confirmation of course schedule, restrictions and advice regarding the activities, explanation of the evaluation method. Later team members and the team and the teacher in charge meet and work together on team building.	To acquire Self-reliance, Co-operation and Creative Skills.	
		2nd	Each student set the activity targets, and self-goals. The team will discuss ideas and a theme to the activities. Later according to the team activity goal, the group will work on the implementation method, division of roles among the members and schedule, which will be summarized in an action plan.	To acquire Self-reliance, Co-operation and Creative Skills.	
		3rd	Each student set the activity targets, and self-goals. The team will discuss ideas and a theme to the activities. Later according to the team activity goal, the group will work on the implementation method, division of roles among the members and schedule, which will be summarized in an action plan.	To acquire Self-reliance, Co-operation and Creative Skills.	

		4th	Each student set the activity targets, and self-goals. The team will discuss ideas and a theme to the activities. Later according to the team activity goal, the group will work on the implementation method, division of roles among the members and schedule, which will be summarized in an action plan.	To acquire Self-reliance, Co-operation and Creative Skills.
		5th	Setting targets and planning activities, submit the action plan. According to the theme and goals of the team, the group will draw ideas and discuss them. The group will establish the activity goal, decide the method to achieve it, decide members' role sharing, schedule, and summarize in a plan.	To acquire Self-reliance, Co-operation and Creative Skills.
		6th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc.	To acquire Self-reliance, Co-operation and Creative Skills.
		7th	Team activities: Work according to the action plan.	To acquire Self-reliance, Co-operation and Creative Skills.
		8th	No mid-term Exam	
	2nd Quarter	9th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		10th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		11th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		12th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		13th	Briefing session: Report the activities of the team and listen to reports from other groups.	To acquire Self-reliance, Co-operation and Creative Skills.
		14th	Retrospective meeting and summary of activities: The group will discuss the results from the briefing session and review the team action plan. The students will evaluate individually and mutually their achieved points and goals, regarding self-reliance, co-operation, and creativity.	To acquire Self-reliance, Co-operation and Creative Skills.
		15th	Retrospective meeting and summary of activities: The group will discuss the results from the briefing session and review the team action plan. The students will evaluate individually and mutually their achieved points and goals, regarding self-reliance, co-operation, and creativity.	To acquire Self-reliance, Co-operation and Creative Skills.
		16th	No end-term Exam	

Evaluation Method and Weight (%)

	Individual Self-reliance (process)	Individual Co-operation (process)	Individual Creativity (process)	Team operation Co- (process)	Team Creativity (process)	Other	Total
Subtotal	24	24	12	20	20	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	24	24	12	20	20	0	100

Akashi College		Year	2023		Course Title	C o + w o r k III B	
Course Information							
Course Code		5419		Course Category		Specialized / Compulsory	
Class Format		Seminar		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials		No required textbook and the required material will change according to the contents of the activity of each team.					
Instructor		All faculty					
Course Objectives							
1) Self-reliance: To acquire individuality and self-management ability 2) Co-operation skills: To gain the ability to work in teams and respect the teammates. 3) Creative Skills: To acquire the ability to gather and organize information, discover and propose solutions to problems.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
1 Self-reliance		Schedule management, reporting, contact, consultation, planning goals with the teammates		Individually able to schedule management, reporting, contact, consultation, planning goals.		Not able to schedule management, reporting, contact, consultation, and planning goals	
2 Co-operation skills		Open to different opinions, able to express the student personal opinion, and ability to lead the team into a consensus.		Open to different opinions, able to express the student personal opinion, and ability to play the attributed role in the team.		Not open to different opinions, not able to express the student personal opinion, and can't to play the attributed role in the team.	
3 Creative Skills		The student can voluntarily gather information, organize and summarize this information, form ideas and explain those ideas to others.		The student can voluntarily gather information, organize and summarize this information, and explain those ideas to others.		The student can't voluntarily gather information, can't organize and summarize this information, and can't explain those ideas to others.	
Assigned Department Objectives							
Teaching Method							
Outline		This course aims to develop the students' self-reliance, co-operation and creative skills in a manner that the student can contribute to a team in a variety of environments (working with students from other departments, different age, and people from outside the school). Each group is to work with the instructor in charge and challenge themselves in creating something or perform activities that will bring happiness to someone other than the team members. Each team has to elaborate a plan and do its activities. The students will revise their plan after its presentation at a briefing session and retrospective evaluation.					
Style		2nd,3rd, and 4th academic year students from all four departments are randomly selected to compose a group with multiple students. After each student introduces themselves to the team, they will perform ice breaks and other activities that will help to build relationships within the group. Later the team will discuss and discover a problem to work with, make plans, divide roles among the members and work together toward a solution to the problem. Through working to solve this problem the students will achieve the goals of self-reliance, co-operation, and creativity. After the course start, make sure that you can contact the teacher in charge of the team. Based on the course rubric distributed in class each student has to establish individual goals. The course rubric is used to self-evaluation, mutual evaluation, and to evaluate the performance of each student. Every week at the end of the lesson, the student has to fill a retrospective sheet and set the next goal.					
Notice		The grading system of the course is composed on the self-evaluation by students, mutual evaluation, evaluation by the teacher in charge of the team (1), and multiple faculty members at the briefing session at the end of the term (2). Students who miss 1/4 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester r	3rd Quarter	1st	Course overall guidance, presentation of the members of each team, team building guidance, confirmation of course schedule, restrictions and advice regarding the activities, explanation of the evaluation method. Later team members and the team and the teacher in charge meet and work together on team building.		To acquire Self-reliance, Co-operation and Creative Skills.		
		2nd	Each student set the activity targets, and self-goals. The team will discuss ideas and a theme to the activities. Later according to the team activity goal, the group will work on the implementation method, division of roles among the members and schedule, which will be summarized in an action plan.		To acquire Self-reliance, Co-operation and Creative Skills.		
		3rd	Each student set the activity targets, and self-goals. The team will discuss ideas and a theme to the activities. Later according to the team activity goal, the group will work on the implementation method, division of roles among the members and schedule, which will be summarized in an action plan.		To acquire Self-reliance, Co-operation and Creative Skills.		

		4th	Each student set the activity targets, and self-goals. The team will discuss ideas and a theme to the activities. Later according to the team activity goal, the group will work on the implementation method, division of roles among the members and schedule, which will be summarized in an action plan.	To acquire Self-reliance, Co-operation and Creative Skills.
		5th	Setting targets and planning activities, submit the action plan. According to the theme and goals of the team, the group will draw ideas and discuss them. The group will establish the activity goal, decide the method to achieve it, decide members' role sharing, schedule, and summarize in a plan.	To acquire Self-reliance, Co-operation and Creative Skills.
		6th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc.	To acquire Self-reliance, Co-operation and Creative Skills.
		7th	Team activities: Work according to the action plan.	To acquire Self-reliance, Co-operation and Creative Skills.
		8th	No mid-term Exam	
	4th Quarter	9th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		10th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		11th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		12th	Team activities: Work according to the action plan. The action plan may be modified/changed, according to schedule delay, the incompleteness of the implementation method, etc. Prepare to the briefing session.	To acquire Self-reliance, Co-operation and Creative Skills.
		13th	Briefing session: Report the activities of the team and listen to reports from other groups.	To acquire Self-reliance, Co-operation and Creative Skills.
		14th	Retrospective meeting and summary of activities: The group will discuss the results from the briefing session and review the team action plan. The students will evaluate individually and mutually their achieved points and goals, regarding self-reliance, co-operation, and creativity.	To acquire Self-reliance, Co-operation and Creative Skills.
		15th	Retrospective meeting and summary of activities: The group will discuss the results from the briefing session and review the team action plan. The students will evaluate individually and mutually their achieved points and goals, regarding self-reliance, co-operation, and creativity.	To acquire Self-reliance, Co-operation and Creative Skills.
		16th	No end-term Exam	

Evaluation Method and Weight (%)

	Individual Self-reliance (process)	Individual Co-operation (process)	Individual Creativity (process)	Team operation Co- (process)	Team Creativity (process)	Other	Total
Subtotal	24	24	12	20	20	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	24	24	12	20	20	0	100

Akashi College		Year	2023	Course Title	Applied Physics I
Course Information					
Course Code	5420		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	OGASAWARA Hiromichi				
Course Objectives					
(1) Understand the description of motion of an object and the fundamental laws of mechanics.					
(2) Understand the basics of how to handle point masses in general based on the fundamental laws of mechanics.					
(3) Understand the basics of how to handle rigid body based on the fundamental laws of mechanics.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can explain the description of the motion of an object and the fundamental laws of mechanics correctly and apply them to specific questions accurately.		Can explain the description of the motion of an object and the fundamental laws of mechanics and apply them to specific questions.		Cannot explain the description of the motion of an object and the fundamental laws of mechanics or apply them to specific questions.
Achievement 2	Can explain the basics of how to handle point masses based on the fundamental laws of mechanics correctly and apply them to specific questions accurately.		Can explain the basics of how to handle point masses based on the fundamental laws of mechanics and apply them to specific questions.		Cannot explain the basics of how to handle point masses based on the fundamental laws of mechanics or apply them to specific questions.
Achievement 3	Can explain the basics of how to handle rigid body based on the fundamental laws of mechanics correctly and apply them to specific questions accurately.		Can explain the basics of how to handle rigid body based on the fundamental laws of mechanics and apply them to specific questions.		Cannot explain the basics of how to handle rigid body based on the fundamental laws of mechanics correctly or apply them to specific questions accurately.
Assigned Department Objectives					
Teaching Method					
Outline	Following Science IIIA (second semester), this course will lecture on mechanics.				
Style	Classes will be taught in a lecture style, and there will also be exercises and quizzes.				
Notice	<p>Instead of learning each knowledge (the result of applying the law to a particular situation, how to solve the problem) by memorizing it individually, students should understand the laws that govern them (including being able to apply them to specific situations). Also, students should be aware of the relationships between the various laws and try to understand concepts in physics systematically.</p> <p>The schedule of the midterm exam may be changed.</p> <p>Students who miss 1/3 or more of classes will not be eligible for a passing evaluation.</p>				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Motion and force, and mechanical energy	Learn how to handle motion of objects in planes and spaces.	
		2nd	Motion and force, and mechanical energy	Learn about the laws of motion.	
		3rd	Motion and force, and mechanical energy	Learn about work and kinetic energy.	
		4th	Motion and force, and mechanical energy	Learn about mechanical energy.	
		5th	Motion and force, and mechanical energy	Learn about inertial force.	
		6th	Law on momentum and angular momentum	Learn about the laws of momentum.	
		7th	Law on momentum and angular momentum	Learn about the laws of angular momentum.	
		8th	Midterm exam		
	2nd Quarter	9th	Law on momentum and angular momentum	Learn about the laws of angular momentum in the system of particles.	
		10th	Law on momentum and angular momentum	Learn about the translational and rotational motion.	
		11th	Rigid body dynamics	Learn how to handle rigid bodies with a fixed axis.	
		12th	Rigid body dynamics	Learn about the moment of inertia.	
		13th	Rigid body dynamics	Learn how to handle rigid bodies without fixed axes.	
		14th	Rigid body dynamics	Learn the basics of momentum, angular momentum, and energy in the mechanics of rigid bodies.	
		15th	Rigid body dynamics	Can solve somewhat complicated problems about rigid bodies.	
		16th	Final exam		

Evaluation Method and Weight (%)				
	Examinations	Exercises / Quizzes	Attendance / Behavior	Total
Subtotal	40	30	30	100
Basic Proficiency	0	0	0	0
Specialized Proficiency	40	30	30	100
Cross Area Proficiency	0	0	0	0

Akashi College		Year	2023		Course Title	Electronic Circuits I
Course Information						
Course Code	5421			Course Category	Specialized / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor	OHMUKAI Masato					
Course Objectives						
The goal is to achieve the following competencies: 1) Understand the characteristics of active elements, accurately understand the principles and properties of basic circuits using them, and can analyze these circuits. 2) Accurately understand the principles and properties of negative-feedback circuits and various amplifier circuits, and can analysis these circuits. 3) Accurately understand the principles and properties of circuits using arithmetic amplifiers, can analyze and design these circuits. 4) Accurately understand the principles and properties of oscillator, modulator, and demodulator circuits, and can analyze and design these circuits.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
Achievement 1	Understand the characteristics of active elements, accurately understand the principles and properties of basic circuits using them, and can analyze these circuits.		Understand the characteristics of active elements, understand the principles and properties of basic circuits using them, and can analyze these circuits.		Do not understand the characteristics of active elements or the principles and properties of basic circuits using them.	
Achievement 2	Accurately understand the principles and properties of negative-feedback circuits and various amplifier circuits, and can analysis these circuits.		Understand the principles and properties of negative-feedback circuits and various amplifier circuits, and can analysis these circuits.		Do not understand the principles and properties of negative-feedback circuits and various amplifier circuits.	
Achievement 3	Understand the principles and properties accurately, can analyze and design circuits using arithmetic amplifiers.		Understand the principles and properties, can analyze and design circuits using arithmetic amplifiers.		Do not understand the principles and properties of circuits using arithmetic amplifiers.	
	Accurately understand the principles and properties of oscillator, modulator, and demodulator circuits, and can analyze and design these circuits.		Understand the principles and properties of oscillator, modulator, and demodulator circuits, and can analyze and design these circuits.		Do not understand the principles and properties of oscillator, modulator, and demodulator circuits.	
Assigned Department Objectives						
Teaching Method						
Outline	We will explain the basics of analogue electronic circuits using active elements such as diodes, transistors, field effect transistors (FET), and operation amplifiers.					
Style	Classes will be held in a lecture style, mainly by explaining content following the textbook. Students will work on exercises and design assignments as appropriate.					
Notice	Students are required to learn in an active manner so they can design circuits themselves. If possible, they should construct the circuit they designed and study its operation. Students who miss 1/3 or more of classes will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan						
			Theme	Goals		
1st Semester r	1st Quarter	1st	Semiconductor	Understand the types of semiconductors and the electrical conduction principles within semiconductors.		
		2nd	Diode	Understand the rectification and voltage current characteristics of pn junction.		
		3rd	Transistor	Understand the basic structure, behavior and static properties of transistors.		
		4th	FET	Understand the basic structure, operation and static properties of FETs.		
		5th	IC	Understand the basic structure, operation and static properties of IC.		
		6th	Transistor amplifier circuits	Understand the basics of transistor amplifier circuits.		
		7th	Transistor bias circuit	Understand how to design a simple bias circuit for an amplifier circuit using transistors.		
		8th	Midterm exam			
	2nd Quarter	9th	Transistor equivalent circuit 1	Understand fixed bias and self-bias circuits.		
		10th	Transistor equivalent circuit 2	Understand the current feedback bias circuit.		

		11th	Emitter ground amplifier circuit	Understand gain, frequency band, input and output impedance in transistor amplifier circuits.
		12th	Transistor negative-feedback amplifier circuit	Understand negative-feedback amplifier circuits using transistors.
		13th	FET bias circuit	Understand how to design a simple bias circuit for an amplifier circuit using FETs.
		14th	FET equivalent circuit	Understand the analysis of a source ground amplifier circuit using an equivalent circuit.
		15th	FET negative-feedback amplification circuit	Understand negative-feedback amplifier circuit using FETs.
		16th	Final exercise	

Evaluation Method and Weight (%)			
	Examination	Exercise	Total
Subtotal	60	40	100
Basic Proficiency	0	0	0
Specialized Proficiency	60	40	100
Cross Area Proficiency	0	0	0

Akashi College		Year	2023	Course Title	Preliminaries to Graduation Thesis
Course Information					
Course Code	5422		Course Category	Specialized / Compulsory	
Class Format	Seminar		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	All faculty of the department				
Course Objectives					
(1) Can continuously explore things. (2) Can summarize the results obtained for the project undertaken. (3) Can consider the research theme in various approaches, and create flexible and innovative ideas.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can continuously explore things and obtain results that match with the theme.		Can continuously explore things.		Cannot continuously explore things.
Achievement 2	Can properly summarize the results obtained on the theme addressed.		Can summarize the results obtained on the theme addressed.		Cannot summarize the results obtained on the theme addressed.
Achievement 3	Can consider the research theme in various approaches, and create flexible and innovative ideas. In addition, can choose the appropriate approach.		Can consider the research theme in various approaches, and create flexible and innovative ideas.		Cannot consider the research theme in various approaches, or create flexible and innovative ideas.
Assigned Department Objectives					
Teaching Method					
Outline	The aim of this course is to develop the basic abilities necessary for graduation research in the fifth year. Students will gain the basic knowledge necessary to address a research theme and examine how to approach them.				
Style	Themed research will be conducted by multiple faculty members (laboratories), and students will be assigned to one of them. In accordance with the instructions of the supervisor of the laboratory they are assigned to, students will conduct lecture-based learning, document research, experiments, simulations, etc.				
Notice	Engage in research actively and continuously. Students who spend less than 22.5 hours on research will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
<input type="checkbox"/> Instructor Professionally Experienced					
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Laboratory assignments	After learning the research details of each laboratory, students can apply for the laboratory they wish to join.	
		2nd	Themed research	Conduct lecture-based learning, document research, experiments, simulations, etc. under the supervisor.	
		3rd	Same as above	Same as above	
		4th	Same as above	Same as above	
		5th	Same as above	Same as above	
		6th	Same as above	Same as above	
		7th	Same as above	Same as above	
		8th	Same as above	Same as above	
	4th Quarter	9th	Same as above	Same as above	
		10th	Same as above	Same as above	
		11th	Same as above	Same as above	
		12th	Same as above	Same as above	
		13th	Same as above	Same as above	
		14th	Preparing a resume for themed research presentation	Can summarize the results of the themed research and prepare a resume for the presentation.	
		15th	Themed research presentation	Can give an oral presentation on the results of the themed research.	
		16th	No final exam		
Evaluation Method and Weight (%)					
	Initiatives		Project research presentation		Total
Subtotal	50		50		100

Basic Proficiency	0	0	0
Specialized Proficiency	50	50	100
Cross Area Proficiency	0	0	0

Akashi College		Year	2023		Course Title	Discrete Mathematics A	
Course Information							
Course Code		5423		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		HAMADA Yukihiro					
Course Objectives							
[1] Can explain what counting is.							
[2] Develop self-directed and continuous learning skills by mastering the arguments used in a mathematical proof.							
[3] Can think in a recursive manner.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can explain sets and functions in a classified way, and determine whether the cardinalities of two sets are equal		Can explain sets and a functions, and determines whether the cardinalities of two sets are equal		Cannot explain a set and a function, and cannot determines whether the cardinalities of two sets are equal	
Achievement 2		Can explain the propositions and predicates, and correctly write a mathematical proof using proof by contraposition and contradiction, and the mathematical induction methods accurately.		Can explain the propositions and predicates, and write a mathematical proof using proof by contraposition and contradiction, and the mathematical induction methods.		Cannot explain the propositions and predicates, and write a mathematical proof using proof by contraposition and contradiction, and the mathematical induction methods.	
Achievement 3		Can define sets and functions recursively and correctly.		Can define sets and functions recursively.		Cannot define sets and functions recursively.	
Assigned Department Objectives							
Teaching Method							
Outline		Discrete mathematics is a field of mathematics that deals with finite or discrete subjects, and one of the foundations of computer science. In this course, you will learn about sets and functions, mathematical induction and recursive definitions, Backus form and context-free grammar.					
Style		Classes will be held in a lecture style.					
Notice		Make sure you understand the exact definition of the term and get an intuitive image from the formal description. Try to solve the examples or exercise problems yourself and score it against the answer. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester r	1st Quarter	1st	Basic form		Can use form to represent sets or conditions.		
		2nd	The relationship between the sets		Can perform various set operations and can use basic formulas.		
		3rd	Function 1/2		Can explain the basics function.		
		4th	Function 2/2		Can explain the associative law, inverse function and substitution for injection, surjection, bijection, composition of function, and composition.		
		5th	Infinite sets and cardinality 1/2		Can explain the cardinality of a set and can determine if the cardinalities of the two sets are equal.		
		6th	Infinite sets and cardinality 2/2		Can explain the counting and cardinality of the continuum.		
		7th	Propositions and proof by contradiction		Can explain the propositions and the converse, inverse, and contraposition. Can write mathematical proof using contraposition and proof by contradiction.		
		8th	Midterm exam It is given during class.				
	2nd Quarter	9th	Predicate		Can explain a predicate (a function that takes only true or false as a value).		
		10th	Propositional logic and its limitation in descriptive ability		Can explain the logical expression of a propositional logic and can represent a statement in a logical expression. Can explain the logical expression of predicate logic.		
		11th	Language		Can explain the basics of formal languages.		
		12th	Mathematical induction 1 of 2		Can mathematical proof by induction		
		13th	Mathematical induction 2 of 2		Can write mathematical proof using the complete induction. Can explain the dual induction.		

		14th	Recursive definition		Can define sets, functions, etc. recursively.		
		15th	Backus form and context-free grammar		Can handle Backus form and context-free grammar.		
		16th	Final exam				
Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	100	0	0	0	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Discrete Mathematics B	
Course Information							
Course Code		5424		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		HAMADA Yukihiro					
Course Objectives							
[1] Can explain the generalized concept of being equal and being larger (smaller). [2] Can explain the basics of graph theory. [3] Can explain the basics of formal language theory.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can explain the equivalence relation, partial orders, and total orders accurately.		Can explain the equivalence relation, partial orders, and total orders.		Cannot explain the equivalence relation, partial orders, and total orders.	
Achievement 2		Can explain the path, connectivity, and tree of graph theory accurately.		Can explain the path, connectivity, and tree of graph theory.		Cannot explain the path, connectivity, and tree of graph theory.	
Achievement 3		Can use Backus form, context-free grammar, finite automaton, and regular grammar correctly.		Can use Backus form, context-free grammar, finite automaton, and regular grammar.		Cannot use Backus form, context-free grammar, finite automaton, and regular grammar.	
Assigned Department Objectives							
Teaching Method							
Outline		Discrete mathematics is a field of mathematics that deals with finite or discrete subjects, and one of the foundations of computer science. In this course, you will learn about relations on a set, graphs and trees, finite automaton and regular grammar.					
Style		Classes will be held in a lecture style.					
Notice		Make sure you understand the exact definition of the term and get an intuitive image from the formal description. Try to solve the examples or exercise problems yourself and score it against the answer. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester r	3rd Quarter	1st	Binary relation 1 of 2		Can explain the basics of binary relation.		
		2nd	Binary relation 2 of 2		Can calculate composition and exponentiation of binary relation.		
		3rd	Equivalence relation 1/2		Can explain the equivalence relation, which is a generalization of the concept of equal.		
		4th	Equivalence relation 2/2		Can handle equivalence class, quotient set, and subdivisions of equivalence relation.		
		5th	Order 1 of 2		Can explain the partially ordered set and total order of the inequality (=) generalization.		
		6th	Order 2 of 2		Can handle the upper extremum, lower extremum, maximum, and minimum values of a partially ordered set, and can explain the above (below) boundary.		
		7th	Midterm exam It is given during class.				
		8th	Illustration of binary relation		Can illustrate the binary relation as a directed graph.		
	4th Quarter	9th	Hasse diagram, topological sort, and transitive closure		Can draw a Hasse diagram of partially ordered set, and can explain the closure of topological sort and transitive.		
		10th	Graph basics 1 of 2		Can explain the basics of graphs.		
		11th	Graph basics 2 of 2		Can explain n-partite graph and several kinds of paths in a graph. Also, can represent a graph by adjacency matrix, adjacency list and incidence matrix.		
		12th	The connectivity of a graph		Can explain the diameter, radius, connected component, cut vertex, bridge, connectivity and edge connectivity. Also, can explain n-connected and n-edge connected.		
		13th	Tree		Can explain the fundamental concepts and theorems about trees. Also, can explain ordered tree, positional tree, binary tree and n-ary tree.		

		14th	Finite automaton and nondeterministic finite automaton	Can define FA and NFA formally and draw their state transition diagrams. Also, can determine the language that they accept.
		15th	Regular grammar and regular expression	Can define right linear grammar and left linear grammar formally, and determine the language that they generate. Can represent a given language by regular expression.
		16th	Final exam	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Computer Architecture	
Course Information							
Course Code		5425		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		NOMURA Hayato					
Course Objectives							
1. Understand the basic structure and functionality of a computer. 2. Understand the instruction set architecture. 3. Understand the control architecture. 4. Understand the memory architecture.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Understand and can explain the basic structure and functionality of a computer.		Understand the basic structure and functionality of a computer.		Do not understand the basic structure and functionality of a computer.	
Achievement 2		Understand and can explain the instruction architecture.		Understand the instruction architecture.		Do not understand the instruction architecture.	
Achievement 3		Understand and can explain the control architecture.		Understand the control architecture.		Do not understand the control architecture.	
		Understand and can explain the memory architecture.		Understand the memory architecture.		Do not understand the memory architecture.	
Assigned Department Objectives							
Teaching Method							
Outline		In this course, students will learn the overview of the basic structure and functionality of a computer, and the theory of the CPU instruction set and executive control, memory, and input/output devices that make up a computer.					
Style		Classes will mainly involve lectures, but if necessary, there will be exercises to improve understanding and retention.					
Notice		This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for pre-study / review, and completing assignment reports. In this class, students are expected to take into account the contents of Operating System held in the first semester, and be conscious of how the CPU, which is the core hardware of a computer, execute a process. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester r	1st Quarter	1st	Overview of computer architecture		Understand the basic structure and functionality of a computer.		
		2nd	Data representation (1): Fixed-point format, floating-point formats		Understand the fixed-point and floating-point formats for representing numeric data.		
		3rd	Data representation (2): Text data, image data		Understand the representation of text data and image data.		
		4th	Instruction architecture (1): Basic configuration, instruction set		Understand the basic CPU configuration and instruction set.		
		5th	Instruction architecture (2): Instruction formats, addressing mode		Understand the instruction format and addressing mode.		
		6th	Instruction architecture (3): Instruction execution sequence		Understand the order in which the instructions are executed.		
		7th	Control architecture (1): Control methods		Understand the methods and pipelines for controlling instruction execution.		
		8th	Midterm exam		Midterm exam		
	2nd Quarter	9th	Control architecture (2): Interrupts		Understand interrupts that change the flow of instruction execution.		
		10th	Memory architecture (1): Virtual memory		Understand the mapping between physical and virtual memory.		
		11th	Memory architecture (2): Cache memory, paging		Understand cache memory and paging.		
		12th	Memory architecture (3): Address translation		Understand the address translation.		
		13th	Memory architecture (4): Segmentation method		Understand the segmentation method.		
		14th	Input/output architecture (1): Types of input/output devices and their management		Understand the types of input/output devices and their management.		
		15th	Input/output architecture (2): Input/output channels		Understand the input and output channels.		
		16th	Final exam		Final exam		

Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Task	Total
Subtotal	60	0	0	0	0	40	100
Basic Proficiency	30	0	0	0	0	20	50
Specialized Proficiency	20	0	0	0	0	10	30
Cross Area Proficiency	10	0	0	0	0	10	20

Akashi College		Year	2023		Course Title	Computer Programming III A
Course Information						
Course Code	5426			Course Category	Specialized / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor	HIRANO Masatsugu					
Course Objectives						
The goal of this course is acquire the following via lectures and exercises on the object-oriented programming language. 1) Can explain the basic grammar of the object-oriented programming language and the unique grammar of the object-oriented programming language. 2) Understand the concept of object-oriented programming. 3) Can create an application for a problem given. 4) Can solve a problem through programming.						
Rubric						
		Ideal Level	Standard Level		Unacceptable Level	
Achievement 1		Can explain the basic grammar of the object-oriented programming language and the unique grammar object-oriented programming language in detail.	Can explain the basic grammar of the object-oriented programming language and the unique grammar object-oriented programming language.		Cannot explain the basic grammar of the object-oriented programming language and the unique grammar object-oriented programming language in detail.	
Achievement 2		Understand the concept of object-oriented programming and can give practical example.	Understand the concept of object-oriented programming.		Do not understand the concept of object-oriented programming.	
Achievement 3		Can create an optimal application for a problem given.	Can create an application for a problem given.		Cannot create an optimal application for a problem given.	
		Can solve a problem through programming independently.	Can solve a problem through programming in conjunction with investigation.		Cannot solve a problem through programming.	
Assigned Department Objectives						
Teaching Method						
Outline	Programming is an essential skill in computer science. IT students are expected to develop a mindset of problem solving through programming in an early time. In this course, students will be developing the ability to solve problems through programming using the Python programming language. They will also learn object-oriented concepts that are important in the current software design. The instructor who have been developing medical system in a company will take advantage of their experience to teach in class.					
Style	Classes will be conducted in a lecture style in line with the textbook at the beginning. Then there will be quizzes to check students' understanding. Once students have gained a better understanding, carry out programing from the exercise questions in the computer lab. Programming in groups will be assigned in the last few weeks.					
Notice	Review the C languages learned in Programming I and Programming II. Develop a daily programming habit. In addition to the periodic exam, students should conduct class review quizzes, exercises, and assignments to achieve the goals. Students who miss 1/4 or more of classes will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning						
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
1st Semester r	1st Quarter	1st	Basic knowledge of the object-oriented prograHistory, current situation and development environment of Python		Can explain the characteristics of the object-oriented programming language. up.	
		2nd	Basics of programming		Object-oriented development procedures can be done without looking at anything. Can run a simple program.	
		3rd	Python basics		Can solve exercise problems using variables and data types.	
		4th	Operator		Mutables and immutables, identity and same-valence can be explained, and these exercise problems can be solved.	
		5th	Conditional branching, repeating		Explain the range function and list comprehension notation.	
		6th	Loop control, exception handling		Can define the try instruction.	
		7th	Module, string operation		Can create a program on your own after asked about string exercise questions.	
		8th	Midterm exam		Understand the content taught in first to seventh week in the first semester.	
	2nd Quarter	9th	Date and time operation		Can understand the date and time operation and create a program.	

		10th	Sequence type	Understand the slice syntax, queue structure, and immutable lists, and create programs.
		11th	Collective type, dictionary type	Can understand sets and hash tables and create programs.
		12th	Regular expression	Can understand regular expressions and create programs.
		13th	File operation	Can create a program on your own after asking questions about exercises using file processing.
		14th	Standard library (others)	Can understand the acquisition via HTTP and create a program.
		15th	Method call	Understand and can create program using call method.
		16th	Final exam	Understand the content taught in ninth to fifteenth week in the first semester.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Exercises	Other	Total
Subtotal	65	5	0	0	0	30	0	100
Basic Proficiency	0	0	0	0	0	0	0	0
Specialized Proficiency	65	5	0	0	0	30	0	100
Cross Area Proficiency	0	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Computer Programming III B
Course Information						
Course Code	5427			Course Category	Specialized / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	Second Semester			Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor	HIRANO Masatsugu					
Course Objectives						
The goal of this course is acquire the following via lectures and exercises on the object-oriented programming language. 1) Can explain the basic grammar of the object-oriented programming language and the unique grammar of the object-oriented programming language. 2) Understand the concept of object-oriented programming. 3) Can create an application for a problem given. 4) Can solve a problem through programming.						
Rubric						
		Ideal Level	Standard Level		Unacceptable Level	
Achievement 1		Can explain the basic grammar of the object-oriented programming language and the unique grammar object-oriented programming language in detail.	Can explain the basic grammar of the object-oriented programming language and the unique grammar object-oriented programming language.		Cannot explain the basic grammar of the object-oriented programming language and the unique grammar object-oriented programming language in detail.	
Achievement 2		Understand the concept of object-oriented programming and can give practical example.	Understand the concept of object-oriented programming.		Do not understand the concept of object-oriented programming.	
Achievement 3		Can create an optimal application for a problem given.	Can create an application for a problem given.		Cannot create an optimal application for a problem given.	
		Can solve a problem through programming independently.	Can solve a problem through programming in conjunction with investigation.		Cannot solve a problem through programming.	
Assigned Department Objectives						
Teaching Method						
Outline	Programming is an essential skill in computer science. IT students are expected to develop a mindset of problem solving through programming in an early time. In this course, students will be developing the ability to solve problems through programming using the Python programming language. They will also learn object-oriented concepts that are important in the current software design. The instructor who have been developing medical system in a company will take advantage of their experience to teach in class.					
Style	Classes will be conducted in a lecture style in line with the textbook at the beginning. Then there will be quizzes to check students' understanding. Once students have gained a better understanding, carry out programing from the exercise questions in the computer lab. Programming in groups will be assigned in the last few weeks.					
Notice	Review the C languages learned in Programming I and Programming II. Develop a daily programming habit. In addition to the periodic exam, students should conduct class review quizzes, exercises, and assignments to achieve the goals. Students who miss 1/4 or more of classes will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning						
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
2nd Semester	3rd Quarter	1st	Creation assignment(1)	Describe the content of the assignment. Can create a program that fits requirement specification.		
		2nd	Creation assignment(2)	Can present the program that fits the requirements specification to other students.		
		3rd	Creation assignment(3)	Can carry out programing as a group on a given task.		
		4th	Creation assignment(4)	Can carry out programing as a group on a given task.		
		5th	Creation assignment(5)	Can carry out programing as a group on a given task.		
		6th	Creation assignment(6)	Can carry out programing as a group on a given task.		
		7th	Creation assignment(7)	Can prepare for a mini-programming contest.		
		8th	Mini-programming contest	Understand the content taught in first to seventh week in the second semester.		
	4th Quarter	9th	Argument notation, high-order and anonymous functions	Understand keyword arguments and higher-order / anonymous functions, and be able to create programs.		
		10th	User-defined function (1)	Understand decorator, generator and the modularization of functions and create programs.		

		11th	User-defined function (2)	Understand asynchronous processing, documentation, and create programs.
		12th	Object-oriented syntax (1)	Can understand classes, encapsulations, and create programs.
		13th	Object-oriented syntax (2)	Can understand and create programs about inheritance and polymorphism.
		14th	Object-oriented syntax (application 1)	Can understand and create programs about finally sections, rise instructions, and special methods.
		15th	Object-oriented syntax (application 2)	Can understand data classes, iterators, and metaclasses and reflect them in the program.
		16th	Final exam	Understand the content taught in ninth to fifteenth week in the second semester.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Exercises	Other	Total
Subtotal	65	5	0	0	0	30	0	100
Basic Proficiency	0	0	0	0	0	0	0	0
Specialized Proficiency	65	5	0	0	0	30	0	100
Cross Area Proficiency	0	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Operating System	
Course Information							
Course Code		5428		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		NOMURA Hayato					
Course Objectives							
1. Understand the history of operating systems and can explain the differences between operating systems such as Windows, Mac OS, and Linux. Can explain multitasking. 2.Can explain memory management. 3. Can explain the file system. 4. Can explain the security that can be implemented on operating systems.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can explain the key roles and behaviors of OS.		Can explain the key roles of OS.		Cannot explain the key roles of OS.	
Achievement 2		Can explain process management, including various scheduling methods.		Can explain process management.		Cannot explain process management.	
Achievement 3		Can explain memory management, including the difference between managing physical and virtual memory.		Can explain memory management.		Cannot explain memory management.	
		Understand data protection and security for OS and can execute a method to keep it secure.		Can explain data protection and security for OS.		Cannot explain data protection or security for OS.	
Assigned Department Objectives							
Teaching Method							
Outline		Based on the history of the operating systems, we will learn about the roles and functions of the operating systems on which computers run.					
Style		Classes are conducted through lectures and exercises. Lectures will be conducted through handouts. In addition to what students learned in classes, they will perform individual activities on assignments given.					
Notice		As classes are deeply related with Computer Architecture held in the second semester, students are required to be aware of how OS, as software, controls a computer as hardware. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester r	3rd Quarter	1st	The configuration and history of the operating systems		Learn about the configuration and history of the operating systems.		
		2nd	Shell		Understand the shell that provides the interface between the operating system and the user.		
		3rd	Process management 1		Understand process concepts and process management.		
		4th	Process management 2		Understand job scheduling and interrupts for processes.		
		5th	Parallel process 1		Understand multitasking and multithreading.		
		6th	Parallel process 2		Understand exclusive controls, critical sections, and deadlocks.		
		7th	Parallel process 3		Understand semaphores and monitors.		
		8th	Midterm exam		Midterm exam		
	4th Quarter	9th	Main memory management 1		Understand the relationship between physical and virtual memory and how to manage them.		
		10th	Main memory management 2		Understand paging and segmentation.		
		11th	Main memory management 3		Understand page replacement methods.		
		12th	File		Understand file management and file system models, structure, and implementation.		
		13th	Device management		Understand how devices connected to the system works. are managed.		
		14th	Virtualization		Understand OS virtualization technologies.		
		15th	Protection and security		Understand the concept of system calls, OS protection, and security.		
		16th	Final exam		Final exam		

Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Task	Total
Subtotal	60	0	0	0	0	40	100
Basic Proficiency	30	0	0	0	0	20	50
Specialized Proficiency	20	0	0	0	0	10	30
Cross Area Proficiency	10	0	0	0	0	10	20

Akashi College		Year	2023	Course Title	Data Structures and Algorithms
Course Information					
Course Code	5429		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	HAMADA Yukihiro				
Course Objectives					
<div> <div>1</div> <div>Learn techniques for the complexity analysis of algorithms.</div> </div> <div> <div>2</div> <div>Understand basic data structures and operations for them.</div> </div> <div> <div>3</div> <div>Learn basic algorithm design techniques.</div> </div> <div> <div>4</div> <div>Understand basic sorting algorithms and their time complexity.</div> </div>					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can analyze the complexity of an algorithm and the lower bound of a problem.		Can analyze the complexity of an algorithm.		Cannot analyze the complexity of an algorithm
Achievement 2	Understand the basic data structures and can use them accurately.		Understand and can use basic data structures		Do not understand the basic data structure and cannot use them
Achievement 3	Can use basic algorithm design techniques accurately		Can use basic algorithm design techniques.		Cannot use basic algorithm design techniques
Achievement 4	Can accurately explain basic sorting algorithms and their time complexity.		Can explain basic sorting algorithms and their time complexity.		Cannot explain basic sorting algorithms and their time complexity.
Assigned Department Objectives					
Teaching Method					
Outline	In this course, students will learn about typical data structures, basic knowledge of algorithms, and algorithm design techniques. A data structure represents a collection of data and the relationship between the data. An algorithm is a calculation procedure that solves a problem, and always gives an answer and complete the calculation within a finite amount of time as long as you follow the procedure Data structures and algorithms, in other words, are ingredients for a program and are essential knowledge in creating an efficient program.				
Style	Classes will be held in a lecture style.				
Notice	This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for pre-study / review, and completing assignment reports. Students are required to develop abilities to think. Quizzes and programming assignments for the week will be done on the e-learning system. As it's a learning-credit subject, it's essential that students score at least two-thirds in the quizzes and assignments and submit them by the due date. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
<input type="checkbox"/> Instructor Professionally Experienced					
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Algorithms and computational complexity	Can describe the difference between a problem and an example problem, and can explain what are algorithms that solve the problem. Can analyze the complexity of an algorithm using the order notation.	
		2nd	Data structure that represents the column 1/2	Can explain how arrays and lists are implemented in a program. Can analyze the time complexity required for basic operations for each data structure.	
		3rd	Data structure that represents the column 2/2	Can explain how stacks and queues are implemented in a program Can analyze the nature of each data structure and the time complexity required for basic operations.	
		4th	Graphs and trees	Can explain how graphs and trees are implemented in a program and space complexity. Can explain time complexity for operations to examine the adjacency of the vertices of a graph (tree) for each method.	
		5th	Heap	The heap is a one-dimensional array of partially ordered trees. Can write an algorithm that makes up the heap and algorithm that inserts and deletes data. Also, can analyze their time complexity.	
		6th	Recursive method and recursive equations	Can write an algorithm by using the recursive method. Can solve the recursive equation obtained by analysis of the time complexity of the recursive procedure.	

		7th	Divide-and-conquer method	Can write an algorithm with the divide-and-conquer method used in combination with the recursive method.
		8th	Midterm examination	
	4th Quarter	9th	Dynamic planning method	Can explain the dynamic planning method used extensively in optimization problems and its calculation process.
		10th	Simple sorting algorithms and decision tree	Can write algorithms for methods such as simple insertion, simple selection, and bubble sort, and can analyze their time complexity. Can analyze the number of comparisons in sorting by comparison by using decision trees.
		11th	Optimal sorting algorithm	Can write an algorithm for merge sort and heap sort, and analyze their time complexity. They have optimal worst-case time complexity.
		12th	Quicksort and bucket sort	Can write quicksort algorithm and analyze its time complexity. It has optimal average-case time complexity. Also, can write bucket sort algorithm and analyze its time complexity.
		13th	Binary search method and binary search tree	Can explain the binary search method that allows fast data search when the data is sorted by the size of the search key. Can write an algorithm for a binary search tree, using concept of binary search that allows data insertion or deletion, and can analyze its time complexity.
		14th	AVL tree, B tree, hashing method	Binary search trees do not necessarily improve the balance of the trees. Can explain the AVL and B trees, typical equilibrium trees. In addition, can explain a hash method that represents a set without comparing data.
		15th	Greedy algorithm	Can explain the algorithms of Kruskal and Prim that make up the minimum spanning tree of a graph. Also, can analyze their time complexity.
		16th	Final examination	

Evaluation Method and Weight (%)

	Examination	Exercise	Task	Behavior	Portfolio	Other	Total
Subtotal	66	14	20	0	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	66	14	20	0	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Experiments of Computer Engineering I A	
Course Information							
Course Code		5430		Course Category		Specialized / Compulsory	
Class Format		Experiment		Credits		School Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		4	
Textbook and/or Teaching Materials							
Instructor		TERASAWA Shinichi,INOUE Kazunari,HIRANO Masatsugu,NOMURA Hayato,					
Course Objectives							
1. Can actively participate in experiments by group and carry out experiments in cooperation with the group members. 2. Can conduct experiments in a planned manner based on the basic ability, and analyze the results of an experiment. 3. Can summarize the results of a experiments in a report with correct writing expressions.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can actively participate in experiments by group and carry out experiments in cooperation with the group members.		Can carry out experiments in cooperation with the group members.		Cannot carry out experiments.	
Achievement 2		Can conduct experiments in a planned manner and analyze the results of an experiment.		Can analyze the results of the experiments.		Cannot analyze the results of an experiment.	
Achievement 3		Can summarize the results of an experiment in a report with correct writing expressions and submit in time.		Can summarize the results of an experiment in a report with correct writing expressions.		Cannot summarize the results of an experiment in a report.	
Assigned Department Objectives							
Teaching Method							
Outline		The goal of this course is to acquire the ability to solve new problems practically while understanding and confirming the knowledge and techniques of electrical information acquired so far through experimental themes. Furthermore, the course requires students to submit reports on each theme, in order to help them learn necessary writing expressions for scientific reports. The experiments will be conducted by groups, to help students develop autonomy, coordination, planning, and leadership. Inoue and Nakai will be in charge of information-related activities, Hirano will be in charge of measurement-related activities, Nomura and Terazawa will be in charge of FPGA-related activities, Terazawa will be in charge of microcomputer-related activities. In the network experiment, faculty members with practical experience in router and other network equipment development will utilize their experience in experiments on the configuration of the equipment and the construction of a LAN. The experiments in weeks 9 to 12 of the first semester and week 9 of the second semester will be supervised by persons engaged in the development of electronic devices and other activities in a company.					
Style		Students will conduct experiments on themes closely related to the electrical and electronic fields, such as information technology, FPGAs, and microcomputers, in groups of four to five, and submit a report on them. They will actively conduct experiments give, based on their own necessary preparation and pre-study, and guidance provided on the spot by the instructor of the experiment. In the information engineering experiment, faculty members with practical experience in router and other network equipment development will utilize their experience in experiments on the configuration of the equipment and the construction of a LAN.					
Notice		If all reports have not been received by the due date, students will not receive a passing grade. Students must clean the lab and put away the equipment. Precautions regarding the experiments will be given during the first week of the first and second semesters. Students have to participate in all experiments. Students will not be graded unless they have participated in all experiments.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester	1st Quarter	1st	Experiment guidance		Understand the various precautions related to engineering experiments and the outline of the theme of each experiment.		
		2nd	Making LAN cables		Understand how LAN cables work and TCP/IP Layer 2, including forwarding.		
		3rd	Network fundamentals and IP addresses		Understand layer 2 and 3 by the operation of L2 and L3 switches.		
		4th	Various router configurations and the internet		Understand the various router configurations, WAN/LAN isolation, and security controls.		
		5th	Internet of things experiments using Microcomputer 1		Understand the control of communication devices using microcomputers.		
		6th	Internet of things experiments using Microcomputer 2		Understand the IoT in LPWA communications and data transfer to servers.		
		7th	Report organization		Can examine and compile the results of the experiment into a report.		
		8th	No midterm exam				
	2nd Quarter	9th	FPGA1 (Circuit design)		Understand logic circuit inputs using IDE (Integrated Development Environment).		

		10th	FPGA2 (emulator debug)	Understand the simulation and debugging of logical circuits using the IDE (Integrated Development Environment).
		11th	FPGA3 (implementation and operation)	Understand circuit implementation in FPGA(Field Programmable Logic Array).
		12th	FPGA4 (evaluation)	Understand the operation, debugging, and evaluation of implementation circuitry with FPGAs.
		13th	Computer measurement I.	Can perform waveform measurement and processing using a computer and measurement interface.
		14th	Computer measurement II.	Can fabricate a stethoscope using a computer and an interface microphone for measurement.
		15th	Report organization	Can examine and compile the results of the experiment into a report.
		16th	No final exam	

Evaluation Method and Weight (%)

	Report	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	20	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	0	0	20	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Experiments of Computer Engineering I B	
Course Information							
Course Code		5431		Course Category		Specialized / Compulsory	
Class Format		Experiment		Credits		School Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		4	
Textbook and/or Teaching Materials							
Instructor		NAKAI Yuichi,TERASAWA Shinichi,ENOMOTO Ryuji					
Course Objectives							
1. Can actively participate in experiments by group and carry out experiments in cooperation with the group members. 2. Can conduct experiments in a planned manner based on the basic ability, and analyze the results of an experiment. 3. Can summarize the results of a experiments in a report with correct writing expressions.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can actively participate in experiments by group and carry out experiments in cooperation with the group members.		Can carry out experiments in cooperation with the group members.		Cannot carry out experiments.	
Achievement 2		Can conduct experiments in a planned manner and analyze the results of an experiment.		Can analyze the results of the experiments.		Cannot analyze the results of an experiment.	
Achievement 3		Can summarize the results of an experiment in a report with correct writing expressions and submit in time.		Can summarize the results of an experiment in a report with correct writing expressions.		Cannot summarize the results of an experiment in a report.	
Assigned Department Objectives							
Teaching Method							
Outline		The goal of this course is to acquire the ability to solve new problems practically while understanding and confirming the knowledge and techniques of electrical information acquired so far through experimental themes. Furthermore, the course requires students to submit reports on each theme, in order to help them learn necessary writing expressions for scientific reports. The experiments will be conducted by groups, to help students develop autonomy, coordination, planning, and leadership. Nakai and Enomoto will be in charge of information-related activities, Terazawa will be in charge of microcomputer-related activities. The experiments in week 9 to 11 of the semester will be supervised by persons engaged in the development of electronic devices and other activities in a company.					
Style		Students will conduct experiments on themes closely related to the electrical and electronic fields, such as information technology, microcomputers, in groups of four to five, and submit a report on them. They will actively conduct experiments give, based on their own necessary preparation and pre-study, and guidance provided on the spot by the instructor of the experiment.					
Notice		If all reports have not been received by the due date, students will not receive a passing grade. Students must clean the lab and put away the equipment. Precautions regarding the experiments will be given during the first week of the first and second semesters. Students have to participate in all experiments. Students will not be graded unless they have participated in all experiments.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	Experiment guidance		Understand the Precautions regarding engineering experiments and the outline of each experiment theme.		
		2nd	Drone control with Python (1)		Understand the basics of controlling drones using Python.		
		3rd	Drone control with Python (2)		Can use Python to provide simple drone control.		
		4th	Drone control with Python (3)		Can create a Python program to perform a given task.		
		5th	Drone control with Python (4)		Can create a Python program to perform a given task.		
		6th	Drone control with Python (5)		Can create a Python program to perform a given task.		
		7th	Drone control with Python (6)		Can perform the task in the completed program.		
		8th	No midterm exam				
	4th Quarter	9th	Microcomputer 1		Can build control systems using embedded microcomputers.		
		10th	Microcomputer 2		Can build control systems using embedded microcomputers.		
		11th	Microcomputer 3		Can build control systems using embedded microcomputers.		
		12th	Report organization		Can examine and compile the results of the experiment into a report.		
		13th	AI 1		Can build AI system.		

		14th	AI 2	Can build AI system.
		15th	Summarizing and organizing	Can summarize and organize the experiment.
		16th	No final exam	

Evaluation Method and Weight (%)

	Report	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	20	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	0	0	20	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Off-Campus Practical Training A
Course Information						
Course Code		5432		Course Category	Specialized / Elective	
Class Format		Practical training		Credits	School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term		Year-round		Classes per Week	1	
Textbook and/or Teaching Materials						
Instructor		All faculty of the department				
Course Objectives						
(1) Can experience some of the actual technical activities related to engineering. (2) Can use slides to report on the things they have experientially learned.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Achievement 1		Can experience some of the actual technical activities related to engineering collaboratively.		Can experience some of the actual technical activities related to engineering.		Cannot experience some of the actual technical activities related to engineering.
Achievement 2		Can use slides to report on the things they have experientially learned, and be understood by others.		Can use slides to report on the things they have experientially learned.		Cannot use slides to report on the things they have experientially learned.
Assigned Department Objectives						
Teaching Method						
Outline		Internship is mainly held in companies, government agencies, non-profit corporations, universities, etc. in the fields of electrical and electronic engineering and information engineering. Through this experience, students gain a sense of practical technology and can exert the knowledge in further learning.				
Style		Follow the guidance given by instructors at the internship destination.				
Notice		Read the internship implementation guidelines carefully and stay in close contact with your year 4 class teacher. Students should actively experience real-world technical activities. Student need to be respectful of courtesies, attire, language, and other behaviors appropriate as an internee. Students who spend less than 5 days or less than 32 hours (shortages within 2 hours may be replenished by such as reporting) will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
1st Semester	1st Quarter	1st	Guidance (at the end of first semester)		Can understand the precautions of student training and the manners at the training site.	
		2nd	Intern (during summer vacation)		Can experience some of the technical activities at the training site.	
		3rd	Same as above		Same as above	
		4th	Same as above		Same as above	
		5th	Same as above		Same as above	
		6th	Same as above		Same as above	
		7th	Same as above		Same as above	
		8th	Same as above		Same as above	
	2nd Quarter	9th	Same as above		Same as above	
		10th	Same as above		Same as above	
		11th	Same as above		Same as above	
		12th	Same as above		Same as above	
		13th	Same as above		Same as above	
		14th	Same as above		Same as above	
		15th	Internship reporting (done at the beginning of the second semester, grades will be announced in the middle of the second semester)		Can report the outcome of the internship using slides.	
		16th	No final exam			
2nd Semester	3rd Quarter	1st				
		2nd				
		3rd				
		4th				
		5th				
		6th				
		7th				
		8th				

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

Evaluation Method and Weight (%)

	Training destination evaluation	Report	Presentation	Total
Subtotal	30	30	40	100
Basic Proficiency	0	0	0	0
Specialized Proficiency	30	30	40	100
Cross Area Proficiency	0	0	0	0

Akashi College		Year	2023	Course Title	Off-Campus Practical Training B
Course Information					
Course Code	5433		Course Category	Specialized / Elective	
Class Format	Practical training		Credits	School Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	4th	
Term	Year-round		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	All faculty of the department				
Course Objectives					
(1) Can experience some of the actual technical activities related to engineering. (2) Can use slides to report on the things they have experientially learned.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can experience some of the actual technical activities related to engineering collaboratively.		Can experience some of the actual technical activities related to engineering.		Cannot experience some of the actual technical activities related to engineering.
Achievement 2	Can use slides to report on the things they have experientially learned, and be understood by others.		Can use slides to report on the things they have experientially learned.		Cannot use slides to report on the things they have experientially learned.
Assigned Department Objectives					
Teaching Method					
Outline	Internship is mainly held in companies, government agencies, non-profit corporations, universities, etc. in the fields of electrical and electronic engineering and information engineering. Through this experience, students gain a sense of practical technology and can exert the knowledge in further learning.				
Style	Follow the guidance given by instructors at the internship destination.				
Notice	Read the internship implementation guidelines carefully and stay in close contact with your year 4 class teacher. Students should actively experience real-world technical activities. Student need to be respectful of courtesies, attire, language, and other behaviors appropriate as an internee. Students who spend less than 9 days or less than 72 hours (shortages within 4 hours may be replenished by such as reporting) will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input checked="" type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Guidance (at the end of first semester)	Can understand the precautions of student training and the manners at the training site.	
		2nd	Intern (during summer vacation)	Can experience some of the technical activities at the training site.	
		3rd	Same as above	Same as above	
		4th	Same as above	Same as above	
		5th	Same as above	Same as above	
		6th	Same as above	Same as above	
		7th	Same as above	Same as above	
		8th	Same as above	Same as above	
	2nd Quarter	9th	Same as above	Same as above	
		10th	Same as above	Same as above	
		11th	Same as above	Same as above	
		12th	Same as above	Same as above	
		13th	Same as above	Same as above	
		14th	Same as above	Same as above	
		15th	Same as above	Same as above	
		16th	No final exam		
2nd Semester	3rd Quarter	1st	Intern (during summer vacation)	Can experience some of the technical activities at the training site.	
		2nd	Same as above	Same as above	
		3rd	Same as above	Same as above	
		4th	Same as above	Same as above	
		5th	Same as above	Same as above	
		6th	Same as above	Same as above	
		7th	Same as above	Same as above	
		8th	Same as above	Same as above	

	4th Quarter	9th	Same as above	Same as above
		10th	Same as above	Same as above
		11th	Same as above	Same as above
		12th	Same as above	Same as above
		13th	Same as above	Same as above
		14th	Same as above	Same as above
		15th	Internship reporting (done at the beginning of the second semester, grades will be announced in the middle of the second semester)	Can report the outcome of the internship using slides.
		16th	No final exam	

Evaluation Method and Weight (%)				
	Training destination evaluation	Report	Presentation	Total
Subtotal	30	30	40	100
Basic Proficiency	0	0	0	0
Specialized Proficiency	30	30	40	100
Cross Area Proficiency	0	0	0	0

Akashi College		Year	2023		Course Title	Electromagnetics II A	
Course Information							
Course Code		5434		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials		1)小塚洋司著、新装版「電磁気学」、森北出版		2)後藤憲一、山崎修一共編、「詳解電磁気学演習」、共立出版			
Instructor		OHMUKAI Masato					
Course Objectives							
磁気に関する諸法則を理解し、説明することができる。							
Rubric							
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目[1]		磁気に関する諸法則を理解し、詳しく説明することができる。		磁気に関する諸法則を理解し、説明することができる。		磁気に関する諸法則を理解し、説明することができない。	
Assigned Department Objectives							
Teaching Method							
Outline		電気磁気学Iで学んだ静電界の知識を基礎として、主として時間変化のない磁気分野について学習する。					
Style		講義形式により重要な概念の解説を行い、より深く理解するために、周囲とのコミュニケーションを交えた自習をおこなう。最後には小テストを行い理解度チェックを実施する。					
Notice		3年の電気磁気学 I の知識がないと単位取得はかなり困難である。授業中は集中して理解に努め、わからないところを授業中に質問して解決していくプロセスが求められる。評価の対象としない欠席条件（割合）>1/3以上					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme	Goals			
1st Semester	1st Quarter	1st	クーロンの法則、ガウスの定理	クーロンの法則、ガウスの定理が理解できている。電荷と電界と電位の関係を説明できる。			
		2nd	誘電体とコンデンサ	誘電分極に関する物理量の関係が説明できる。コンデンサの物理量の関係が説明できる。			
		3rd	磁界と磁力線	磁界の概念を理解し、コイルが磁気2重層と透過であることが理解できる。			
		4th	アンペアの周回積分の法則、磁位	アンペアの周回積分の法則を用いて磁界が計算できる。磁気双極子モーメントを知る。			
		5th	ビオサバールの法則	微小電流による磁界の算出ができる。			
		6th	磁界による力	電流によって生じる力の表現を知る。			
		7th	復習	周囲の人とコミュニケーションを取りながら理解を深めることができる。			
		8th	確認テスト	60点を取得する。			
	2nd Quarter	9th	磁化と磁束密度	磁化の概念を理解し、磁束密度について知る。			
		10th	透磁率と磁化率と境界条件	透磁率と磁化率の概念を理解しその関係を知る。また境界条件について知る。			
		11th	磁極と減磁力と磁気シールド	磁極に関するクーロンの法則を理解すると共に、単極磁極が存在しないことを式で表せる。			
		12th	ベクトルポテンシャル	ベクトルポテンシャルの定義を書くことができる。またポアソンの式に対応する式を書ける。			
		13th	磁界のエネルギーとB-H曲線	磁界の持つエネルギーを書くことができ、B-H曲線について理解する。			
		14th	磁気回路	磁気回路に関する物理量を知る。電磁石が鉄を吸引する力を計算できる。			
		15th	復習	周囲の人とコミュニケーションを取りながら理解を深めることができる。			
		16th	期末試験	60点以上を取得する。			
Evaluation Method and Weight (%)							
	試験		平常点		Total		
Subtotal		50		50		100	
基礎的能力		0		0		0	
専門的能力		50		50		100	
分野横断的能力		0		0		0	

Akashi College		Year	2023		Course Title	Electromagnetics II B	
Course Information							
Course Code		5435		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials		1)小塚洋司著、新装版「電磁気学」、森北出版 2)後藤憲一、山崎修一共編、「詳解電磁気学演習」、共立出版					
Instructor		OHMUKAI Masato					
Course Objectives							
(1) インダクタンスと電磁誘導の概念について理解できる。 (2) 変位電流について知り、Maxwell 方程式をから導かれる諸性質について説明できる。							
Rubric							
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目[1]		自己インダクタンスと相互インダクタンスの概念を詳しく説明することができる。		自己インダクタンスと相互インダクタンスの概念を説明することができる。		自己インダクタンスと相互インダクタンスの概念を説明することができない。	
評価項目[2]		電磁誘導の法則について詳しく説明することができる。		電磁誘導の法則について説明することができる。		電磁誘導の法則について説明することができない。	
評価項目[3]		Maxwell 方程式から導かれる諸性質について詳しく説明できる。		Maxwell 方程式から導かれる諸性質について説明できる。		Maxwell 方程式から導かれる諸性質について説明できない。	
Assigned Department Objectives							
Teaching Method							
Outline		電気磁気学Iで学んだ静電界の知識を基礎とし、電気磁気学II-Aをさらに発展させ、時間変化が存在する場合について学習する。その後Maxwell方程式として電気磁気学の体系全体を身につけ、電磁波についても学ぶ。					
Style		講義形式により重要な概念の解説を行い、より深く理解するために、周囲とのコミュニケーションを交えた自習をおこなう。最後には小テストを行い理解度チェックを実施する。					
Notice		3年の電気磁気学 I 及び4年の電気磁気学II-Aの知識がないと単位取得はかなり困難である。授業中は集中して理解に努め、わからないところを授業中に質問して解決していくプロセスが求められる。評価の対象としない欠席条件（割合）>1/3以上					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	インダクタンスとノイマンの公式		自己インダクタンスと相互インダクタンスの定義を知りノイマンの公式を導ける。		
		2nd	インダクタンスの接続と結合係数およびエネルギー		インダクタンスの接続について理解し、結合係数の意味を知る。		
		3rd	電磁誘導法則とローレンツ力		ファラデーの電磁誘導の法則を理解し、ローレンツ力との関連を知る。		
		4th	電磁誘導法則の拡張		ファラデーの電磁誘導の法則の積分形と微分形の関係をしり、ローレンツ力を導出できる。		
		5th	自己誘導作用と回路に働く力		自己誘導作用について理解し回路に働く力を算出できる。		
		6th	表皮効果と渦電流		表皮効果について定量的に理解し、表皮厚について知る。		
		7th	復習		周囲の人とコミュニケーションを取りながら理解を深めることができる。		
		8th	確認テスト		6 0 点を取得する。		
	4th Quarter	9th	変位電流とマックスウェルの方程式		変位電流の概念を理解し、マックスウェルの4つの方程式が書けるようになる。		
		10th	波動方程式と電磁波の性質		波動方程式を導出でき、電磁波の性質を定量的に説明できる。		
		11th	電磁波の伝搬特性		電磁波伝搬に関する物理量について理解する。		
		12th	電磁波の境界条件		電磁波に関する境界条件を定量的に知る。		
		13th	平面波の反射と透過		電磁波の透過と反射に関する量的関係を知る。		
		14th	ポインティングベクトル		ポインティングベクトルの定義を知り、その性質を説明できる。		
		15th	復習		周囲の人とコミュニケーションを取りながら理解を深めることができる。		
		16th	期末試験		6 0 点以上を取得する。		
Evaluation Method and Weight (%)							
		試験		平常点		Total	
Subtotal		50		50		100	
基礎的能力		0		0		0	
専門的能力		50		50		100	

分野横断的能力	0	0	0
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Akashi College		Year	2023		Course Title	Applied Mathematics A	
Course Information							
Course Code		5436		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		4	
Textbook and/or Teaching Materials							
Instructor		OGASAWARA Hiromichi					
Course Objectives							
(1) Can make a deductive inference based on basic matters, including reading and writing logical sentences containing mathematical formulae.							
(2) Can perform basic calculations in Fourier analysis and apply them to engineering and physics on a basic level.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can accurately make a deductive inference based on basic matters.		Can make a deductive inference based on basic matters.		Cannot make a deductive inference based on basic matters.	
Achievement 2		Can fully perform basic calculations in Fourier analysis and fully apply them to engineering and physics on a basic level.		Can perform basic calculations in Fourier analysis and apply them to engineering and physics on a basic level.		Cannot perform basic calculations in Fourier analysis and apply them to engineering and physics on a basic level.	
Assigned Department Objectives							
Teaching Method							
Outline		In this course, we will learn the basics of Fourier analysis (including topics on the Laplace transform) based on the calculus and linear algebra learned so far. This is also applied to engineering and physics, so this class will also cover them, including basic applications.					
Style		Classes will be taught in a lecture style, and there will also be exercises and quizzes.					
Notice		Instead of memorizing theorems and formulae individually, carefully follow the development of discussions and the proof of theorems given in each lecture, so that you can understand it yourself. In problem exercises, do not try to remember the steps to solve a problem, but rather try to solve it yourself based on definitions and basic theorem and ideas. Also, if necessary, review the content learned during the previous years. The schedule of the midterm exam may be changed. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester	1st Quarter	1st	Review and supplementary lesson on calculus		Can handle the basic matters of calculus that's necessary for future learning.		
		2nd	Organize data		Can organize data.		
		3rd	Laplace transform		Can calculate and discuss based on the basic matters of the Laplace transform.		
		4th	Laplace transform		Can perform calculations and discussions related to the inverse Laplace transform.		
		5th	Application to vibration phenomena		Can apply the Laplace transform to mechanical vibration phenomena.		
		6th	Application to vibration phenomena Fourier series		Can apply the Laplace transform to AC circuits. Can calculate and discuss based on the basic matters of the Fourier series.		
		7th	Fourier series		Can calculate and discuss based on the basic matters of the Fourier sine / cosine series.		
		8th	Midterm exam Fourier series		Can calculate and discuss based on the basic matters of the complex Fourier series.		
	2nd Quarter	9th	Fourier series Fourier transform		Can handle the formulae related to Fourier series. Can extend Fourier series expansion for non-periodic functions.		
		10th	Fourier transform		Can calculate and discuss based on the basic matters of the Fourier transform.		
		11th	Fourier transform Wave equation		Can handle the formulae related to Fourier transform.		
		12th	Wave equation		Can handle wave phenomena based on the laws of motion and the methods of Fourier analysis.		
		13th	Heat equation		Can handle standing waves based on Fourier series. Can derive the heat equation.		
		14th	Heat equation		Can handle heat conduction phenomena based on the methods of Fourier analysis.		

		15th	Supplementary lesson on the Laplace transform	Can calculate and discuss matters related to delta function and convolution.	
		16th	Final exam		
Evaluation Method and Weight (%)					
		Examinations	Exercises / Quizzes	Attendance / Behavior	Total
Subtotal		40	30	30	100
Basic Proficiency		40	30	30	100
Specialized Proficiency		0	0	0	0
Cross Area Proficiency		0	0	0	0

Akashi College		Year	2023		Course Title	Applied Mathematics B	
Course Information							
Course Code		5437		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		4	
Textbook and/or Teaching Materials							
Instructor		OGASAWARA Hiromichi					
Course Objectives							
(1) Can make a deductive inference based on basic matters, including reading and writing logical sentences containing mathematical formulae.							
(2) Can perform basic calculations in vector calculus and apply them to engineering and physics on a basic level.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can accurately make a deductive inference based on basic matters.		Can make a deductive inference based on basic matters.		Cannot make a deductive inference based on basic matters.	
Achievement 2		Can fully perform basic calculations in vector calculus and fully apply them to engineering and physics on a basic level.		Can perform basic calculations in vector calculus and apply them to engineering and physics on a basic level.		Cannot perform basic calculations in vector calculus and apply them to engineering and physics on a basic level.	
Assigned Department Objectives							
Teaching Method							
Outline		In this course, we will learn the basics of vector calculus (including topics on complex functions of one variable) based on the calculus and linear algebra learned so far. This is also applied to engineering and physics, so this class will also cover them, including basic applications.					
Style		Classes will be taught in a lecture style, and there will also be exercises and quizzes.					
Notice		Instead of memorizing theorems and formulae individually, carefully follow the development of discussions and the proof of theorems given in each lecture, so that you can understand it yourself. In problem exercises, do not try to remember the steps to solve a problem, but rather try to solve it yourself based on definitions and basic theorem and ideas. Also, if necessary, review the content learned during the previous years. The schedule of the midterm exam may be changed. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme	Goals			
2nd Semester	3rd Quarter	1st	Review and supplementary lesson on vector calculations	Can handle the basic matters of vector calculations that's necessary for future learning.			
		2nd	Curves	Can handle curves using parameters.			
		3rd	Curves	Can handle curves using the arc length parameter.			
		4th	Line integrals	Can calculate and discuss based on the basic matters of line integrals.			
		5th	Line integrals Gradient	Can perform calculations and discussions related to Green's theorem. Can calculate and discuss based on the basic matters of the gradient vector.			
		6th	Gradient	Can perform calculations and discussions related to exact differential equations.			
		7th	Conservative forces and potential energy Surfaces and surface integrals	Can handle conservative forces and potential energy based on the methods of vector calculus. Can handle surfaces using parameters.			
		8th	Surfaces and surface integrals Midterm exam	Can perform calculations and discussions related to tangent planes.			
	4th Quarter	9th	Surfaces and surface integrals	Can calculate and discuss based on the basic matters of surface integrals.			
		10th	Derivative of vector fields and integral theorem	Can calculate and discuss based on the basic matters of volume integrals.			
		11th	Derivative of vector fields and integral theorem	Can calculate and discuss based on the basic matters of the divergence of a vector field and Gauss's theorem.			
		12th	Derivative of vector fields and integral theorem Overview of the theory of functions of a complex variable	Can calculate and discuss based on the basic matters of the rotation of a vector field and Stokes's theorem. Can calculate and discuss based on the basic matters of the functions of a complex variable.			

		13th	Overview of the theory of functions of a complex variable	Can calculate and discuss based on the basic matters of complex integrals.
		14th	Overview of the theory of functions of a complex variable	Can calculate and discuss based on the basic matters of singular points.
		15th	Application to electromagnetism	Can handle the basic matters of electromagnetism based on the methods of vector calculus.
		16th	Final exam	

Evaluation Method and Weight (%)

	Examinations	Exercises / Quizzes	Attendance / Behavior	Total
Subtotal	40	30	30	100
Basic Proficiency	40	30	30	100
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	0	0	0

Akashi College		Year	2023		Course Title	Applied Physics II	
Course Information							
Course Code		5438		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		NAKANISHI Hiroshi					
Course Objectives							
(1) Understand the basics of how to handle vibration phenomena in mechanics. (2) Understand the basics of optics. (3) Understand the basics of thermodynamics. (4) Conduct experiments and compile their content in a report.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can explain the basic concepts of vibration phenomena correctly and apply them to specific questions accurately.		Can explain the basic concepts of vibration phenomena and apply them to specific questions.		Cannot explain the basic concepts of vibration phenomena or apply them to specific questions.	
Achievement 2		Can explain the basic concepts of optics correctly and apply them to specific questions accurately.		Can explain the basic concepts of optics and apply them to specific questions.		Cannot explain the basic concepts of optics or apply them to specific questions.	
Achievement 3		Can explain the basic concepts of thermodynamics correctly and apply them to specific questions accurately.		Can explain the basic concepts of thermodynamics and apply them to specific questions.		Cannot explain the basic concepts of thermodynamics or apply them to specific questions.	
Achievement 4		Can give accurate insight into the experiments conducted by themselves and summarize the results appropriately in a report.		Can give insight into the experiments conducted by themselves and summarize the results in a report.		Cannot give insight into the experiments conducted by themselves or summarize the results in a report.	
Assigned Department Objectives							
Teaching Method							
Outline		Among the major fields in classical physics, this course will lecture on vibration in mechanics, optics, and thermodynamics. It will also involve mechanical measurement experiments.					
Style		Regular classes will be taught in a lecture style, and there will also be exercises and quizzes. In addition, there will be two classes to conduct experiments.					
Notice		Instead of learning each knowledge (the result of applying the law to a particular situation, how to solve the problem) by memorizing it individually, students should understand the laws that govern them (including being able to apply them to specific situations). Also, students should be aware of the relationships between the various laws, and try to understand concepts in physics systematically. Students can earn extra points by submitting voluntary assignments, and lose their points depending on their attitude, etc. in the class. The schedule of the experiment may be changed depending on the usage of the laboratory, etc. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	Several topics about vibration		Learn about damped vibration.		
		2nd	Several topics about vibration		Learn about forced vibration.		
		3rd	Several topics about vibration		Learn about coupled vibration.		
		4th	Basics in optics		Learn the basics of geometrical optics.		
		5th	Basics in optics		Learn the basics of light as a wave.		
		6th	Basics in optics		Learn about interference.		
		7th	Basics in optics		Learn about diffraction.		
		8th	Midterm exam				
	4th Quarter	9th	Mechanical experiments		Learn how to conduct and report experiments on the theme of mechanical measurement.		
		10th	Mechanical experiments		Learn how to conduct and report experiments on the theme of mechanical measurement.		
		11th	Basics in thermodynamics		Learn the basics of thermodynamics.		
		12th	Basics in thermodynamics		Learn how to handle specific heat.		
		13th	Basics in thermodynamics		Learn how to handle the Carnot cycle.		
		14th	Basics in thermodynamics		Learn about the second law of thermodynamics.		
		15th	Basics in thermodynamics		Learn about the irreversible change.		
		16th	Final exam				

Evaluation Method and Weight (%)				
	Examination	Exercise / Short test	Report	Total
Subtotal	54	36	10	100
Basic Proficiency	0	0	0	0
Specialized Proficiency	54	36	10	100
Cross Area Proficiency	0	0	0	0

Akashi College		Year	2023		Course Title	Transient Analysis on Electric Circuits	
Course Information							
Course Code		5439		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		SUYAMA Taikei					
Course Objectives							
Understand the basic questions and solutions for transient phenomena. Understand not only mathematical interpretation but also physical meaning. Three types of circuits will be covered: (1) Single-energy circuits (R-L circuits, R-C circuits) Understand and solve single energy circuits. (2) Multiple-energy circuits (R-L-C circuits) Multiple types of energy questions. Basic design knowledge of oscillation circuits. (3) Distributed-element circuits Understand the basic properties and the association with real-world lines such as communication lines and transmission lines.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Single-energy circuits (R-L circuits, R-C circuits): Understand the questions and solutions of a single-energy circuit, and solve real-world questions.		Single-energy circuits (R-L circuits, R-C circuits): Understand the questions and solutions of single-energy circuits.		Single-energy circuits (R-L circuits, R-C circuits): Do not understand the questions and solutions of single-energy circuits.	
Achievement 2		Multiple-energy circuits (R-L-C circuits): Can solve multiple types of energy questions, as well as the basic design of oscillation circuits.		Multiple-energy circuits (R-L-C circuits): Understand multiple types of energy problems, as well as the basic design of oscillation circuits.		Multiple-energy circuits (R-L-C circuits): Do not understand multiple types of energy problems or the basic design of oscillation circuits.	
Achievement 3		Distributed-element circuits: Understand the basic properties and the association with real-world lines such as communication lines and transmission lines, and solve the problems.		Distributed-element circuits: Understand the basic properties and the association with real-world lines such as communication lines and transmission lines.		Distributed-element circuits: Do not understand the basic properties and the association with real-world lines such as communication lines and transmission lines.	
Assigned Department Objectives							
Teaching Method							
Outline		In this course, we will clarify the difference between steady-state and transient phenomena, and learn about the transient phenomena of single- and multiple-energy circuits and distributed-element circuits. We will describe how to solve differential equations using Laplace transform for such transient phenomena.					
Style		Students who miss 1/3 or more of classes will not be eligible for evaluation. 100% on periodic exams. The minimum score for a pass will be 60 marks on the above exams. The criteria for a pass is the following three points: (1) Understand the basic questions and solutions for transient phenomena. (2) Understand and can analyze transient phenomena in single- and multiple-energy circuits and distributed-element circuits (3) Understand not only mathematical interpretation but also physical meaning.					
Notice		Since the course will mainly involve solving differential equations using Laplace transform, students need to study the Laplace transform and inverse conversions of various mathematical functions. Students who miss 1/3 or more of classes will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester	1st Quarter	1st	The basics of transient phenomena and question solving Describe the basic concepts of transient phenomena and provide learning guidance on how to handle them. Explain how to solve transient phenomena questions in a single-energy R-L circuit.		Can explain how to solve transient phenomena questions in a single-energy R-L circuit.		
		2nd	Transient phenomena in single-energy circuits (1) In general, transient phenomena in R-L or R-C circuits do not cause vibrations because only one of the electrostatic or magnetic field energies exists. Learn about such circuits.		Understand that a transient phenomenon in an R-L or R-C circuit does not cause vibration because only one of the electrostatic or magnetic field energies exists.		
		3rd	Transient phenomena in single-energy circuits (2) Following the previous week, explain how to solve basic questions using Laplace transforms that are helpful for handling initial values.		Use the Laplace transform to solve basic questions.		

2nd Quarter	4th	Transient phenomena in single-energy circuits (3) Learn about transient phenomena in single-energy circuits when an alternating electromotive force is applied.	Understand transient phenomena in a single energy circuit when an alternating electromotive force is applied.
	5th	Definition of Laplace transforms, theorem and inverse conversion of Laplace transforms Define Laplace transforms and provides guidance on how to use it to solve questions. Explain and do exercises on the various theorem and the inverse conversion of the Laplace transform that is necessary to solve actual questions.	Can use the various theorems and the inverse conversion of the Laplace transform.
	6th	The basics of circuit analysis using the Laplace transform For a basic circuit containing L or C, explain how to use the Laplace transform to determine the general solution for voltage and current.	Can find the general solution for voltage and current by using the Laplace transform.
	7th	Exercise Do exercises on transient phenomena in single-energy circuits.	Exercise Do exercises on transient phenomena in single-energy circuits.
	8th	Transient phenomena in multiple-energy circuits (1) In a circuit where magnetic field energy and electrostatic energy both exist, in other words, a circuit that consists of L, C, and R, the differential equations will become second order ones, and there will be cases in which vibrations occur and others not. Learn about such circuits.	Understand the basics of transient phenomena in multiple-energy circuits, and how to solve them using differential equations.
	9th	Transient phenomena in multiple-energy circuits (2) Learn about transient phenomena of discharge in multiple-energy LRC circuits when a DC electromotive force is applied.	Understand transient phenomena of discharge in multiple-energy LRC circuits when a DC electromotive force is applied.
	10th	Transient phenomena in multiple-energy circuits (3) Learn about transient phenomena when an alternating electromotive force is applied to a multiple-energy LRC circuit.	Understand transient phenomena when an alternating electromotive force is applied to a multiple-energy LRC circuit.
	11th	The basics of the steady-state and transient phenomena in distributed-element circuits. Derive the basic equations of distributed-element circuits during steady-state and transient phenomena and explain basic concepts and interpretation.	The basics of the steady-state and transient phenomena in distributed-element circuits. Can derive the basic equations of distributed-element circuits during steady-state and transient phenomena and explain basic concepts and interpretation.
	12th	Transient phenomena in distributed-element circuits (1) Introduce solutions using the Laplace transform for infinite, lossless, and strain-free lines.	Transient phenomena in distributed-element circuits (1) Understand the solution of infinite, lossless, and strain-free lines using the Laplace transform.
	13th	Transient phenomena in distributed-element circuits (2) Following the previous week, learn how to solve the transient phenomena in distributed-element circuits using the Laplace transform. Find the wave propagation speed on the line.	Learn how to solve the transient phenomena in distributed-element circuits using the Laplace transform. Can find the wave propagation speed on the line.
	14th	Exercise Do exercises on multiple-energy circuits and distributed-element circuits.	Exercise Do exercises on multiple-energy circuits and distributed-element circuits.
	15th	Total review	Total review
	16th	Final exam	Final exam

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Electronic Circuits II
Course Information						
Course Code	5440			Course Category	Specialized / Elective	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	4th	
Term	Second Semester			Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor	OHMUKAI Masato					
Course Objectives						
The goal is to achieve the following competencies: 1) Understand the characteristics of active elements, accurately understand the principles and properties of basic circuits using them, and can analyze these circuits. 2) Accurately understand the principles and properties of negative-feedback circuits and various amplifier circuits, and can analysis these circuits. 3) Accurately understand the principles and properties of circuits using arithmetic amplifiers, can analyze and design these circuits. 4) Accurately understand the principles and properties of oscillator, modulator, and demodulator circuits, and can analyze and design these circuits.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
Achievement 1	Understand the characteristics of active elements, accurately understand the principles and properties of basic circuits using them, and can analyze these circuits.		Understand the characteristics of active elements, understand the principles and properties of basic circuits using them, and can analyze these circuits.		Do not understand the characteristics of active elements or the principles and properties of basic circuits using them.	
Achievement 2	Accurately understand the principles and properties of negative-feedback circuits and various amplifier circuits, and can analysis these circuits.		Understand the principles and properties of negative-feedback circuits and various amplifier circuits, and can analysis these circuits.		Do not understand the principles and properties of negative-feedback circuits and various amplifier circuits.	
Achievement 3	Understand the principles and properties accurately, can analyze and design circuits using arithmetic amplifiers.		Understand the principles and properties, can analyze and design circuits using arithmetic amplifiers.		Do not understand the principles and properties of circuits using arithmetic amplifiers.	
	Accurately understand the principles and properties of oscillator, modulator, and demodulator circuits, and can analyze and design these circuits.		Understand the principles and properties of oscillator, modulator, and demodulator circuits, and can analyze and design these circuits.		Do not understand the principles and properties of oscillator, modulator, and demodulator circuits.	
Assigned Department Objectives						
Teaching Method						
Outline	We will explain the basics of analogue electronic circuits using active elements such as diodes, transistors, field effect transistors (FET), and operation amplifiers.					
Style	Classes will be held in a lecture style, mainly by explaining content following the textbook. Students will work on exercises and design assignments as appropriate.					
Notice	Students are required to learn in an active manner so they can design circuits themselves. If possible, they should construct the circuit they designed and study its operation. Students who miss 1/3 or more of classes will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan						
			Theme	Goals		
2nd Semester r	3rd Quarter	1st	Differential amplifier circuit 1	Understand the characteristics of differential amplifier circuits.		
		2nd	Differential amplifier circuit 2	Understand how to design differential amplifier circuits.		
		3rd	Voltage follower circuit	Understand the emitter follower and source follower circuits.		
		4th	Characteristic of an operation amplifier	Understand the characteristics of an operation amplifier.		
		5th	Basic amplifier circuit of an operation amplifier	Understand the basic design of an amplifier circuit using an operation amplifier.		
		6th	Application circuit of an operation amplifier	Understand various application circuits using operation amplifier.		
		7th	RC oscillator circuit	Understand the RC oscillator circuit used as a low-frequency oscillator.		
		8th	Midterm exam			
	4th Quarter	9th	LC oscillator circuit	Understand the LC and crystal oscillator circuits, such as Hartlev and Colpitts.		

	10th	Variable frequency oscillator circuit	Understand the oscillator circuit, which allows the oscillation frequency to be variable.
	11th	The basics of modulation and demodulation	Understand the relationship between modulation and demodulation and the features of AM, FM, etc.
	12th	Modulation circuit	Understand the AM and FM modulation schemes.
	13th	Demodulator circuit 1	Understand the AM demodulation scheme.
	14th	Demodulator circuit 2	Understand the FM demodulation scheme.
	15th	Power circuit	Understand the basics of power circuits used in electronic circuits and regulated power circuits.
	16th	Final exam	
Evaluation Method and Weight (%)			
	Examination	Other	Total
Subtotal	70	30	100
Basic Proficiency	0	0	0
Specialized Proficiency	70	30	100
Cross Area Proficiency	0	0	0

Akashi College		Year	2023		Course Title	Control Engineering I	
Course Information							
Course Code		5441		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		4th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		ENOMOTO Ryuji					
Course Objectives							
1. Can use transfer functions to represent the input/output characteristics of a system. 2. Understand the system representation using the block diagram. 3. Can explain transient properties using step response. 4. Can explain steady-state properties using the steady-state deviation. 5. Can explain frequency characteristics using a Bode plot. 6. Can explain the stability criterion of the feedback control system (Nyquist stability criterion).							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can derive a transfer function correctly.		Can explain how to derive a transfer function.		Do not know how to derive a transfer function.	
Achievement 2		Can simplify a block diagram consisting of series, parallel, and feedback bonds.		Can simplify serial, parallel, and feedback bonds in a block diagram.		Do not understand the components of a block diagram.	
Achievement 3		Can explain all the indicators for evaluating transient properties in step response.		Can explain some of the indicators for evaluating transient properties in step response.		Cannot explain the indicators for evaluating transient properties in step response at all.	
Achievement 4		Can derive the calculation method of steady-state deviation and can calculate the steady-state deviation accurately.		Know the calculation method (formula) of stead-state deviation.		Cannot explain steady-state deviation.	
Achievement 5		Can express the frequency response of a system obtained by combining the basic elements, in a Bode plot.		Can express the frequency response of some of the basic elements in a Bode plot.		Do not know a Bode plot.	
Achievement 6		Can determine the stability of the feedback control system accurately using Nyquist stability criterion.		Can explain the policy for stability determination using the Nyquist stability criterion.		Cannot explain the Nyquist stability criterion.	
Assigned Department Objectives							
Teaching Method							
Outline		While we are not very aware of in our daily lives, almost every device, including cars, air conditioners, and refrigerators, have a automatic control function. In this lecture, students will learn the basics of classical control, focusing on transfer functions and frequency response. In addition, students will deepen their understanding of the class content through exercises given as assignments as appropriate.					
Style		The basics of transfer functions, block diagrams, time response, frequency response, and stability will be introduced. In almost every lesson, students will be given an assignment to review the content of the class.					
Notice		By thinking and solving the exercises by themselves, the students become familiar with the calculations. Basic knowledge of Laplace conversion and reverse conversion is the premise of this course. Since this subject offer credits, students may not be eligible for passing depending on the submission and content of the assignments. The specific conditions will be shown during the lecture. This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for pre-study / review, and completing assignment reports. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	Introduction		Understand the objectives and the grading method, etc. of the course. Can explain how feedback control works.		
		2nd	Laplace transform and inverse transform		Can describe the expression of the Laplace transform. Can calculate the inverse Laplace transform based on partial fraction decomposition or completing the square.		
		3rd	Modeling with differential equations.		Can derive a model (differential equation) that represents the dynamic characteristics for a typical system.		
		4th	Transfer functions		Can derive a transfer function using the Laplace transform.		

		5th	Block diagrams	Can simplify series, parallel, and feedback bonds. Can simplify a block diagram consisting of the three bonds above.
		6th	Calculation of transient response	Can describe the expression of the Laplace transform. Can calculate the inverse Laplace transform based on partial fraction decomposition or completing the square.
		7th	The basic elements and their time response	Can explain the names of the six basic elements. Can explain the characteristics of the basic elements in terms of time response.
		8th	Evaluation metric of the time response	Can explain the evaluation metric of transient properties using step response. Can explain steady-state deviation. Can calculate steady-state deviation.
	4th Quarter	9th	What is frequency response	Can explain the definition of frequency response. Can explain the frequency transfer function and the correspondence between gain and phase.
		10th	Vector locus	Can explain the characteristics of the vector locus of basic elements. Can draw a vector locus
		11th	Bode plots	Can explain the characteristics of Bode plots of a differential, integral, first-order lag factor, and second-order lag factor.
		12th	Combining Bode plots	Can combine Bode plots.
		13th	Stability of a control system	Can explain the stability condition. Can determine the stability from the position of the poles of the transfer function.
		14th	Stability criterion of a feedback control system	Can determine the stability of a feedback control system using Nyquist stability criterion.
		15th	Review	Review the content of classes in the second half of the semester.
		16th	Final exam	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	English V
Course Information						
Course Code	5501			Course Category	General / Compulsory	
Class Format	Lecture			Credits	Academic Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	5th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials	(1) 早川幸治・番場直之「GIGA BOOSTER FOR THE TOEIC L&R TEST」KINSEIDO. (2) 瓜生豊・篠田重晃「Next Stage 英文法・語法問題」桐原書店.					
Instructor	HIRAKAWA Yuki					
Course Objectives						
1) 既習の高等学校学習指導要領に準じた新出語彙を習得して適切に運用できる。 2) 既習の高等学校学習指導要領に準じた文法を習得して適切に運用できる。 3) 既習の高等学校学習指導要領に準じた文構造を習得して適切に運用できる。 4) 平易な英語で書かれた文章を読み、その概要を把握し必要な情報を読み取ることができる。 5) 明瞭で聞き手に伝わるような発話ができるよう、英語の発音・アクセントの規則を習得して適切に運用できる。						
Rubric						
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目1	高等学校学習指導要領に準じた新出語彙を十分に習得して適切に運用できる。		高等学校学習指導要領に準じた新出語彙を習得して運用できる。		高等学校学習指導要領に準じた新出語彙を習得していない。	
評価項目2	高等学校学習指導要領に準じた文法や文構造を十分に習得して適切に運用できる。		高等学校学習指導要領に準じた文法や文構造を習得して運用できる。		高等学校学習指導要領に準じた文法や文構造を習得していない。	
評価項目3	高等学校学習指導要領に準じた文構造を十分に習得して適切に運用できる。		高等学校学習指導要領に準じた文構造を習得して適切に運用できる。		高等学校学習指導要領に準じた文構造を習得していない。	
評価項目4	平易な英語で書かれた文章を読み、その概要を十分に把握し必要な情報を読み取ることができる。		平易な英語で書かれた文章を読み、その概要を把握し必要な情報を読み取ることができる。		平易な英語で書かれた文章を読み、その概要を把握できない。	
評価項目5	英語の発音・アクセントの規則を十分に習得して適切に運用できる。		英語の発音・アクセントの規則を習得して適切に運用できる。		英語の発音・アクセントの規則を習得していない。	
Assigned Department Objectives						
Teaching Method						
Outline	(1) 国際化時代に活躍する技術者として必要な英語の基礎能力を身につけるために、特に「読む・聞く」技能を涵養する。 (2) 広く用いられる資格試験に出題される英文を題材とすることにより、実践的な英語運用能力の向上を目指す。					
Style	目標を達成するためには、次の自己学習が必要である。 ・英単語帳の新出単語について、該当単語、発音のみでなく、用いられている例文も産出可能とすること。 ・授業において学習した英文を復習し、復唱可能な状態になるまで練習すること。					
Notice	(1) 小テストは語彙を増やし、英作文力向上のための良い機会として、十分に活用すること。 (2) 理由なき遅刻や欠課による小テストの未受験は 0 点の扱いとする。 評価の対象としない欠席条件(割合) 1/4以上の欠課					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
1st Semester r	1st Quarter	1st	授業のガイダンス 授業の進め方・単語テスト・評価の方法などについて説明を行う。			
		2nd	Lesson 1. Travel	「旅行」に関する語句・表現を習得する		
		3rd	Lesson 2. Dining Out	「食事」に関する語句・表現を習得する		
		4th	Lesson 3. Daily Life	「日常生活」に関する語句・表現を習得する		
		5th	Lesson 4. Entertainment	「娯楽」に関する語句・表現を習得する		
		6th	Lesson 5. Purchasing	「買い物」に関する語句・表現を習得する		
		7th	Lesson 6. Offices	「オフィス」に関する語句・表現を習得する		
		8th	中間試験 中間試験を実施する。			
	2nd Quarter	9th	中間試験の返却と解説 中間試験の返却と解説を行う。	特に不正解の箇所を再学習し理解する。		
		10th	Lesson 7. Clients	「顧客」に関する語句・表現を習得する		
		11th	Lesson 8. Recruiting	「採用・求人」に関する語句・表現を習得する		
		12th	Lesson 9. Personnel	「人事」に関する語句・表現を習得する		
		13th	Lesson 10. Advertising	「広告・宣伝」に関する語句・表現を習得する		
		14th	Lesson 11. Media	「メディア」に関する語句・表現を習得する		
		15th	Lesson 12. Finance	「財務」に関する語句・表現を習得する		
		16th	期末試験			

Evaluation Method and Weight (%)

	試験	小テスト	その他	Total
Subtotal	70	30	0	100
基礎的能力	70	30	0	100
専門的能力	0	0	0	0
分野横断的能力	0	0	0	0

Akashi College		Year	2023		Course Title	Introduction to Japanese Language and Communication	
Course Information							
Course Code		5502		Course Category		General / Elective	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials		河野哲也『レポート・論文の書き方入門 第4版』（慶應義塾大学出版会）、適宜プリントを配布する。					
Instructor		TANGE Atsuko					
Course Objectives							
(1) 実用的な文章（手紙・メール）を、相手や目的に応じた体裁や語句を用いて作成できる。 (2) 報告・論文の目的に応じて、印刷物、インターネットから適切な情報を収集できる。 (3) 報告・論文を、整理した情報を基にして、主張が効果的に伝わるように論理の構成や展開を工夫し、作成することができる。							
Rubric							
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目1		問い合わせ・依頼の手紙・メールを効果的に作成できる。		文書・メールの、項目・構成・レイアウトを適切に示すことができる。		手紙・メールのレイアウトに難がある。	
評価項目2		PR文書・レジメ・論文の材料選択が適切である。		PR文書・レジメ・論文に材料を示すことができる。		PR文書・レジメ・論文の材料に不足がある。	
評価項目3		提案書・報告書・論文の構成・展開が適切・効果的である。		提案書・報告書・論文に構成・展開が見られる。		提案書・報告書・論文の構成・展開に難がある。	
Assigned Department Objectives							
Teaching Method							
Outline		エントリーシート・履歴書・レポート・論文など、目的の異なる様々な文章(文書) 表現について、それぞれの特徴や注意点等を概説する。各自、材料を事前に準備し、制限時間内で適切に書く練習を行い、明らかになった問題点を克服し、豊かで正しい表現力を獲得することを目的とする。					
Style		履歴書・PR文書・提案書・報告書・論文の基本的な作成方法・例示の講義と、その習熟・理解度を確認する設問に対する解答を授業内・授業外に作成・提出させ、評価する。					
Notice		本科目は、授業で保証する学習時間と、予習・復習及び課題レポート作成に必要な標準的な自己学習時間の総計が、90時間に相当する学習内容である。 評価の対象としない欠席条件(割合) 1/3以上の欠課					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester	1st Quarter	1st	オリエンテーション 1 授業の概要 2 テーマ・意図・構成・推敲について		文書作成に際して、箇条書き・符号・見出し・数値を用いて、適切にレイアウトできる。		
		2nd	履歴書・エントリーシート 1 データ部の書き方・自己PR部の書き方・材料収集・効果的表現（記号・構成など） 2 テーマ・事例の検討		各人の進路希望に沿った履歴書・エントリーシートを効果的に作成できる。		
		3rd	志望理由書・研究計画書 1 志望理由書について 2 研究計画書について		各人の希望進路に応じた志望理由と研究（キャリア）計画を適切な形式で効果的に作成できる。		
		4th	手紙・メール 1 手紙の書き方について 2 メールの書き方について		状況に応じた手紙・メールを作成することができる。		
		5th	小論文 1 1 テーマ：社会問題・時事問題 2 材料収集・構成		各テーマに応じ、適切な材料を用いて、論理的・効果的に小論文を作成することができる。		
		6th	小論文 2 1 テーマ：環境・科学技術 2 材料収集・構成		各テーマに応じ、適切な材料を用いて、論理的・効果的に小論文を作成することができる。		
		7th	報告書・レポート 1 1 別記書き 2 図表・レイアウト		別記書きの形式で図表を効果的に使い、レイアウトに優れた報告書・レジメを作成することができる。		
		8th	報告書・レポート 2 1 企画書・提案書 2 プレゼンテーション		企画書・提案書のレジメ・スライドを作成できる。効果的にプレゼンテーションできる。		
	2nd Quarter	9th	テーマ別問題点の整理 1 内容面の問題点 2 表現面の問題点		テーマ設定・材料選択・表現技術に優れた各種文書の作成ができる。		
		10th	アカデミックスキル 考え方・基礎的技術の整理		アカデミックスキルを理解し、自身の文章に反映することができる。		
		11th	研究テーマと問題設定 1 テーマ・問題の設定 2 自己分析		テーマを適切に設定し、有効な材料を用いて、文書を構成・展開できる。		

		12th	論文 1 1 計画書 2 構成	説得力のある計画書を作成できる。論文全体の構成表を作成できる。
		13th	論文 2 1 表記上の注意 2 文献表	注記・引用・文献表を適切に書くことができる。
		14th	論文 3 1 調査・研究・意義 2 中間報告・審査会・質疑応答	研究方法を明瞭に示し、研究成果の見通しを示すことができる。中間発表・卒業研究発表までの明確な計画表を作成できる。
		15th	課題と整理 1 問題点の課題と整理 2 まとめ	自身の研究計画を見直し、適切に改善できる。
		16th	期末試験	

Evaluation Method and Weight (%)				
	試験	課題	その他	Total
Subtotal	60	40	0	100
基礎的能力	60	40	0	100
専門的能力	0	0	0	0
分野横断的能力	0	0	0	0

Akashi College		Year	2023		Course Title	Law
Course Information						
Course Code	5503			Course Category	General / Elective	
Class Format	Lecture			Credits	Academic Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	5th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials	Do not use.					
Instructor	KUROKUI Yoshimi					
Course Objectives						
Understand basic legal concepts and legal thinking. Objectively understand what role the law is expected to play and what role it has played in addressing the challenges and problems that change with the times. The course also aims to provide students with an opportunity to understand that law is closely related to our daily lives, to develop an awareness of issues and opinions, and to acquire the ability to think legally.						
Rubric						
	Ideal Level			Standard Level		Unacceptable Level
Achievement 1	Thoroughly understand basic knowledge of law (the Constitution, the Penal Code, and the Civil Code, and International Law).			Have basic knowledge of law (the Constitution, the Penal Code, and the Civil Code, and International Law).		Do not have sufficient basic knowledge of law (the Constitution, the Penal Code, and the Civil Code, and International Law).
Achievement 2	Be able to objectively explain what role the law is expected to play and has played in addressing challenges and problems.			Understand what role the law is expected to play and has played in addressing challenges and problems.		Do not have sufficient understandings what role the law is expected to play and has played in addressing challenges and problems.
Achievement 3	Can accurately and legally examine various incidents and events occurring in modern society.			Can think legally to a certain extent when considering various incidents and events occurring in modern society.		Cannot think from a legal perspective when considering the various incidents and events occurring in modern society.
Assigned Department Objectives						
Teaching Method						
Outline	The purpose of this course is to learn the basic concepts of law and legal thinking. Students will confirm the role and function of law in politics, economy, and society, in connection with various events in daily life.					
Style	The course is centered on lectures using handouts and blackboard but the students are encouraged to speak actively in order to make the classes more interactive.					
Notice	The total learning content of this course is equivalent to 90 hours, which is the sum of the learning time guaranteed in class and the standard self-study time required for preparation, review, and assignment report writing. The basic concepts of law are systematically explained in this course, but the themes of each class and the order in which they are presented may be changed depending on the students' understanding. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning						
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
1st Semester	1st Quarter	1st	Guidance: What is law?	Learn about the concepts and classifications of laws.		
		2nd	History of law	Learn about the historic evolution of law.		
		3rd	Basic Principles of the Constitution	Understand the basic principles (popular sovereignty, respect for basic human rights, pacifism) as the fundamental principles of the Constitution at the top of all Japanese laws.		
		4th	Equal rights	Understand the basic concepts of equal rights.		
		5th	Civil liberties	Understand the basic concepts of civil liberties.		
		6th	Social rights	Understand the basic concepts of social rights.		
		7th	National governance organization	Understand Japan's governing institutions (Diet, Cabinet, and courts) and the relationship between them.		
		8th	Review of 1stQ	Review of 1stQ		
	2nd Quarter	9th	Penal Code	Learn about the function of the Penal Code and necessary conditions for a crime. Understand how an act is legally formed as a criminal offense.		
		10th	Civil Code	Learn the basic principles of property law and family law. Understand that my human promise in daily life can constitute a civil code agreement.		
		11th	Economy / Industry and Law	Learn consumer protection law, intellectual property law, etc.. Understand how the law guarantees relationships between various actors engaged in economic and industrial activities.		

		12th	Labor and law	Understand how workers' rights are guaranteed by law.
		13th	Social security / Social welfare and law	Understand how the law guarantees people's lives (medical care, pensions, welfare, etc.).
		14th	Information society and law	Understand how the law guarantees the individual's freedom to obtain information and regulates the abuse of misinformation and inappropriate information.
		15th	International society and law	Learn the basics of international law governing relations between states.
		16th	Final exam	Take the final exam (written test).

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	Philosophy
Course Information					
Course Code	5504		Course Category	General / Elective	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials	Hitoshi Akiyama et al., Cross-Cultural Understanding for Success in a Global Society, Jikkyo Shuppan Co.				
Instructor	ARAKAWA Hironori				
Course Objectives					
(1) Understand what ethics one should have as an engineer active in the world. (2) Understand the current fluid international situation. (3) Understand and explain the concept of national and international economies. (4) Understand the needs of consumers and the role of engineers in different cultures. (5) Understand what ethical issues engineers may face. (6) Acquire knowledge of intellectual property rights and understand their significance in manufacturing. (7) Understand how engineers should be positioned in modern society and what they should do.					
Rubric					
	Ideal Level	Standard Level		Unacceptable Level	
Achievement 1	Have a good understanding of what ethics one should have as an engineer working in the world.	Understand what ethics one should have as a world-class engineer.		Do not fully understand what ethics they should have as engineers who are active in the world.	
Achievement 2	Fully aware of the current international situation that is in flux.	Understands the current international situation in flux.		Do not understand the current international situation in flux.	
Achievement 3	Have sufficient knowledge of national and international economic concepts.	Have knowledge of national and international economic concepts.		Do not have knowledge of national and international economic concepts.	
Achievement 4	Have sufficient knowledge of the needs of consumers and the role of engineers in different cultures.	Have knowledge of the needs of consumers and the role of engineers in different cultures.		Do not have knowledge of the needs of consumers and the role of engineers in different cultures.	
Achievement 5	Have a good understanding of what ethical issues engineers may face.	Have a understanding of what ethical issues engineers may face.		Do not have a good understanding of what ethical issues engineers may face.	
Achievement 6	Acquire knowledge of intellectual property rights and fully understand their significance in manufacturing.	Acquire knowledge of intellectual property rights and understand their significance in manufacturing.		Do not have knowledge of intellectual property rights and fully understand their significance in manufacturing.	
Achievement 7	Have a good understanding of how they should be positioned in today's society and what they should do.	Understand how engineers should be positioned in today's society and what they should do.		Do not understand how engineers should be positioned in today's society and what they should do.	
Assigned Department Objectives					
Teaching Method					
Outline	In today's globalized society, engineers have a responsibility to society to properly apply science and technology based on their expertise. In this lecture, students will be introduced to the ethical and philosophical issues surrounding engineers in global society, and after understanding the basic concepts of social science and international sociology, students who are expected to be active globally as engineers in the future will select a topic related to international society and engineer ethics, and will independently research, present, and discuss the topic. The class focuses on research, presentation, and discussion on topics related to international society and ethics for engineers. The ultimate goal of this course is to help students acquire the knowledge of ethics and global issues necessary for engineers and researchers, and to actively cultivate the ability to approach various issues and society based on their own future perspectives.				
Style	The course will be read in a round-reading format using the textbooks. The participants will be divided into teams and each team will give a presentation on each topic. Other participants will discuss with the presenters. At the end of each class, students are required to submit a written summary of the class content and their opinions, which will be evaluated as a short report. In the end, each student will choose a theme based on the textbook/reference book he/she has chosen and conduct in-depth research, including fieldwork and surveys if possible. Based on the results of this research, students will be required to write a final thesis. In the presentation, students will be evaluated on their own research as well as their interpretation of the textbooks and class discourse, and therefore, preparation for reading each book is essential.				
Notice	The content of this course is a subject that changes from moment to moment according to social conditions. Students are expected to approach class with a daily interest in current events. Each presenter is required to prepare a resume for his/her topic, and the audience will be graded on the questions they ask about the presentation. Therefore, please be sure to read the relevant sections of the textbook for each presentation. Proactive participation is required. Absence conditions not subject to evaluation (percentage) 1/3 or more of the class				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning	<input checked="" type="checkbox"/> Aided by ICT	<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced		
Course Plan					
			Theme	Goals	

1st Semester	1st Quarter	1st	Why engineering ethics? Why is it necessary for those who aspire to be engineers to learn ethics? Clarify the links between engineers and ethics through today's social background, the codes of ethics established by the engineering academic societies, etc., and learn and confirm their significance.	Understand the links between engineers and ethics based on today's social background and the code of ethics.
		2nd	The space shuttle Challenger accident 1 Deal with the space shuttle Challenger accident, the most famous case in engineering ethics, and discuss the decisions made by the engineers and executives in the organization.	Understand the characteristics and relationships of the decisions made by the engineers and executives.
		3rd	The space shuttle Challenger disaster 2 Following the previous class, use the case of the Challenger accident as a guide and consider what responsibilities engineers have for making organization risk management function effectively.	Understand the responsibilities and abilities required of engineers for organization risk management.
		4th	The Tokaimura JCO criticality accident 1 Use the JCO criticality accident as an example to consider the significance of improvement activities that have supported the Japanese manufacturing industry, the challenges facing them, and how engineers should engage with them.	Understand the significance and challenges of improvement activities.
		5th	The Tokaimura JCO criticality accident 2 Following the previous class, use the JCO criticality accident to discuss group thinking, which collective organizations are prone to, and how technicians should deal with it to ensure safety and quality.	Learn the characteristics of group thinking and the abilities needed to deal with it and secure safety.
		6th	Whistleblowing 1 Discuss the purpose of the recently introduced whistleblower protection system, criticisms of the current laws, and the relationship between this system and engineers.	Acquire knowledge of the whistleblower protection system, and understand its issues.
		7th	Whistleblowing 2 Following the previous class, deal with whistleblowing. An increasing number of companies have established help desks, etc. as part of their efforts to enhance their compliance systems. Examine this trend's significance in the relationship between organizations and individuals.	Understand what needs to be kept in mind to ensure proper organizational behavior.
		8th	Product Liability Act Review the details of the Product Liability Act—which is said to be the most relevant law for engineers—and discuss that it is important for engineers to establish it as a manufacturing belief.	Gain appropriate knowledge of the Product Liability Act and become able to use it as a manufacturing belief.
	2nd Quarter	9th	Intellectual properties Confirm the significance of the patent, copyright, and other systems for technology development, and examine the issues, etc., facing them that accompany information technology development, etc.	Acquire knowledge of intellectual property rights and understand their significance in manufacturing.
		10th	The Bhopal disaster 1 Use the agricultural chemicals factory accident in Bhopal, India—the biggest industrial accident in history—as an example to discuss the further increasing problems associated with overseas industrial activities as globalization progresses.	Acquire knowledge of the issues faced in overseas industrial activities.
		11th	The Bhopal disaster 2 Based on the previous class, examine the fact that there is a need for engineers to take into account that technology development is deeply related to the interaction between social conditions, culture, history, and thoughts, etc., that surround it.	Deepen understanding of the previous class and learn effective methods for overseas industrial activities.
		12th	The Roppongi Hills revolving door accident 1 Introduces the activities of the Door Project, which took place after the revolving door accident, and discuss the ideas and significance of failure studies and topics such as Heinrich's law in risk management.	Acquire knowledge of failure studies and Heinrich's law.
		13th	The Roppongi Hills revolving door accident 2 Based on the previous class, discuss how engineers also have their own culture as engineers, and that it is important to pass down knowledge to overcome the problems that result from this.	Understand that in order to understand and use technology effectively, it is necessary to properly understand and communicate technology ideas.
		14th	Universal design Confirm that there is a political aspect to new technology development that gives birth to new power struggles and discrimination, whereas universal design is an attempt to democratize it.	Understand the concept of universal design and the systems necessary for achieving it.

		15th	The scope of engineering ethics New technology developments by engineers have had a variety of impacts in sectors such as information society and medical care. Consider the sort of relation that engineers should have to ethics in these other areas.	Understand the relationship between engineers and modern society and what their place in it should be.
		16th	final exam	

Evaluation Method and Weight (%)					
	Final Exam	Presentation in lecture	Comments and questions in lecture	Final Report	Total
Subtotal	40	15	10	35	100
Basic Proficiency	40	15	0	0	55
Specialized Proficiency	0	0	0	0	0
Cross Area Proficiency	0	0	10	35	45

Akashi College		Year	2023	Course Title	Biophysical Chemistry
Course Information					
Course Code	5505		Course Category	General / Elective	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	OGASAWARA Hiromichi				
Course Objectives					
(1) Learn how to examine chemical reactions occurring in life based on knowledge of physics and chemistry. (2) Learn how basic scientific knowledge of mathematics, physics, and chemistry is applied to understanding life, including the foundations of knowledge for considering in future that engineering technique affect the living body and environment.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Fully understand how to examine chemical reactions occurring in life based on physics and chemistry.		Understand how to examine chemical reactions occurring in life based on physics and chemistry.		Do not understand how to examine chemical reactions occurring in life based on physics and chemistry.
Achievement 2	Fully understand how basic knowledge is applied as life science.		Understand how basic knowledge is applied as life science.		Do not understand how basic knowledge is applied as life science.
Assigned Department Objectives					
Teaching Method					
Outline	Physical chemistry is a field of chemistry in which the structure, function (physical properties), and reaction of matters are elucidated using physical methods. In this field, biophysical chemistry is the division that deals with the phenomena occurring in life. In this course, we will study the chemical reactions that occur in life, with focus mainly on the energy flow and reaction rate.				
Style	Regular classes will be taught in a lecture style, and there will also be exercises and quizzes.				
Notice	Study by consciously thinking how knowledge of the basic scientific subjects (mathematics, physics, chemistry) that you have learned so far is helping to understand life and familiar phenomena related to it. The schedule of the midterm exam may be changed. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Guidance	Learn about the binding energy.	
		2nd	Energetics of non-living and living materials	Learn about the changes of matter and energy.	
		3rd	No class because of a tour trip.		
		4th	Energetics of non-living and living materials	Learn about the exchange of energy with matter in living bodies.	
		5th	Catabolism	Learn about the process of extracting energy from matter.	
		6th	Photosynthesis	Learn about the process by which plants use the energy of light to synthesize carbohydrates.	
		7th	Photosynthesis	Learn about photochemical reactions.	
		8th	Photosynthesis	Learn about the basic matters of electronic structure of molecules.	
	4th Quarter	9th	Midterm exam		
		10th	Chemical kinetics	Learn about the basic matters of chemical kinetics that's necessary for future learning.	
		11th	Enzymes	Learn about the basic matters of enzymes.	
		12th	Enzymes	Learn about the basic matters of proteins.	
		13th	Michaelis-Menten enzyme kinetics (overview)	Learn about the basic matters of Michaelis-Menten kinetics.	
		14th	Michaelis-Menten enzyme kinetics (details)	Learn about the inhibition of enzymes in Michaelis-Menten kinetics.	
		15th	Michaelis-Menten enzyme kinetics (details)	Learn about the inhibition of enzymes by acids and bases.	
		16th	Final exam		
Evaluation Method and Weight (%)					
	Examinations	Exercises / Quizzes	Attendance / Behavior	Total	
Subtotal	40	30	30	100	
Basic Proficiency	40	30	30	100	
Specialized Proficiency	0	0	0	0	

Cross Area Proficiency	0	0	0	0
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Akashi College		Year	2023	Course Title	Scientific Technology and the Environment
Course Information					
Course Code	5506		Course Category	General / Elective	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials	Hand out materials accordingly without using a textbook				
Instructor	IMAI Ryoichi				
Course Objectives					
(1) Learn the history of the technological development from ancient to modern. (2) Learn how the environmental destruction has occurred due to the technological development. (3) Learn the relationship between technology and environmental destruction and think about how technologists should work. (4) Be interested in other fields as well as engineering and can express opinions.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Fully understand the history of the technological development from ancient to modern.		Understand the history of the technological development from ancient to modern.		Do not understand the history of the technological development from ancient to modern.
Achievement 2	Fully understand how the environmental destruction has occurred due to the technological development.		Understand how the environmental destruction has occurred due to the technological development.		Do not understand how the environmental destruction has occurred due to the technological development.
Achievement 3	Can accurately think about how technologist should work based on the relationship between technology and environmental destruction.		Can think about how technologist should work based on the relationship between technology and environmental destruction.		Cannot think about how technologist should work based on the relationship between technology and environmental destruction.
Achievement 4	Be interested in other fields as well as engineering and can accurately express opinions.		Be interested in other fields as well as engineering and can express opinions.		Neither be interested in other fields as well as engineering nor can express opinions.
Assigned Department Objectives					
Teaching Method					
Outline	Food is essential for us to live, and it is the basis to produce our body, mind and intelligence. Now problems of environment, agriculture and food are often brought up as threatening our health and life. This is because the incidents that life is made light of often occur, including the accident of Fukushima No. 1 nuclear power plant by the Great East Japan Earthquake in 2011. Then in this lecture, students understand relationship between technology or science and environment from the viewpoint of history from ancient to modern, centered on agriculture, agricultural technology and agricultural science that produce food as well as engineering. In addition, we will touch on the engineering ethics.				
Style	Classes will be held in a lecture style. Liaison: Ogasawara				
Notice	Evaluations are given with a focus on presentation and attitude during class and submitting reports. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Introduction – What is farming ? –	Understand the significance and the method of this lecture and learn 'what is farming ?'	
		2nd	Ancient civilization and agriculture	Learn the relationship of the rise and fall of ancient civilizations and agriculture.	
		3rd	Rice-paddy cultivation in the Edo period in Japan	The Edo period is often said to have been the sustainable society. Especially cities in Japan are said to have been the cleanest in the world in those days. Then learn rice-paddy cultivation that was one of the secrets.	
		4th	The agricultural revolution in Europe –from three-field system to rotation system –	Learn the Agricultural revolution in Europe that was one of the preconditions of the Industrial Revolution.	
		5th	The Industrial Revolution in England and the establishment of the capitalistic economy	Understand the Industrial Revolution and the capitalistic economy. Learn other arguments that the economic growth rate of the U.K. was too low to be called 'Revolution'.	
		6th	The Meiji restoration and the establishment of the capitalistic economy in Japan	During the Meiji period, the western agricultural technologies were introduced into Japan. But they did not adapt to the climate and natural features of Japan. Then learn the development of agricultural technology in Japan in those days.	

		7th	Japanese agriculture from the Meiji period to the prewar age of the Showa period and various problems	Learn various agricultural problems from the Meiji period to the prewar age of the Showa period (disputes that occurred between landowners and tenant farmers) and the achievements of people that developed various agricultural technologies (seed selection with salt solution, the birth of Koshihikari and so on).
		8th	Midterm exam	
	4th Quarter	9th	The entire war system and Japanese agriculture – the diversion for armaments of not only iron but also many farm products –	Understand many farm products were diverted for armaments under the entire war system (konjac and Washi used to make balloon bombs and so on).
		10th	The entire war system and overseas territories possessed by Japan – farming in 'Manchuria' –	Learn realities of farming by Japanese immigrants that went to 'Manchuria' in order to realize the ideal farming and escape poverty in Japan.
		11th	War and agricultural science – general mobilization of not only engineering but also various studies –	Learn general mobilization of not only engineering but also various studies and technical experts under the entire war system.
		12th	The development of the Japanese agriculture after World War II	Learn the changes of Japanese agriculture and dietary environment under the rapid economic growth after World War II.
		13th	Current agriculture in Japan – agriculture, food and environment in the future –	Learn various problems that Japanese agriculture and food have today (depopulation, satiation, the detachment of food and agriculture, global warming, and so on).
		14th	Agriculture, food and nuclear power plant	Learn the reason why the nuclear power plant construction contributes to the depopulation of the regions. Think over whether 'the restoration of the Tohoku region' and 'nuclear power plant operation' go together.
		15th	The global warming and the role of nuclear power plant	Nuclear power plant is expected as an important clue to prevent global warming, but does it have the ability really? Think over that with various data, aim to have our own opinions.
		16th	Final exam	

Evaluation Method and Weight (%)

	Behavior	Report	Examination	Total
Subtotal	15	45	40	100
Basic Proficiency	15	45	40	100
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	0	0	0

Akashi College		Year	2023		Course Title	Sports Science I	
Course Information							
Course Code		5507		Course Category		General / Elective	
Class Format		Skill		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		GOTOH Takayuki,KOBAYASHI Yuki					
Course Objectives							
<ul style="list-style-type: none">Participate in classes to improve students' own health and physical strength. Also, have some level of self-discipline.Can take action to conduct sports safely. Also, recognizes the significance of collaborating and cooperating with the team and can take the necessary action to do so.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Actively participate in classes to improve their health and physical strength. Have a high level of self-discipline.		Participate in classes to improve their health and physical strength. Have some level of self-discipline.		Do not participate in classes. Do not strive to improve their health and physical strength. Have a poor level of self-discipline.	
Achievement 2		Actively participate in various sport practices and games, and are very competitive. Also have a great influence on games, etc.		Can participate in various sport practices and games.		Do not participate in various sport practices and games.	
Achievement 3		Understand and can play or take on the role of a leader.		Understand the role of a leader, but cannot play that role.		Do not understand the role of a leader. Also, never play that role.	
Assigned Department Objectives							
Teaching Method							
Outline		The goal of this course is for students to learn more about the fun and depth of sports so that they can build the habit of playing sports on a daily basis. This class requires an active and proactive attitude to participate. Students will split into groups and leaders will take the lead to plan, review, and implement the course content. Students can choose from: Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc					
Style		Students are encouraged to improve their skills through games based on the rules, how to play games, and the basic skills they learned in previous years. They are also encouraged to experience the fun of enhancing teamwork while collaborating and cooperating with your team with your leader in the center. Students should take the initiative in creating a safe and welcoming class, and the instructors support their effort.					
Notice		<ul style="list-style-type: none">Wear training wear and athletic shoes. If students fail to wear them, points will be deducted from their grade.Do not wear or bring accessories, watches, or any other unnecessary items. These are also eligible for grade deduction.Tardiness will be excused for the first 20 minutes. Students can participate in the class after 20 minutes, but their attendance will be marked as absent.If it is discovered that a student left class early without being excused (ditching class), their attendance for that class will be marked as absent, and their grade for previous classes will suffer a deduction equal to an absence.Students who miss 1/4 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester r	1st Quarter	1st	Guidance Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Understand the purposes and objectives of this course. Split into teams in each sport and select a leader.		
		2nd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		3rd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		4th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		5th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		6th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		
		7th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc		Can do warm-up and practice, play games, and reflect on the class, led by a leader.		

		8th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
	2nd Quarter	9th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Split into teams in each sport and select a leader.
		10th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		11th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		12th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		13th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		14th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		15th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		16th	No final exam	

Evaluation Method and Weight (%)

	Approach to a class	Practical skill	Leadership	Total
Subtotal	75	15	10	100
Basic Proficiency	75	0	0	75
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	15	10	25

Akashi College		Year	2023	Course Title	Sports Science II
Course Information					
Course Code	5508		Course Category	General / Elective	
Class Format	Skill		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	GOTOH Takayuki,ISHIDA Masami				
Course Objectives					
<ul style="list-style-type: none">Participate in classes to improve students' own health and physical strength. Also, have some level of self-discipline.Can take action to conduct sports safely. Also, recognizes the significance of collaborating and cooperating with the team and can take the necessary action to do so.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Actively participate in classes to improve their health and physical strength. Have a high level of self-discipline.		Participate in classes to improve their health and physical strength. Have some level of self-discipline.		Do not participate in classes. Do not strive to improve their health and physical strength. Have a poor level of self-discipline.
Achievement 2	Actively participate in various sport practices and games, and are very competitive. Also have a great influence on games, etc.		Can participate in various sport practices and games.		Do not participate in various sport practices and games.
Achievement 3	Understand and can play or take on the role of a leader.		Understand the role of a leader, but cannot play that role.		Do not understand the role of a leader. Also, never play that role.
Assigned Department Objectives					
Teaching Method					
Outline	The goal of this course is for students to learn more about the fun and depth of sports so that they can build the habit of playing sports on a daily basis. This class requires an active and proactive attitude to participate. Students will split into groups and leaders will take the lead to plan, review, and implement the course content. Students can choose from: Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc				
Style	Students are encouraged to improve their skills through games based on the rules, how to play games, and the basic skills they learned in previous years. They are also encouraged to experience the fun of enhancing teamwork while collaborating and cooperating with your team with your leader in the center. Students should take the initiative in creating a safe and welcoming class, and the instructors support their effort.				
Notice	<ul style="list-style-type: none">Wear training wear and athletic shoes. If students fail to wear them, points will be deducted from their grade.Do not wear or bring accessories, watches, or any other unnecessary items. These are also eligible for grade deduction.Tardiness will be excused for the first 20 minutes. Students can participate in the class after 20 minutes, but their attendance will be marked as absent.If it is discovered that a student left class early without being excused (ditching class), their attendance for that class will be marked as absent, and their grade for previous classes will suffer a deduction equal to an absence.Students who miss 1/4 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
2nd Semester r	3rd Quarter	1st	Guidance Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Understand the purposes and objectives of this course. Split into teams in each sport and select a leader.	
		2nd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		3rd	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		4th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		5th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		6th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	
		7th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.	

		8th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
	4th Quarter	9th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Split into teams in each sport and select a leader.
		10th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		11th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		12th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		13th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		14th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		15th	Baseball, softball, soccer, futsal, tennis, basketball, volleyball, badminton, table tennis, training, flying disc	Can do warm-up and practice, play games, and reflect on the class, led by a leader.
		16th	No final exam	

Evaluation Method and Weight (%)				
	Approach to a class	Practical skill	Leadership	Total
Subtotal	75	15	10	100
Basic Proficiency	75	0	0	75
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	15	10	25

Akashi College		Year	2023	Course Title	T O E I C I
Course Information					
Course Code	5509		Course Category	General / Elective	
Class Format	その他		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Year-round		Classes per Week	1	
Textbook and/or Teaching Materials	None				
Instructor	INOUE Hidetoshi				
Course Objectives					
1) The student will foster cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background. The student should acquire 430 or more points in the test, what shows that the students English knowledge fulfills the needs of everyday life and allows business communication within a limited range.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
1) cross-cultural understanding and adaptability	The student has fostered cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.		The student has fostered some cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.		The student has not fostered cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.
2) English knowledge	The students have acquired English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.		The students have acquired some English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.		The students have not acquired English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.
Assigned Department Objectives					
Teaching Method					
Outline	The ability to establish a problem and find the appropriate solution to this problem is a skill necessary at KOSEN (higher education institution). A skill required to live through the 21st century. The students that entered KOSEN need to acquire these skills at an early stage. In this course, the students will learn methods of self-learning and autonomously learning, and not "study" as they have learned at junior high school. Also, while cooperating with colleagues, the students will learn the process of problem discovery and resolution.				
Style	The credits are obtained according to tests results, no classes				
Notice	To apply for the credits is necessary the test scores, and the student should apply for the credits during the period stipulated by the students' affairs office. Applications without the test scores or after the application period will not be accepted. The indicator of English communication capability will be measured utilizing TOEIC (Test of English for International Communication), a test developed by the US Test and Development Public Institution (Educational Testing Service), which has the largest scale and know-how in the world. Through this test, the student will aim to improve his or her English language skills, and motivation to learn English. The test score is also useful for the students' careers.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			
		8th	No mid-term Exam		
	2nd Quarter	9th			
		10th			
		11th			
		12th			
		13th			
		14th			
		15th			
		16th	No end-term Exam		
2nd Semester	3rd Quarter	1st			
		2nd			
		3rd			
		4th			

		5th		
		6th		
		7th		
		8th	No mid-term Exam	
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th	No end-term Exam	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	T O E I C II
Course Information					
Course Code	5510		Course Category	General / Elective	
Class Format	その他		Credits	School Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Year-round		Classes per Week	2	
Textbook and/or Teaching Materials	None				
Instructor	INOUE Hidetoshi				
Course Objectives					
1) The student will foster cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background. The student should acquire 500 or more points in the test, what shows that the students English knowledge fulfills the needs of everyday life and allows business communication within a limited range.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
1) cross-cultural understanding and adaptability	The student has fostered cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.		The student has fostered some cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.		The student has not fostered cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.
2) English knowledge	The students have acquired English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.		The students have acquired some English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.		The students have not acquired English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.
Assigned Department Objectives					
Teaching Method					
Outline	The ability to establish a problem and find the appropriate solution to this problem is a skill necessary at KOSEN (higher education institution). A skill required to live through the 21st century. The students that entered KOSEN need to acquire these skills at an early stage. In this course, the students will learn methods of self-learning and autonomously learning, and not "study" as they have learned at junior high school. Also, while cooperating with colleagues, the students will learn the process of problem discovery and resolution.				
Style	The credits are obtained according to tests results, no classes				
Notice	To apply for the credits is necessary the test scores, and the student should apply for the credits during the period stipulated by the students' affairs office. Applications without the test scores or after the application period will not be accepted. The indicator of English communication capability will be measured utilizing TOEIC (Test of English for International Communication), a test developed by the US Test and Development Public Institution (Educational Testing Service), which has the largest scale and know-how in the world. Through this test, the student will aim to improve his or her English language skills, and motivation to learn English. The test score is also useful for the students' careers.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			
		8th	No mid-term Exam		
	2nd Quarter	9th			
		10th			
		11th			
		12th			
		13th			
		14th			
		15th			
		16th	No end-term Exam		
2nd Semester	3rd Quarter	1st			
		2nd			
		3rd			
		4th			

		5th		
		6th		
		7th		
		8th	No mid-term Exam	
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th	No end-term Exam	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	T O E I C Ⅲ
Course Information					
Course Code	5511		Course Category	General / Elective	
Class Format	その他		Credits	School Credit: 3	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Year-round		Classes per Week	3	
Textbook and/or Teaching Materials	None				
Instructor	INOUE Hidetoshi				
Course Objectives					
1) The student will foster cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background. The student should acquire 650 or more points in the test, what shows that the students English knowledge fulfills the needs of everyday life and allows business communication within a limited range.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
1) cross-cultural understanding and adaptability	The student has fostered cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.		The student has fostered some cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.		The student has not fostered cross-cultural understanding and cross-cultural adaptability by tackling exam questions that require knowledge of English and the English-speaking cultural background.
2) English knowledge	The students have acquired English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.		The students have acquired some English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.		The students have not acquired English knowledge that fulfills the needs of everyday life and allows business communication within a limited range.
Assigned Department Objectives					
Teaching Method					
Outline	The ability to establish a problem and find the appropriate solution to this problem is a skill necessary at KOSEN (higher education institution). A skill required to live through the 21st century. The students that entered KOSEN need to acquire these skills at an early stage. In this course, the students will learn methods of self-learning and autonomously learning, and not "study" as they have learned at junior high school. Also, while cooperating with colleagues, the students will learn the process of problem discovery and resolution.				
Style	The credits are obtained according to tests results, no classes				
Notice	To apply for the credits is necessary the test scores, and the student should apply for the credits during the period stipulated by the students' affairs office. Applications without the test scores or after the application period will not be accepted. The indicator of English communication capability will be measured utilizing TOEIC (Test of English for International Communication), a test developed by the US Test and Development Public Institution (Educational Testing Service), which has the largest scale and know-how in the world. Through this test, the student will aim to improve his or her English language skills, and motivation to learn English. The test score is also useful for the students' careers.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			
		8th	No mid-term Exam		
	2nd Quarter	9th			
		10th			
		11th			
		12th			
		13th			
		14th			
		15th			
		16th	No end-term Exam		
2nd Semester	3rd Quarter	1st			
		2nd			
		3rd			
		4th			

		5th		
		6th		
		7th		
		8th	No mid-term Exam	
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th	No end-term Exam	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	Overseas Training Ⅲ
Course Information					
Course Code	5512		Course Category	General / Elective	
Class Format	Practical training		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Year-round		Classes per Week	1	
Textbook and/or Teaching Materials					
Instructor	All faculty of the department				
Course Objectives					
(1) Can make efforts to increase knowledge and skills through participating in training overseas.					
(2) Can develop a broad perspective by participating in training in different cultures.					
(3) Can communicate with people involved in the local area using English, etc.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can fully make efforts to increase knowledge and skills through participating in training overseas.		Can make efforts to increase knowledge and skills through participating in training overseas.		Cannot make efforts to increase knowledge and skills through participating in training overseas.
Achievement 2	Can fully develop a broad perspective successfully by participating in training in different cultures.		Can develop a broad perspective by participating in training in different cultures.		Cannot develop a broad perspective by participating in training in different cultures.
Achievement 3	Can fully communicate with people involved in the local area smoothly using English, etc.		Can communicate with people involved in the local area using English, etc.		Cannot communicate with people involved in the local area using English, etc.
Assigned Department Objectives					
Teaching Method					
Outline	The objectives of this course are to develop the ability to think things from various perspectives and to communicate through a variety of training experiences overseas. The training can be carried out during summer vacation, etc. The number of days for the training must be more than five days. This course's content will amount to over 45 hours in total. These hours include training overseas, preliminary guidance (manner lesson, preliminary research on the training destination), debrief session, and self-study time for preparing reports to be submitted to relevant institutions, etc.				
Style	Pre-orientation, on-site training, and debriefing				
Notice	Students are required to keep in close contact with their class teacher or supervisor. During the training, students are required to actively engage and communicate with the local people and act appropriately as a trainee, including their clothing and language. No conditions for missing classes that will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
				<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			
		8th			
	2nd Quarter	9th			
		10th			
		11th			
		12th			
		13th			
		14th			
		15th			
		16th	No final exam		
2nd Semester	3rd Quarter	1st			
		2nd			
		3rd			
		4th			
		5th			
		6th			
		7th			

	4th Quarter	8th		
		9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th	No final exam	

Evaluation Method and Weight (%)			
	Report	Presentation	Total
Subtotal	50	50	100
Basic Proficiency	0	0	0
Specialized Proficiency	0	0	0
Cross Area Proficiency	50	50	100

Akashi College		Year	2023	Course Title	Intellectual Property Rights
Course Information					
Course Code	5513		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	MORISADA Yuji				
Course Objectives					
(1) Understand and can explain to others the systems of intellectual property rights in Japan and other countries (international and foreign). (2) Acquire the knowledge to demonstrate appropriate intellectual property management capabilities within an organization as a research and development officer in a university or company, and can take the lead within an organization. (3) Understand the flow of application procedures (in Japan and other countries), and understand which stage of the procedure they are in when communicating with a patent attorney or the Japan Patent Office (relevant organizations). (4) Understand the importance of investigation, and can decide whether to conduct all of the investigation by themselves or to ask an expert to do it. (5) Can acquire the computer literacy for doing the investigation they need, and actually implement it.					
Rubric					
	Ideal Level	Standard Level		Unacceptable Level	
Achievement 1	Understand and can explain to others the systems of intellectual property rights in Japan and other countries.	Understand and can explain to others the systems of intellectual property rights in Japan.		Cannot explain to others the system of intellectual property rights in Japan and other countries.	
Achievement 2	Acquire the knowledge to demonstrate appropriate intellectual property management capabilities within an organization, and can take the lead within an organization.	Can explain the knowledge to demonstrate appropriate intellectual property management capabilities within an organization.		Cannot explain the knowledge to demonstrate appropriate intellectual property management capabilities within an organization.	
Achievement 3	Understand the flow of application procedures and what stage of the process they are in when communicating with a patent attorney or the Japan Patent Office.	Understand the flow of application procedures.		Do not understand the flow of application procedures.	
Achievement 4	Understand the importance of investigation, and can decide whether to conduct all of the investigation by themselves or to ask an expert to do it.	Can understand the importance of investigation and can determine the need for investigation.		Do not understand the importance of investigation.	
Achievement 5	Can use the computer literacy necessary to conduct investigation themselves, and actually investigate.	Can explain the computer literacy necessary to conduct investigation themselves.		Cannot acquire the computer literacy necessary to conduct investigation themselves.	
Assigned Department Objectives					
Teaching Method					
Outline	1) Basic theory of intellectual property rights (patent rights, utility model rights, design rights, trademark rights, copyright, etc.) 2) Methodologies for intellectual property management for researchers and developers (focusing on patent rights) 3) Flow of application procedures, etc. (explain the flows from application to registration, and after registration) 4) Flow of international application procedures, etc. (explain respective organizations and the flow after application, focusing on the PCT international patent application system) 5) Matters related to investigation on intellectual property rights: Lectures and exercises (explain the purpose of investigating patents, utility models, designs, and trademarks, and research tools; also do search exercises using the online J-PlatPat platform). This course will be taught by instructors who have experience in the procedures and consultation services relating to intellectual property rights in general.				
Style	It involves lectures on patents, designs, copyrights, etc. The class will be carried out mainly with lectures, and there will be PC-based research exercises, etc. as appropriate.				
Notice	Students are expected to take this course with a sense of reality, imagining that there is a creation (invention, etc.) that they or their friend/acquaintance researched and developed, how they can protect it and pursue rights for it. Students should be interested in news related to intellectual property rights on a daily basis, and develop a habit of thinking. Students who miss 1/3 or more of classes will not be eligible for evaluation. The liaison for this course is the above-mentioned person.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
				<input checked="" type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	

1st Semester	1st Quarter	1st	Summary of intellectual property rights	Understand an overview of intellectual property rights.
		2nd	Patents I	Understand the outline of the patent system, its purpose, and the patent (registration) requirements, etc.
		3rd	Patents II	Understand how to judge novelty and inventiveness.
		4th	Patents III	Understand the process of creating a broad and strong patent invention from ideas.
		5th	Patents IV	Understand the flow of procedures and employee inventions.
		6th	Patents V / International patent application system and patent systems in other countries	Understand necessary of applying International patent.
		7th	Utility model I	Understand the outline of the utility model, its purpose, and its registration requirements, etc.
		8th	Investigating patents and utility models	Understand and implement methods for investigating patents and utility models.
	2nd Quarter	9th	Design rights I	Understand patents and utility models. Understand the outline of the design registration system.
		10th	Designs II	Understand the purpose of the design registration system, registration requirements, special design registration, the effectiveness of design rights, etc.
		11th	Trademarks	Understand the trademark precautions directly related to the case of creation of soy sauce with broth.
		12th	Copyrights I	Understand the outline of the copyright law (works, copyrights, moral rights, related rights, derivative works, copyright restrictions, etc.).
		13th	Copyrights II	Understand the infringement of rights, and copyright Q&A.
		14th	Unfair Competition Prevention Act, geographical Indications, etc.	Understand Unfair Competition Prevention Act, and geographical indications.
		15th	Investigation of design or trademark Summary of intellectual property rights	Understand and implement investigation of design or trademark. Understand the differences between intellectual property rights (patent, utility model, design, trademark, copyright)
		16th	Final exam	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Computer Simulation	
Course Information							
Course Code		5514		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		OHMUKAI Masato					
Course Objectives							
1. Can explain the reason why numerical calculations yield errors. 2. Can describe a solution method (algorithm) on basic math problems.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can explain the method so as to avoid major errors on numerical calculations		Can explain causes why major errors on numerical calculations occur.		Cannot explain the reasons why major errors on numerical calculations occur.	
Achievement 2		Can accurately explain a solution method (algorithm) for all specified problems.		Can explain an overview of the methods (algorithms) for finding solutions to some problems.		Cannot explain the method (algorithm) of finding solutions to problems.	
Assigned Department Objectives							
Teaching Method							
Outline		A simulation is the imitation of a phenomenon by reducing it into a model. The aim of this course is to conduct computer-based experiments on simple models of natural and social phenomena that are difficult to reproduce and observe, to identify the characteristics of the phenomenon and to deepen the understanding of the contents. In classes, we will introduce the basic concepts and the latest examples of modeling and simulation in the first half, and practice the methods to solve their own challenges by programming and explaining a simulator in the second half.					
Style		Classes are conducted through lectures and exercises. Lectures will be conducted through handouts. In addition to what students learned in classes, they will perform individual activities on assignments of their choosing. Exercises are supposed to build a system to help students in their own graduation research. Students will be evaluated on assignment progress and the work produced during the exercises, and presentations.					
Notice		As this course is built on the content of Data Structures and Algorithms, Computer Programming, and Probability and Statistics, it's recommended that students review these textbooks, materials, etc. as references during the classes. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester r	3rd Quarter	1st	Introduction		Understand the objectives and the grading method, etc. of the course.		
		2nd	Algorithms, calculations and recurrence relations		Understand time and space complexity of algorithms. Can derive (time) complexity of some algorithms. Can derive recurrence relations which give solutions of problems.		
		3rd	Repetitive methods		Can derive repetitive methods which give solutions of problems.		
		4th	Errors, loss of significance, data loss		Can explain the cause of phenomena that occurs in numerical calculations, such as truncation errors, loss of significance, data loss		
		5th	Nonlinear equations		Can explain the Newton method, the bisection method ,and false position method .		
		6th	Simultaneous equations 1		Can explain algorithms of Gaussian elimination and sweep out methods.		
		7th	Simultaneous equations 2		Can explain algorithms of Jacobi, Gauss-Seidel and SOR method.		
		8th	Exercise		Exercise on the contents of classes in the first half of the semester.		
	4th Quarter	9th	Eigenvalue		Can explain algorithms of Jacobi and the power methods for obtaining eigenvalues of matrices.		
		10th	Interpolation of functions		Can explain linear interpolation, Newton forward linear interpolation and lagrange linear interpolation.		
		11th	Method of least squares		Can explain the method of least squares.		

		12th	Numerical differentials	Can calculate first and second order numerical differentials with forward, central and backward formulas. Can calculate first order numerical differential with lagrange interpolation.
		13th	Numerical integrals	Can calculate numerical integrals with rectangle, trapezoidal and Simpson's rule.
		14th	Initial value problem and Boundary value problem of ordinary differential equations	Can explain algorithms of Euler, Heun's and Runge-Kutta method for the Initial value problem. Can explain an algorithm of finite-difference method for the boundary value problem.
		15th	Review	Review the content of classes in the second half of the semester.
		16th	Final exam	

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

Akashi College		Year	2023	Course Title	Graduation Thesis
Course Information					
Course Code	5515		Course Category	Specialized / Compulsory	
Class Format	Seminar		Credits	School Credit: 9	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Year-round		Classes per Week	前期:6 後期:12	
Textbook and/or Teaching Materials					
Instructor	All faculty of the department				
Course Objectives					
(1) Can set a research topic on their own by applying and integrating basic knowledge of engineering, and find and solve problems systematically and practically from a broader perspective. (2) Master data processing technologies and the theories and methods of information transfer, and can apply them to various design and theoretical analyses. (3) Can develop self-learning abilities to continuously explore things. (4) Can read and understand Japanese and English technical papers related to the research topic and use them for their own research. (5) Can summarize the research results obtained as technical papers, and convey them to others through a presentation to have a discussion.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Can set an appropriate research topic on their own by applying and integrating basic knowledge of engineering, and find and solve problems systematically and practically from a broader perspective.		Can set a research topic on their own by applying and integrating basic knowledge of engineering, and find and solve problems systematically and practically from a broader perspective.		Cannot set a research topic on their own by applying and integrating basic knowledge of engineering, or find and solve problems systematically and practically from a broader perspective.
Achievement 2	Deeply master data processing technologies and the theories and methods of information transfer, and can apply them to various design and theoretical analyses.		Master data processing technologies and the theories and methods of information transfer, and can apply them to various design and theoretical analyses.		Cannot master data processing technologies and the theories and methods of information transfer, or apply them to various design and theoretical analyses.
Achievement 3	Can develop self-learning abilities to continuously and accurately explore things		Can develop self-learning abilities to continuously explore things.		Cannot develop self-learning abilities to continuously explore things.
	Can read and deeply understand Japanese and English technical papers related to the research topic and use them appropriately for their own research.		Can read and understand Japanese and English technical papers related to the research topic and use them for their own study.		Cannot read Japanese and English technical papers related to the research topic, or understand and use them for own research.
	Can summarize the research results obtained as technical papers, and accurately convey them to others through a presentation to have a deep discussion.		Can summarize the research results obtained as technical papers, and convey them to others through a presentation to have a discussion.		Cannot summarize the research results obtained as technical papers, or convey them to others through a presentation to have a discussion.
Assigned Department Objectives					
Teaching Method					
Outline	The aim of this class is to understand and analyze issues in their research topics based on the results of the learning up to the 4th year and the basic knowledge gained through Preliminaries to Graduation Thesis, and solve problems voluntarily and continuously by taking appropriate approach. Another aim is to convey research results accurately to others through papers and presentations.				
Style	Graduation Thesis class is conducted by several faculty members (laboratories). Students will work on document research, experiments, simulations, examinations, etc. under the guidance of their supervisor at one of these laboratories.				
Notice	They are expected to frequently discuss research results with their supervisor. If they cannot conduct research during the hours of Graduation Thesis class, transfer to other hours with permission from the supervisor. Students who spend less than 202.5 hours on research will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Graduation research	Can independently conduct document research, experiments, simulations, examination, etc. under the supervisor.	
		2nd	Same as above	Same as above	
		3rd	Same as above	Same as above	
		4th	Same as above	Same as above	
		5th	Same as above	Same as above	

2nd Semester		6th	Same as above	Same as above
		7th	Same as above	Same as above
		8th	Same as above	Same as above
	2nd Quarter	9th	Same as above	Same as above
		10th	Same as above	Same as above
		11th	Same as above	Same as above
		12th	Same as above	Same as above
		13th	Same as above	Same as above
		14th	Same as above	Same as above
		15th	Same as above	Same as above
		16th	No final exam	
		1st	Graduation research	Can independently conduct document research, experiments, simulations, examination, etc. under the supervisor.
		2nd	Preparation for the interim presentation of the graduation research	Can create posters and handouts to use in the interim presentation of the graduation research.
		3rd	Interim presentation of the graduation research	Can present the research results so far using posters.
		4th	Graduation research	Can independently conduct document research, experiments, simulations, examination, etc. under the supervisor.
		5th	Same as above	Same as above
		6th	Same as above	Same as above
		7th	Same as above	Same as above
		8th	Same as above	Same as above
		9th	Same as above	Same as above
		10th	Writing graduation thesis	Can compile the results of the graduation research and write a graduation thesis.
		11th	Same as above	Same as above
		12th	Same as above	Same as above
		13th	Preparation for the graduation research presentation	Can create a resume to hand out in the graduation research presentation.
		14th	Same as above	Can create slides to use in the graduation research presentations.
		15th	Graduation research presentation	Can use slides to present the results of the graduation research orally and answer questions appropriately.
		16th	No final exam	

Evaluation Method and Weight (%)

	Initiatives	Interim report	Graduation thesis	Graduation meeting for presenting research papers	Total
Subtotal	10	20	50	20	100
Basic Proficiency	0	0	0	0	0
Specialized Proficiency	10	20	50	20	100
Cross Area Proficiency	0	0	0	0	0

Akashi College		Year	2023	Course Title	Probability and Statistics
Course Information					
Course Code	5516		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	HAMADA Yukihiro				
Course Objectives					
[1] Can organize 1- and 2-dimensional data. [2] Understand the concept of probability and can calculate the probability of an event. [3] Understand the concept of probability distribution and can calculate the amount of samples. [4] Understand the concepts of statistics and can calculate basic statistics. [5] Can make statistical estimates. [6] Can perform statistical tests.					
Rubric					
		Ideal Level	Standard Level	Unacceptable Level	
Achievement 1		Can correctly calculate mean, variance, covariance, and correlation coefficient and create a histogram.	Can calculate mean, variance, covariance, and correlation coefficient and create a histogram.	Cannot calculate mean, variance, covariance, and correlation coefficient and create a histogram.	
Achievement 2		Can correctly calculate the probability and conditional probability of an event, and determine the independence of the event correctly.	Can calculate the probability and conditional probability of an event, and determine the independence of the event.	Cannot calculate the probability and conditional probability of an event, and determine the independence of the event.	
Achievement 3		Can correctly calculate the probability of an event under binomial distribution, Poisson distribution, and normal distribution.	Can calculate the probability of an event under binomial distribution, Poisson distribution, and normal distribution.	Cannot calculate the probability of an event under binomial distribution, Poisson distribution, and normal distribution.	
Achievement 4		Understand samples and populations and can correctly calculate sample mean, sample variance, and unbiased variance.	Understand samples and populations and can calculate sample mean, sample variance, and unbiased variance.	Do not understand samples and populations and cannot calculate sample mean, sample variance, and unbiased variance.	
Achievement 5		Can accurately make point estimation and interval estimation.	Can make point estimation and interval estimation.	Cannot make point estimation and interval estimation.	
Achievement 6		Can accurately test the population mean and the population variance.	Can test the population mean and the population variance.	Cannot test the population mean and the population variance.	
Assigned Department Objectives					
Teaching Method					
Outline	The purpose of the probabilities and statistics is to identify the pattern from various coincidence that occurs around us, explain what happened based on the pattern, and estimate the whole from the part. In this course, students will learn the basics of probability theory and statistics.				
Style	Each week, the class will alternate between explanation and exercise about the content you will learn for the week.				
Notice	This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for review and completing assignment reports. There will be two assignments, and both of them must be submitted by the due date. One of the assignments involves programming in C. Students should have a prior knowledge of linear algebra and calculus. Try to solve the questions or exercise problems yourself and score it against the answer. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT	<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Course guidance and 1-dimensional data 1/2	Understand the objectives and grading method of the course. Can create a frequency distribution table and a histogram of the data.	
		2nd	1-dimensional data 2 of 2	Can calculate mean, median, mode, variance, and standard deviation of the data.	
		3rd	2-dimensional data	Can calculate the correlation coefficient and regression line of 2-dimensional data.	
		4th	Discrete probability	Can explain the meaning and nature of trials, events, and probability.	
		5th	Conditional probability and Bayes' theorem	Can calculate conditional probability and determine whether two events are independent. Also, can explain Bayes' theorem.	

		6th	Probability variables and distribution	Can explain discrete probability variables and discrete probability distributions. Also, can explain the sequential probability variables and the probability density function.
		7th	Mean and variance of probability variables	Can calculate mean and variance of probability variables.
		8th	Midterm examination It is given during class.	
	2nd Quarter	9th	Binomial distribution and Poisson distribution	Can explain the binomial distribution and Poisson distribution and can calculate their means and distributions.
		10th	Normal distribution	Can explain and use normal distribution. Also, can explain the relationship between binomial distribution and normal distribution.
		11th	Sample distribution	Can explain population, sample, sample mean, sample variance, unbiased-variance, the law of large numbers, and central limit theorem.
		12th	Central limit theorem	Can explain normal population and central limit theorem.
		13th	Various probability distributions	Can explain the chi-squared distribution and t-distribution.
		14th	Estimation and test 1 of 2	Can perform interval estimation of population mean when the population variance is known and unknown. Also, can explain what we claim by statistical tests.
		15th	Test 2 of 2	Can perform two-tailed and one-tailed tests for the population mean when the population variance is known and unknown.
		16th	Final examination	

Evaluation Method and Weight (%)

	Examination	Task	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	20	0	0	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	20	0	0	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Information Theory
Course Information						
Course Code	5517			Course Category	Specialized / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	5th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials	使用しない(適宜資料を配布する)。					
Instructor	NAKAI Yuichi					
Course Objectives						
(1) 情報の量はどのように定義されるか、またその妥当性はどうかを説明できる。 (2) 様々な情報源の定義、各々の情報源のエントロピーの意味を理解し、それを導出できる。 (3) 符号の種類と符号が満たすべき条件を理解し、平均符号長とその限界を導出できる。 (4) Shannonの第一定理とその意義を理解する。 (5) 通信路とは何かでありどのような種類があるか。またどのような形式で表現できるのかを理解する。 (6) Shannonの第二定理の意義を理解する。						
Rubric						
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目1	情報の量はどのように定義されるか、またその妥当性はどうかを説明できる。		情報の量はどのように定義されるか、またその妥当性はどうかを説明できる。		情報の量はどのように定義されるか、またその妥当性はどうかを説明できない。	
評価項目2	様々な情報源の定義、各々の情報源のエントロピーの意味を理解し、それを導出できる。		様々な情報源の定義、各々の情報源のエントロピーの意味を理解し、それを導出できる。		様々な情報源の定義、各々の情報源のエントロピーの意味を理解できない。	
評価項目3	符号の種類と符号が満たすべき条件を理解し、平均符号長とその限界を導出できる。		符号の種類と符号が満たすべき条件を理解し、平均符号長とその限界を導出できる。		符号の種類と符号が満たすべき条件、平均符号長とその限界を理解できない。	
評価項目4	Shannonの第一定理とその意義を説明できる。		Shannonの第一定理とその意義を説明できる。		Shannonの第一定理とその意義を説明できない。	
評価項目5	通信路とは何かでありどのような種類があるか、またどのような形式で表現できるのかを具体的に説明できる。		通信路とは何かでありどのような種類があるか、またどのような形式で表現できるのかを説明できる。		通信路とは何かでありどのような種類があるか、またどのような形式で表現できるのかを説明できない。	
評価項目6	Shannonの第二定理の意義を説明できる。		Shannonの第二定理の意義を説明できる。		Shannonの第二定理の意義を説明できない。	
Assigned Department Objectives						
Teaching Method						
Outline	C.E. Shannonを創始者とする情報理論における成果は現代生活においてなくてはならないものとなっている。本講義では通信システムにおいて、情報を「速く」かつ「正確に」伝送するために必要な知識について説明する。前半では情報の定量化から始まりShannonの第一定理までを説明する。後半は通信路の定義から始まりShannonの第二定理について述べる。					
Style	スライドを用いた講義形式で授業を行う。練習問題を課すので、自分の理解の程度を確認するために積極的に取り組むこと。					
Notice	確率、統計の知識を前提で講義を行うのでこれらの事項に関してよく理解しておくこと。 評価の対象としない欠席条件(割合) 1/3以上の欠課					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan						
			Theme	Goals		
1st Semester	1st Quarter	1st	通信システムのモデル	情報理論で想定する通信システムのモデルについて説明し、情報の定量化ができる。		
		2nd	無記憶情報源とエントロピー	最も単純な情報源である無記憶情報源の説明と情報源の内部構造を探る手がかりとなるエントロピーについて説明できる。		
		3rd	マルコフ情報源とエントロピー	現実の情報源により近いマルコフ情報源の説明とそのエントロピーの導出ができる。		
		4th	符号とは	符号の定義を行い、符号が満たすべきいくつかの条件について説明できる。平均符号長の定義と瞬時に復号可能な符号の平均符号長の限界について説明できる。		
		5th	Shannonの第一定理	Shannonの第一定理の式とその意義についての説明できる。		
		6th	Huffman符号	コンパクト符号を構成できる符号化法としてHuffman符号を構成できる。		
		7th	通信路	通信路の定義、その表現方法について説明できる。		
		8th	中間試験			
	2nd Quarter	9th	相互情報量	通信路を介して伝送される情報について定義される相互情報量について説明できる。		
		10th	様々な通信路	雑音のない通信路、確定的通信路、通信路の縦続接続および縮退通信路について説明できる。		

		11th	通信路容量	相互情報量の考察から導かれる通信路容量の定義を説明できる。
		12th	通信路の信頼性向上	通信路を介しての情報伝送において信頼性を向上させる方法について説明できる。
		13th	誤り率と判定規則	通信路における誤り率を小さくするための判定規則について説明できる。
		14th	Shannonの第二定理	二元対称通信路に対するShannonの第二定理を説明できる。
		15th	通信路符号化	いくつかの通信路符号化について、その原理を説明できる。
		16th	期末試験	

Evaluation Method and Weight (%)

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

Akashi College		Year	2023	Course Title	Compiler
Course Information					
Course Code	5518		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	MIURA Kinya				
Course Objectives					
<p>The aim of this course is to gain the knowledge necessary to develop the compiler and to gain a better understanding of the programming language and the execution of the program.</p> <p>The specific goals are:</p> <p>[1] To understand the theoretical fundamentals and methods of lexical analysis</p> <p>[2] To understand the theoretical fundamentals and methods of syntactic analysis.</p> <p>[3] To understand the methods of semantic analysis and code generation.</p> <p>Learn these techniques to develop your compiler creation skills. By learning the theoretical fundamentals of these methods, acquire the basic ability to design programming language and its compiler, and increase practical programming skills through a deeper understanding of the execution of the program.</p>					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Understand the theoretical basis and methods of lexical analysis and can write a program of lexical analysis precisely.		Understand the theoretical basics and methods of lexical analysis mostly, and can write a program of lexical analysis mostly.		Do not understand the theoretical basis and methods of lexical analysis, and cannot write a program of lexical analysis.
Achievement 2	Understand the theoretical basics and methods of syntactic analysis and can write a program of syntactic analysis precisely.		Understand the theoretical basics and techniques of parsing mostly, and can write a program of syntactic analysis mostly.		Do not understand the theoretical fundamentals and techniques of syntactic analysis, and cannot write a program of syntactic analysis.
Achievement 3	Understand semantic analysis and code generation methods, and can write a program of semantic analysis and code generation precisely.		Understand semantic analysis and code generation techniques mostly and can write a program of semantic analysis and code generation mostly.		Do not understand semantic analysis and code generation techniques, and cannot write a program of semantic analysis and code generation.
Assigned Department Objectives					
Teaching Method					
Outline	When writing programs, it is common to use a programming language that is highly human-readable (a high-level language). The compiler is a software that converts programs written in such a high-level language into a language (machine language) that the CPU can interpret and execute. In this course, we will lecture students various theories about the syntax and semantics of programming languages and the various methods that have been developed based on them for converting programming languages into machine languages.				
Style	The lecture is mainly based on the content of textbook, but should be supplemented with handouts if required. Also, tasks will be assigned as appropriate. We have a practical training on 15th week. The contact person is Yukihiro Hamada.				
Notice	Before taking the lectures, it is desirable for students to study microcomputers (assembly language), programming II, data structures and algorithms, discrete mathematics (finite automata, and formal language theory), or equivalent subjects. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	
				<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Compiler overview	Can explain the theoretical model of the compiler, the general compilation process, and the structure of the compiler.	
		2nd	Lexical analysis 1 of 3	Can handle regular expressions (RE) and finite automaton (FA) as the theoretical basis of the compiler's lexical analysis).	
		3rd	Lexical analysis 2 of 3	Can construct a finite automaton that accepts lexical structures expressed in regular expressions.	
		4th	Lexical analysis 3 of 3	Can explain the lexical analysis program using state transition tables.	
		5th	Grammar (Formal language theory) 1 of 2	Can handle formal language theory, in particular the context-free grammar (CFG) commonly used in syntax definitions of programming language. Can also explain BNF, extended BNF, and syntax diagrams.	

		6th	Grammar (Formal language theory) 2 of 2	Concepts in formal language theory: Can explain the derivation of the symbolic column, the deriving of the leftmost/rightmost column, the parsing tree, the ambiguity of the grammar, etc.
		7th	Midterm exam It is given during class.	
		8th	Syntactic analysis 1 of 3	Can explain recursive downward parsing, especially LL(1) parsing. Can also solve the problem of left recursion.
	2nd Quarter	9th	Syntactic analysis 2 of 3	Understand and can explain LR parsing.
		10th	Syntactic analysis 3 of 3	Can explain how to handle ambiguous grammar and errors.
		11th	Semantic analysis 1 of 2	Can explain the semantics analysis and how to map names to the objects that represent in the language (name resolution). Can also explain scopes and namespaces.
		12th	Semantic analysis 2 of 2	Can explain the handling of forward references, type checking, type conversion, and error handling.
		13th	Code generation 1 of 2	Define a model for a specific execution environment and can explain the generation of code corresponding to function calls. Can also explain how to allocate storage area for local variables, etc.
		14th	Code generation 2 of 2	Can explain how to generate codes for various statements and expressions.
		15th	Practical training	Can create a simple language processing system using "bison" and "flex".
		16th	Final exam	

Evaluation Method and Weight (%)

	Examination	Task	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	20	0	0	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	20	0	0	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Software Engineering	
Course Information							
Course Code		5519		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		TSUCHIDA Takayuki					
Course Objectives							
[1] Can explain the process of software-centric system development. [2] Can explain the process of designing a system according to user requirements. [3] Can explain the need for project management and its methods (WBS, PERT chart, etc.). [4] Can explain the need for quality control using quantitative index values.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can fully explain the process of software-centric system development.		Can explain the process of software-centric system development.		Cannot explain the process of software-centric system development.	
Achievement 2		Can fully explain the process of designing a system according to user requirements.		Can explain the process of designing a system according to user requirements.		Cannot explain the process of designing a system according to user requirements.	
Achievement 3		Can fully explain the need for project management and its methods (WBS, PERT chart, etc.).		Can explain the need for project management and its methods (WBS, PERT chart, etc.).		Cannot explain the need for project management and its methods (WBS, PERT chart, etc.).	
		Can fully explain the need for quality control using quantitative index values.		Can explain the need for quality control using quantitative index values.		Cannot explain the need for quality control using quantitative index values.	
Assigned Department Objectives							
Teaching Method							
Outline		The instructor who have been developing and researching software in a company will take advantage of their experience to teach in class. The basics of software development in theory will be taught using textbooks, also the actual developments at the field will be introduced.					
Style		Classes, exercises and the actual developments at the field					
Notice		As the members performing group work will be drawn randomly from students who had registered to the course, and it involves knowledge from the first and second semester, it is important to be careful not to miss classes as well as the days of group work. Students who miss 1/3 or more of classes will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning							
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
1st Semester	1st Quarter	1st	The nature and development of software		Can raise at least one aspect of software development and its challenges and give reason.		
		2nd	Software development process		Can list several development process models and their characteristics.		
		3rd	Request Analysis		Can talk about the relationship and usefulness of demand analysis and prototyping.		
		4th	Software design		Can talk about the dependencies between modules with low and high module binding, and can provides examples of low module binding.		
		5th	Programming and testing		Can talk about programming techniques to prevent error contamination and techniques to improve test efficiency.		
		6th	Testing and Maintenance		Can come up with measures to ensure maintainability and explain them.		
		7th	Group work		Engage in group work assignment related to the content taught in week 6 of the first half of the semester.		
		8th	Midterm exam		Check understanding of the content from first half of the semester.		
	2nd Quarter	9th	Object orientation 1		Can explain things around me using the expressions class and instance.		
		10th	Object orientation 2		Can talk about the characteristics of object-oriented programming. Can talk about the importance and difficulty of software reuse.		
		11th	Design pattern 1		Can explain the basic concept of design pattern.		
		12th	Design pattern 2		Can explain the concept of design pattern.		

		13th	Project Management, Quality control	Can state the importance of project management. Can talk about quality control techniques.
		14th	Development size and estimate of software	Can talk about the method for estimating the size of software development.
		15th	Group work	Engage in group work assignment related to the content taught in week 6 of the second half of the semester.
		16th	Final exam	Check understanding of the content from second half of the semester.

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Information Network
Course Information						
Course Code	5520			Course Category	Specialized / Compulsory	
Class Format	Lecture			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	5th	
Term	First Semester			Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor	INOUE Kazunari					
Course Objectives						
The overall goal is to understand the basics of network technology, and the individual goal is to acquire the following abilities. 1) Network history, TCP / IP protocol 2) Technology that constitutes a LAN 3) IP packets and routing 4) Control method by TCP and UDP 5) Network security and encryption						
Rubric						
		Ideal Level	Standard Level		Unacceptable Level	
Achievement 1		Fully understand the history of networks and TCP / IP communication protocols.	Understand the history of networks and TCP / IP communication protocols.		Cannot understand the history of networks and TCP / IP communication protocols.	
Achievement 2		Fully understand the topology and transmission method for building a LAN.	Understand the topology and transmission method for building a LAN.		Cannot understand the topology and transmission method for building a LAN.	
Achievement 3		Fully understanding of Ethernet frames and forwarding, IP packets and routing.	Understanding of Ethernet frames and forwarding, IP packets and routing.		Cannot understanding of Ethernet frames and forwarding, IP packets and routing.	
Assigned Department Objectives						
Teaching Method						
Outline	Learn the basics of the information networks. Learn the analog signal digitization and the transmission methods. Understand the topology for LAN construction, OSI reference and TCP / IP, and learn the various communication protocols. Learn the network security. In this subject, faculty members who have practical experience in developing routers and other network devices will give lectures and exercises.					
Style	With the goal of understanding the basics of network technology regarding LAN construction, the Internet, and security, lectures and exercises will be held from the 1st to the 15th week.					
Notice	Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
1st Semester r	1st Quarter	1st	The history of networks and the transition of communication methods will be explained.		Understand that the history of networks and the transition of communication methods will be explained.	
		2nd	Digitization, coding and compositing of analog signals will be described. Specific examples of digital transmission and serial interface will be described.		Understand that the Digitization, coding and compositing of analog signals will be described. Specific examples of digital transmission and serial interface will be described.	
		3rd	The difference from the circuit switching method to the packet switching method and the technologies that make up the Internet will be explained.		Understand that the difference from the circuit switching method to the packet switching method and the technologies that make up the Internet will be explained.	
		4th	The technical outline of each layer that composes the OSI reference model and TCP / IP will be explained.		Understand that the technical outline of each layer that composes the OSI reference model and TCP / IP will be explained.	
		5th	Explain the flow of encapsulation and decapsulation on the transmitting side and receiving side, and L2 / L3 / L4 / L7 processing.		Understand that the flow of encapsulation and decapsulation on the transmitting side and receiving side, and L2 / L3 / L4 / L7 processing.	
		6th	Various network topologies such as bus type and star type will be described. The technology that configures the LAN, switches / routers, will be explained.		Understand that the various network topologies such as bus type and star type will be described. Also, understand that the technology that configures the LAN, switches / routers, will be explained.	
		7th	Describes Ethernet frame formats, headers, payloads, trailer roles and MAC addresses.		Understand that the Ethernet frame formats, headers, payloads, trailer roles and MAC addresses.	
		8th	Mid-term exam		Mid-term exam	
	2nd Quarter	9th	Describes the IP packet format, address setting method, and classful address. The routing table and route control will be described.		Understand that the the IP packet format, address setting method, and classful address. The routing table and route control will be described.	

		10th	Describes the definition of IP address, classful / classless, and calculation of the number of networks / hosts.	Understand that the definition of IP address, classful / classless, and calculation of the number of networks / hosts.
		11th	The DHCP server function will be described. Technology to help IP Describe the ICMP echo request / response. The ARP between L2 / L3 will be explained.	Understand that the DHCP server function will be described. Technology to help IP Describe the ICMP echo request / response. The ARP between L2 / L3 will be explained.
		12th	The connectionless type / connectionless type protocol will be described. The port number and passing to L7 will be explained.	Understand that the connectionless type / connectionless type protocol will be described. The port number and passing to L7 will be explained.
		13th	Describes services and protocols for using the Internet such as DNS, Web. Server and HTTP.	Understand that the services and protocols for using the Internet such as DNS, Web. Server and HTTP.
		14th	Explain the ethics, network security and encryption technology for handling threats and information hidden in networks.	Understand that the ethics, network security and encryption technology for handling threats and information hidden in networks.
		15th	The mobile communication and the access network will be described. Describe the IoT (Internet of Things) and non-IP networks.	Understand that the mobile communication and the access network will be described. Also, understand that the IoT (Internet of Things) and non-IP networks.
		16th	Final exam	Final exam

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Advanced Information Networks	
Course Information							
Course Code		5521		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		INOUE Kazunari					
Course Objectives							
<p>This subject explains various control technologies of network routers that are designed to achieve high speed, low power consumption, and stability and high reliability. Furthermore, the goal is to understand advanced applications for networks in recent years such as edge computing and virtualization .</p> <p>1) Understand the roles and applications of L2/L3/L4 and L7 correctly. 2) Understand the functions and control techniques of routers correctly. 3) Understand state-of-the-art technologies such as virtualization and information-centric network, and can learn about future challenges and solutions.</p>							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Fully understand the roles and applications of L2/L3/L4 and L7.		Understand the roles and applications of L2/L3/L4 and L7.		Do not fully understand the role and application of L2/L3/L4 and L7.	
Achievement 2		Fully understand the functions and controls of network routers.		Understand the function and control of network routers.		Do not understand the function and control of network routers.	
Achievement 3		Fully understand advanced technologies, such as virtualization.		Understand advanced technologies such as virtualization.		Do not understand the advanced technologies, such as virtualization.	
Assigned Department Objectives							
Teaching Method							
Outline		In addition to understanding communication protocols correctly, it is important to understand the control and processing of routers and other related equipment in order to build and operate a network. The discussion will cover the current network challenges, such as faster speeds and lower power consumption, and new technologies, such as virtualization to solve these problems. This lecture is conducted in a lecture style by a teacher with practical experience in development of network routers.					
Style		Classes are held in lecture style from week 1 to week 15.					
Notice		Students should have the knowledge of the year 3 class Introduction to Computer Engineering and year 5 class Information Network. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	TCP/IP protocol and technologies at each layer Describe the emergence of TCP/IP and the technologies of networking.		TCP/IP Overview Understand the advent of TCP/IP and networking technologies.		
		2nd	Performance and characteristics of networks Describe terminologies of network such as bandwidth and throughput, congestion, and so on.		Performance and characteristics of networks Understand terminologies of network such as bandwidth and throughput, congestion, and so on.		
		3rd	Optical and electrical signals Describe fiber optics, transceivers, and SerDes (Serializer/Deseralizer).		Optical and electrical signals Understand fiber optics, transceivers, and SerDes (Serializer/Deseralizer).		
		4th	LAN configuration and control technology Describe wired and wireless connectivity and remote access using SSH.		LAN configuration and control technology Understand wired and wireless connectivity and remote access using SSH.		
		5th	Lower layer protocol Describe forwarding and routing protocols		Lower layer protocol Understand forwarding and routing protocols		
		6th	Upper layer protocol Describe examples of TCP/UDP and applications.		Upper layer protocol Understand examples of TCP/UDP and applications.		
		7th	Time synchronization by NTP Describe the Network Time protocol.		Time synchronization by NTP Understand the Network Time protocol.		
		8th	Midterm exam		Midterm exam		
	4th Quarter	9th	Network equipment Describe the configuration and control of switches/routers and servers.		Network equipment Understand the configuration and controls of switches/routers and servers.		
		10th	FIB and routing Describe tree search and longest match search.		FIB and routing Understand tree search and longest match search.		

		11th	Routing tables and ternary state memory Describe routing and access control using TCAM.	Routing tables and ternary state memory Understand routing and access control using TCAM.
		12th	Fragmentation and Packet Buffers (including assignments to submit) Describe packet assembly and queuing at routers.	Fragmentation and packet buffers Understand packet assembly and queuing at routers.
		13th	Internet technology Describe access network to ISP connectivity and autonomous systems (AS).	Internet technology Understand access network to ISP connectivity and autonomous systems (AS).
		14th	Network virtualization Describe network virtualization technologies such as VLAN, VPN, and OpenFlow.	Network virtualization Understand network virtualization technologies such as VLAN, VPN and OpenFlow.
		15th	Wireless networks and the Internet of Things Describe wireless LAN, Bluetooth (LE) and LPWA (Low Power Wide Area).	Wireless networks and the Internet of Things Understand LPWA (Low Power Wide Area) from wireless LAN, Bluetooth (LE).
		16th	Final exam	Final exam

Evaluation Method and Weight (%)			
	Examination	Submission assignment	Total
Subtotal	80	20	100
Basic Proficiency	0	0	0
Specialized Proficiency	80	20	100
Cross Area Proficiency	0	0	0

Akashi College		Year	2023		Course Title	Database
Course Information						
Course Code		5522		Course Category	Specialized / Compulsory	
Class Format		Lecture		Credits	School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term		Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor		TSUCHIDA Takayuki				
Course Objectives						
In this course, we will lecture on basic methods for the construction and operation of databases. Specifically, we will deal with data modeling for storing real-world data in a computer, methods for storing and retrieving large amounts of data efficiently in a computer, languages for defining and querying data, and controls for enabling simultaneous use of data among many users. We will understand the concepts of databases and learn the knowledge and skills of key areas of expertise, such as designing for data management and programming with database language SQL. The goal is to enable students to flexibly address data management issues and design a specific system that will adapt to the challenges using expertise and expertise in the field of expertise.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Achievement 1		Understand how to model data and to store and retrieve large amounts of data efficiently in a computer, and can design a system.		Understand how to model data and to store and retrieve large amounts of data efficiently in a computer.		Do not understand how to model data and to store and retrieve large amounts of data efficiently in a computer.
Achievement 2		Can perform programming by database language SQL and operate a system.		Understand programming by database language SQL and the system.		Do not understand programming with database language SQL, and the system.
Assigned Department Objectives						
Teaching Method						
Outline		It is important to keep programs and data separate and under control. Learn about technologies that make data available for long-term, stable use by understanding the widely used database system as a way to manage data independently. In this course, students will learn what data is, what the database manages, and how it is implemented. The lectures will be conducted by a teacher who engaged in the research and development of middleware (database) at Hitachi, Ltd. Research & Development Headquarters for five years.				
Style		Classes and exercises				
Notice		It is a prerequisite that a student to master at least one programming language. Knowledge of data structures and algorithms is desirable. Students who miss 1/3 or more of classes will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning						
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
2nd Semester r	3rd Quarter	1st	Outline of the database	Understand the role of the database, the academic use and the business use of the database, , and the significance and application of the database.		
		2nd	Basic theories for databases	Understand basic theories for databases, such as sets and their operations, tuples, and relations of sets		
		3rd	Relational data model and relational algebra	Understand the relational data model, which is the data model utilized by RDBMS, and the relational algebra for data manipulation.		
		4th	SQL(1)	Understand the basics of SQL, the language used in the general use of RDBMS. Understand basic usage of SQL including data registration, deletion, and update of relations, and simple queries.		
		5th	SQL(2)	Can write SQL, a language that is used for general usage of RDBMS. Understand the select statement that queries in SQL.		
		6th	Internal configuration of the RDBMS	Understand the internal structure of RDBMS and the indexes, which are the mechanisms for quick access of the data of interest from a large amount of data.		
		7th	Query optimization	Understand query optimization in RDBMS to generate execution plans for executing SQL queries.		
		8th	Midterm exam	Midterm exam		
	4th Quarter	9th	Normalization	Understand possible data inconsistencies when updating relationships and the normalization of the relationships as the solution.		

		10th	Data Modeling	Understand data modeling, a work to determine the scope of the database in the real world, determining the appropriate data structure by extracting and organizing data items, and .
		11th	SQL(3)	Can write SQL, a language that is used for general usage of RDBMS. Understand the advanced select statement for SQL queries.
		12th	Transaction and concurrency control	Understand the concept of transactions, the units in which an application accesses a database, and the basic theory for successful execution of multiple transactions.
		13th	NoSQL databases and big data (1)	Understand the basics of NoSQL, a new database developed to handle big data. Understand NoSQL in general and the data model and execution control theory to handle big data.
		14th	NoSQL databases and big data (2)	Learn the basics of NoSQL, a new database developed to handle big data. Understand parallel distributed processing techniques for large data and distributed processing techniques on NoSQL.
		15th	Using RDBMS from programs	Understand how to use RDBMS from programs written in a generic programming language.
		16th	Final exam	Final exam

Evaluation Method and Weight (%)

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

Akashi College		Year	2023		Course Title	Artificial Intelligence	
Course Information							
Course Code		5523		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		MIURA Kinya					
Course Objectives							
(1) Understand the methods of search and apply them to various problems. (2) Understand the various knowledge expressions and the reasoning methods that use them. (3) Understand neural networks and machine learning on them.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Fully understand and apply search techniques to a variety of problems.		Generally understand search techniques and can apply them to a number of problems.		Do not understand the search technique and cannot apply it to problems.	
Achievement 2		Fully understand and can explain the various knowledge expressions and the inference methods that use them.		Generally understand and can explain the various knowledge expressions and the reasoning methods that use them.		Do not fully understand and cannot explain the various knowledge expressions and reasoning methods that use them.	
Achievement 3		Fully understand and can explain neural networks and machine learning on them.		Generally understanding and can explain neural networks and machine learning on them.		Do not understand enough about neural networks and machine learning on them, and cannot explain them.	
Assigned Department Objectives							
Teaching Method							
Outline		Describe the basic concepts and techniques of artificial intelligence. In particular, the focus will be on various search techniques and their use to solve problems, knowledge expressions and their use, neural networks and machine learning on them.					
Style		The lecture is mainly based on the content of textbook, but should be supplemented with handouts if required. Also, tasks will be assigned as appropriate. The contact person is Yukihiro Hamada.					
Notice		It is desirable to have a thorough understanding of the content of year 4 classes Discrete Mathematics and Data Structure and Algorithms. Also, it is desirable for students to have acquired any programming language, since it is necessary to have an algorithmic understanding of various methods. This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for pre-study / review, and completing assignment reports. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester r	3rd Quarter	1st	Artificial intelligence overview		Can explain outline of artificial intelligence research by viewing the history of artificial intelligence research from several perspectives.		
		2nd	Problem solving and search		Can explain problem solving as state space search. Understand the steps of vertical and horizontal searching and apply them to problem solving.		
		3rd	Limited branch search		Understand the cost-aware search and can find the best solution using the limited branch search.		
		4th	Heuristic search		Understand and conduct search using estimated costs to the goal (heuristic search).		
		5th	Search for And/Or graphs		Understand that problem-solving by problem-breaking methods and game-state-space exploration by two-person becomes a search for And/Or graphs and can apply it to problem-solving.		
		6th	Knowledge representation using predicate logic		Understand the syntax of predicate logic and use logical expressions to express propositional knowledge.		
		7th	Proof system based on the fusion principle		Understand the proof system based on the principle of fusion and the secular form, which is one of the standard forms of predicate logic, and can carry out deductive and proving using it.		
		8th	Midterm exam It is given during class.				
	4th Quarter	9th	Production System		Understand and can explain the basic operation of a production system.		

		10th	Semantic Network and Frame	Understand and can explain knowledge representation and simple reasoning using a semantic network. Also, understand and can explain knowledge representation using a frame.
		11th	Perceptron	Understand the basic operation of neurocells and can explain the operation and learning of the perceptron.
		12th	Backpropagation	Conceptually understand and can explain the learning by backwards propagation of errors in a feed-forward network.
		13th	Auto encoder	Understand and can explain how auto-encoders (self-encoding units) work and the pre-learning of feed-forward networks using auto-encoders.
		14th	Recurrent Neural Network	Conceptually understand and can explain the behavior of the recurrent neural network and its special case of the Hopfield Network .
		15th	Deep learning	Understand outline and can explain some examples of deep learning as a combination of different network configurations and learning techniques.
		16th	Final exam	

Evaluation Method and Weight (%)

	Examination	Task	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	20	0	0	0	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	20	0	0	0	0	100
Cross Area Proficiency	0	0	0	0	0	0	0

Akashi College		Year	2023	Course Title	Experiments of Computer Engineering II
Course Information					
Course Code	5524		Course Category	Specialized / Compulsory	
Class Format	Experiment		Credits	School Credit: 2	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	First Semester		Classes per Week	4	
Textbook and/or Teaching Materials					
Instructor	HAMADA Yukihiro				
Course Objectives					
The goal of this course is to enhance cooperativeness and understanding of the development process. by developing software in a group basis. The specific goals are as follows: [1] To create and present the requirements document for the software that is going to be developed. [2] To create and present software external and internal design documents. [3] To create and present the software. [4] Give chances to every member of the team to be a leader and lead development during any stage of software development. Also give direction in the division of roles in creating submission document and the presentation slide and check progress					
Rubric					
		Ideal Level	Standard Level	Unacceptable Level	
Achievement 1		Can correctly create and present the requirement definition document for the software that is going to be developed.	Can create and present the requirement definition document for the software that is going to be developed.	Cannot create or present the requirement definition document for the software that is going to be developed.	
Achievement 2		Can correctly create and present software external and internal design documents.	Can create and present software external and internal design documents.	Cannot create or present software external and internal design documents.	
Achievement 3		Can correctly create and present the software designed.	Can create and present the software designed.	Cannot create or present the software designed.	
Achievement 4		Every member of the team can lead the development process effectively by being a leader during any stage of software development. In addition, can give correct direction in the division of submission document and the presentation slide creation and check progress.	Every member of the team can lead the development process by being a leader during any stage of software development. In addition, can give direction in the division of roles in creating submission document and the presentation slide and check progress.	Every member of the team cannot lead the development process by being a leader during any stage of software development. In addition, cannot give direction in the division of roles in creating submission document and the presentation slide and cannot check progress.	
Assigned Department Objectives					
Teaching Method					
Outline	In an enterprise, software is typically developed by a team of multiple members. Software development goes through the process of requirements definition, external design, internal design, program design, programming, and testing, then operation and maintenance of the software. In this course, students will split into teams and develop a software in a similar process.				
Style	PBL in teams of three to four				
Notice	Division of work is decided by the team, every member should take responsibility for their part. The progress of the shared task should be reported each week in the team and tackle any barriers with the entire team. Assignments must be submitted by due date. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class <input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester r	1st Quarter	1st	Guidance and Requirements analysis and definition 1 of 3	Understand the team, issues to work on, and schedule. Can explain the software development process, and can analyze and define the requirements of the software to be developed.	
		2nd	Requirements analysis and definition 2 of 3	Can analyze and define the requirements of the software to be developed.	
		3rd	Requirements analysis and definition 3 of 3	Can create a requirement definition document for the software that is going to be developed and as well as the slides for presentation.	
		4th	Publication of the requirement definition document	Can present the requirement definition document for the software that is going to be developed.	
		5th	External and internal design 1 of 2	Can perform external and internal design of the software that is going to be developed.	
		6th	External and internal design 1 of 2	Can create external and internal design documents for the software that is going to be developed as well as the slides for presentation.	

		7th	Publication of external and internal design documents	Can present the external and internal design documents for the software that is going to be developed.
		8th	Program Design	Can modify the data flow diagram of the software development and can design the program as needed.
	2nd Quarter	9th	Programming 1 of 5	Can program the software that is going to be developed.
		10th	Programming 2 of 5	Can program the software that is going to be developed.
		11th	Programming 3 of 5	Can program the software that is going to be developed.
		12th	Programming 4 of 5	Can program the software that is going to be developed.
		13th	Programming 5 of 5	Can program the software that is going to be developed.
		14th	Testing, remediation and documentation	Can test the software and modify as necessary. In addition, can create user manuals to prepare for presentations and demonstrations.
		15th	Software presentation and demonstration	Can present and demonstrate the software developed.
		16th	No final examination	

Evaluation Method and Weight (%)

	Requirement definition document	Presentation1	External • Internal design document	Presentation2	Usermanual	Presentation3	Demonstration	Total
Subtotal	15	15	15	15	15	10	15	100
Basic Proficiency	0	0	0	0	0	0	0	0
Specialized Proficiency	15	15	15	15	15	10	15	100
Cross Area Proficiency	0	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Fundamentals of Communication Systems
Course Information						
Course Code		5525		Course Category	Specialized / Elective	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term		First Semester		Classes per Week	2	
Textbook and/or Teaching Materials		教科書：植松友彦、松本隆太郎「基本を学ぶ通信工学」オーム社				
Instructor						
Course Objectives						
以下の能力を修得することを目指す。 1) 通信システムを理解するために必要な数学的準備や基礎的な信号処理論について理解し、解析できる。 2) 通信システムにおける簡単な信号処理システムを設計できる。 3) 課題報告作成による自主的・継続的学習能力を得る。						
Rubric						
		理想的な到達レベルの目安	標準的な到達レベルの目安	未到達レベルの目安		
評価項目1		通信システムを理解するために必要な数学的準備や基礎的な信号処理論について正確に理解し、解析できる。	通信システムを理解するために必要な数学的準備や基礎的な信号処理論について理解し、解析できる。	通信システムを理解するために必要な数学的準備や基礎的な信号処理論について理解できない。		
評価項目2		通信システムにおける信号処理方式を理解し、正確に説明できる。	通信システムにおける信号処理方式を理解し、説明できる。	通信システムにおける信号処理方式を理解し、説明できない。		
評価項目3		必要数の課題レポートを正確に作成できる。	必要数の課題レポートを作成できる。	必要数の課題レポートを作成できない。		
Assigned Department Objectives						
Teaching Method						
Outline	本授業では通信システムを理解するために必要な基礎項目および簡単なアナログ通信システムについて解説する。科目の構成としては、後期開講科目である「通信方式」と組となる科目であるため、本科目と「通信方式」の両科目の受講を薦めたい。					
Style	通信システムの基礎とアナログ変復調方式に重点を置いて、教科書・スライドを用いながら解説していく。各回で簡単な課題を出す。自己学習が重要な科目であるので、予習復習をしっかりとやりながら取り組むこと。 連絡員：大向雅人					
Notice	本科目は、授業で保証する学習時間と、予習・復習および課題に必要な標準的な自己学習時間の総計が90時間に相当する学習内容である。 評価の対象としない欠席条件（割合）>1/3以上					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme	Goals		
1st Semester r	1st Quarter	1st	導入 通信システムの基本構成と本授業の位置付けを行う。	通信システムについて説明できる。変調の役割について説明できる。		
		2nd	アナログ信号処理のための数学① 通信システムを学ぶための数学的基礎として欠かせないフーリエ変換等を解説する。	フーリエ級数展開の定義を理解し、実際にフーリエ級数展開できるようになる。		
		3rd	アナログ信号処理のための数学② 通信システムを学ぶための数学的基礎として欠かせないフーリエ変換等を解説する。	フーリエ変換・フーリエ逆変換の定義や性質を理解し、実際にフーリエ変換できるようになる。		
		4th	通信システムのモデルとフィルタ 本講義で扱う通信システムのモデルを解説する。システムの一つとしてフィルタを説明する。	システムのモデルを理解して説明できる。フィルタの役割を理解する。		
		5th	振幅変調方式（1） 変調の役割や意義について説明する。振幅変調方式の概要を説明する。	各変調方式の役割について説明できる。振幅変調方式の概要を説明できる。		
		6th	振幅変調方式（2） 振幅変調とその復調について説明する。	振幅変調方式の変調方法と復調方法を説明できる。		
		7th	角度変調方式（1） 位相変調と周波数変調の概略を説明し、周波数変調の占有帯域幅について説明する。	位相変調と周波数変調の性質を説明できる。		
		8th	角度変調方式（2） 周波数変調とその復調について説明する。	周波数変調方式の変調方法と復調方法を説明できる。		
	2nd Quarter	9th	復習・小テスト（1） アナログ変調について振り返る。簡単なプログラムを利用して、各変調方式のふるまいを確認する。小テストを実施する。	小テストで60%以上を取得する。		
		10th	パルス変調とパルス符号変調（1） アナログ信号処理とディジタル信号処理の違いについて説明する。 パルス振幅変調と標本化定理について解説する	標本化定理とパルス変調について説明できる。		
		11th	パルス変調とパルス符号変調（2） パルス符号変調（PCM）とPCMにおける雑音について解説する。	パルス符号変調と雑音について説明できる。		

		12th	発展的課題（１） 通信における誤り制御技術（誤り訂正符号）について解説する。	通信における誤り訂正符号の役割を説明できる。
		13th	発展的課題（２） 通信における秘匿通信技術（公開鍵暗号）について解説する。	通信における公開鍵暗号の役割を説明できる。
		14th	発展的課題（３） 通信における秘匿通信技術（共通鍵暗号）について解説する。	通信における公開鍵暗号の役割を説明できる。
		15th	復習・小テスト（２） 移動通信システムの発展の歴史を題材に、本講義で扱った変調方式を振り返るとともに、後期の通信方式で扱うデジタル変調技術を紹介する。小テストを実施する。	小テストで60%以上を取得する。
		16th		

Evaluation Method and Weight (%)			
	小テスト（２回）	課題	Total
Subtotal	50	50	100
基礎的能力	0	0	0
専門的能力	50	50	100
分野横断的能力	0	0	0

Akashi College		Year	2023		Course Title	Communication System	
Course Information							
Course Code		5526		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials		教科書：植松友彦、松本隆太郎「基本を学ぶ通信工学」オーム社					
Instructor							
Course Objectives							
以下の能力を修得することを目標とする。 1) アナログ・デジタル通信システムおよびその基本的な構成要素について理解する。 2) 各種デジタル変調方式の原理、特徴について理解する。 3) 多重通信方式、スペクトル拡散変調の原理、特徴について理解する。							
Rubric							
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目1		アナログ・デジタル通信システムおよびその基本的な構成要素について正確に説明できる。		アナログ・デジタル通信システムおよびその基本的な構成要素について説明できる。		アナログ・デジタル通信システムおよびその基本的な構成要素について説明できない。	
評価項目2		各種デジタル変調方式の原理,特徴について正確に説明できる。		各種デジタル変調方式の原理,特徴について説明できる。		各種デジタル変調方式の原理,特徴について説明できない。	
評価項目3		多重通信方式、スペクトル拡散変調の原理、特徴について正確に説明できる。		多重通信方式、スペクトル拡散変調の原理、特徴について説明できる。		多重通信方式、スペクトル拡散変調の原理、特徴について説明できない。	
Assigned Department Objectives							
Teaching Method							
Outline		本講義では、アナログ・デジタル通信システムについて解説する。各種変調方式を用いて情報伝送を行うための基礎理論について理解することを目標とする。また、現代社会の通信システムで使われている変調技術を幅広く知ることを目標とする。					
Style		アナログ通信に加え、デジタル通信の変復調方式に重点を置いて、教科書・スライドを用いながら解説していく。自己学習が重要な科目であるので、予習復習をしっかりとやりながら取り組むこと。					
Notice		本講義では、アナログ・デジタル通信システムについて解説する。各種変調方式を用いて情報伝送を行うための基礎理論について理解することを目標とする。 また、現代社会の通信システムで使われている変調技術を幅広く知ることを目標とする。 評価の対象としない欠席条件（割合）>1/3以上					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	導入と復習 本授業の位置付けを行い、基礎通信工学で学習した項目を復習する。		基礎通信工学での学習したことの概要を説明できる。		
		2nd	確率過程の基礎 通信システムにおける雑音の取り扱いにおいて重要な役割を果たす確率過程について説明する。		確率過程について基本的概念を説明できる。		
		3rd	振幅変調の雑音特性 雑音があるときの振幅変調方式のふるまいを説明する。		復調信号の信号電力対雑音比について、各振幅変調方式別に説明できる。		
		4th	周波数変調の雑音特性 雑音があるときの周波数変調方式のふるまいを説明する。		周波数変調方式における復調信号の信号電力対雑音比を説明できる。		
		5th	復習・小テスト（1） アナログ変調における雑音について振り返る。簡単なプログラムを利用して、各変調方式のふるまいを確認する。小テストを実施する。		小テストで60%以上を取得する。		
		6th	デジタル変調の雑音特性 デジタル変調における雑音の制御について説明する。		デジタル変調における雑音について説明できる。		
		7th	パスバンドデジタル変調（1） 信号空間解析と相関受信機について説明する。		通信システムの特徴を解析でき、相関受信機による信号の判定方法を説明できる。		
		8th	パスバンドデジタル変調（2） 2元、多元パルス振幅変調（PAM）について説明する。		PAM方式について説明できる。		
	4th Quarter	9th	パスバンドデジタル変調（3） 直行振幅変調（QAM）と位相偏移変調（PSK）について説明する。		QAM方式、PSK方式について説明できる。		
		10th	復習・小テスト（2） デジタル変調について振り返る。簡単なプログラムを利用して、各変調方式のふるまいを確認する。小テストを実施する。		小テストで60%以上を取得する。		

		11th	Orthogonal Frequency Division Multiplexing (OFDM) 方式、OFDM方式について説明する。	OFDM方式について説明できる。
		12th	多重通信方式 周波数分割多重 (FDM)、時分割多重 (TDM)、符号分割多重 (CDM) について説明する。	多重通信について説明できる。
		13th	移動通信システムと変調技術 移動通信システムの発展の歴史を題材に、本講義で扱った変調方式を振り返る。	各変調方式がどのように使われてきたかを知る。
		14th	通信システムにおける変調技術 (1) 世の中にある通信システムを各自で調べ、どのような変調技術、通信技術が使われているかをレポートとしてまとめる。	各自で興味を持った通信システムについて調査し、レポートとしてまとめられる。
		15th	通信システムにおける変調技術 (2) 各自が作成したレポートを読み合い、様々な通信システムにおける変調技術の使われ方を知る。	レポートを互いに読み合うことで、様々な通信システムに関する知識を吸収する。
		16th		

Evaluation Method and Weight (%)

	小テスト	レポート	課題	Total
Subtotal	40	30	30	100
基礎的能力	0	0	0	0
専門的能力	40	30	30	100
分野横断的能力	0	0	0	0

Akashi College		Year	2023		Course Title	Control Engineering II	
Course Information							
Course Code		5527		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		First Semester		Classes per Week		2	
Textbook and/or Teaching Materials		「制御工学－技術者のための、理論・設計から実装まで－」豊橋技術科学大学・高等専門学校制御工学教育連携プロジェクト 編					
Instructor		ENOMOTO Ryuji					
Course Objectives							
本講義では、以下の事項を目的とする。 1. ラプラス逆変換を用いてシステムの過渡応答を導出できる。 2. 伝達関数からボード線図の折線近似を描ける。逆に、ボード線図の折線近似から伝達関数を導出できる。 3. ラウス、および、フルビッツの安定判別法を用いて開ループ系の安定判別ができる。 4. 安定余裕を求めることができる。 5. PID制御系を設計できる。 6. システムの離散時間モデルを導出できる。							
Rubric							
	理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安		
評価項目1	ラプラス逆変換を用いてシステムの過渡応答を導出できる。		基本的なシステムの過渡応答は、部分分数分解や平方完成等の式変形を行った後にラプラス逆変換を利用すれば導出できることを知っている。		ラプラス逆変換の計算ができない。		
評価項目2	伝達関数からボード線図の折線近似を描くこと、および、ボード線図の折線近似から伝達関数を導出することの両方ができる。		伝達関数からボード線図の折線近似を描くこと、および、ボード線図の折線近似から伝達関数を導出することのどちらかはある。		伝達関数からボード線図の折線近似を描くこと、及び、ボード線図の折線近似から伝達関数を導出することの両方ができない。		
評価項目3	ラウス、および、フルビッツの両安定判別法を用いて、開ループ系の安定判別ができる。		ラウス、もしくは、フルビッツの安定判別法を用いて、開ループ系の安定判別ができる。		ラウス、および、フルビッツの安定判別法のどちらも知らない。		
評価項目4	安定余裕を求める、もしくは、周波数応答上の該当箇所を示すことができる。		安定余裕の定義を説明できる。		安定余裕を求めることができない。		
評価項目5	ステップ応答法、および、限界感度法の両方で、PID制御系を設計できる。		ステップ応答法、もしくは、限界感度法を用いてPID制御系を設計できる。		PID制御系を設計できない。		
評価項目6	微分方程式の解、および、差分近似の両方でシステムの離散時間モデルを導出できる。		微分方程式の解、もしくは、差分近似を用いてシステムの離散時間モデルを導出できる。		システムの離散時間モデルを導出できない。		
Assigned Department Objectives							
Teaching Method							
Outline	この科目は企業で宇宙防衛システムや大規模フィジカルシステムのシミュレータの設計を担当していた教員が指導する講義である。日常生活の中で我々はあまり意識せずに使っているが、車やエアコン、冷蔵庫など、身の回りにあるほとんど全ての機器に自動制御の機能が取り入れられている。本講義では、ラウス・フルビッツの安定判別法やPID制御系の設計手法など、制御工学Iに続いて古典制御の基礎を学ぶとともに、制御系の応答を自分自身でシミュレーションする手法について学ぶ。						
Style	システムの過渡応答の導出や開ループ系の安定判別法と安定余裕、PID制御設計について学習するとともに、これまでの制御工学に関する学習の総まとめとして、制御系の応答をシミュレーションベースで確認する方法を説明・実演する。講義内容の説明が終了次第、その内容を復習する演習を実施する形式の授業を、ほぼ毎回実施する。						
Notice	課題や定期試験では計算量が多くなるので、適宜課す演習は自分で考えて実際に解き、計算に慣れておくことが望ましい。また、課題・演習の数が多くので速やかに仕上げるよう、心がけること。 合格の対象としない欠席条件(割合) 1/3以上の欠課						
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input checked="" type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme	Goals			
1st Semester	1st Quarter	1st	イントロダクション	本講義のアウトラインを理解し、学習内容・到達目標を把握できる。			
		2nd	ラプラス変換・逆変換	ラプラス変換の式を記述できる。 部分分数分解や平方完成に基づくラプラス逆変換の計算ができる。			
		3rd	過渡応答の計算	ラプラス逆変換を利用して、ステップ応答やインパルス応答などを導出できる。 畳み込み積分の意味を理解した上で、式を記述できる。			
		4th	ボード線図の折線近似 1	1次要素の積で構成された伝達関数を持つシステムについて、そのボード線図（ゲイン線図）の折線を描くことができる。			
		5th	ボード線図の折線近似 2	1次要素の積で構成された伝達関数を持つシステムについて、ボード線図（ゲイン線図）の折れ線近似から伝達関数を求めることができる。			

		6th	安定余裕	安定余裕について説明できる。 周波数応答上で安定余裕が示されている箇所を説明できる。
		7th	ナイキストの安定判別法	開ループ伝達関数を使ったフィードバック制御系の安定判別ができる
		8th	復習	前半の講義内容の復習を行う
	2nd Quarter	9th	内部安定性, フルビッツの安定判別法	外部安定性と内部安定性の概念, および, これらが一致するための条件を説明できる。 フルビッツの安定判別法を使って安定判別できる。
		10th	ラウスの安定判別法	特別な場合も含め, ラウスの安定判別法を使って安定判別できる。
		11th	PID制御	PID制御器の入出力特性 (伝達関数) を説明できる。 P動作の効果について説明できる。 I動作の効果について説明できる。 D動作の効果について説明できる。
		12th	PID制御系の設計法	限界感度法を用いてPIDゲインを求めることができる。 ステップ応答法を用いてPIDゲインを求めることができる。
		13th	モデルの離散化	微分方程式を差分化して離散時間モデルを導出できる。 微分方程式の解を求め, これを用いて離散時間モデルを導出できる。
		14th	シミュレーション演習	制御対象や制御器のモデルを離散化し, 制御系の応答をシミュレーションする方法を説明できる。
		15th	復習	後半の講義内容の復習を行う。
		16th	期末試験	

Evaluation Method and Weight (%)						
	試験	課題演習	態度	ポートフォリオ	その他	Total
Subtotal	60	40	0	0	0	100
基礎的能力	0	0	0	0	0	0
専門的能力	60	40	0	0	0	100
分野横断的能力	0	0	0	0	0	0

Akashi College		Year	2023	Course Title	Application of Electronics
Course Information					
Course Code	5528		Course Category	Specialized / Elective	
Class Format	Lecture		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	ENOMOTO Ryuji				
Course Objectives					
(1) Understand the typical kinds of clinical tests (laboratory tests) and their purpose and significance. (2) Understand blood cell analysis methods, in particular the principle and characteristics of flow cytometers. (3) Understand the measurement principles and characteristics of spectroscopic detection technologies used in testing of coagulation, biochemistry, and immunity, etc. (4) Understand typical clinical testing equipment systems and component technologies.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Accurately understand the typical kinds of clinical tests (laboratory tests) and their purpose and significance.		Understand the typical kinds of clinical tests (laboratory tests) and their purpose and significance.		Do not understand the typical kinds of clinical tests (laboratory tests) and their purpose and significance.
Achievement 2	Accurately understand blood cell analysis methods, in particular the principle and characteristics of flow cytometers		Understand blood cell analysis methods, in particular the principle and characteristics of flow cytometers		Do not understand blood cell analysis methods, in particular the principle and characteristics of flow cytometers
Achievement 3	Accurately understand the measurement principles and characteristics of spectroscopic detection technologies used in testing of coagulation, biochemistry, and immunity, etc.		Understand the measurement principles and characteristics of spectroscopic detection technologies used in testing of coagulation, biochemistry, and immunity, etc.		Do not understand the measurement principles and characteristics of spectroscopic detection technologies used in testing of coagulation, biochemistry, and immunity, etc.
	Accurately understand typical clinical testing equipment systems and component technologies.		Understand typical clinical testing equipment systems and component technologies.		Do not understand typical clinical testing equipment systems and component technologies.
Assigned Department Objectives					
Teaching Method					
Outline	Clinical testing is essential for the diagnoses and treatment in today's medicine. As modern medicine advances, technological innovation and further development are progressing. This class will explain the outlines of laboratory tests for analysis of blood, urine, etc., and the basics of the measurement technologies, etc. applied to these tests. It will also cover the basic principles of measurement in the fields of biochemical, immunological, genetic measurement, etc., and the optical, electronic, fluid, chemical, and molecular biological technologies and measuring instruments used for these measurements. In addition, students will deepen their knowledge of disease and health management through this class.				
Style	The goal is to understand genetic testing and bioinformatics, and the class will be taught in a lecture style from week 1 to week 15. Liaison: Kazunari Inoue				
Notice	Knowledge of biology is preferred. Students who miss 1/3 or more of classes will not be eligible for evaluation.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Introduction to clinical testing (1)	Understand the role and type of testing in health management, diagnosis, and treatment, as well as the overall outline of clinical testing. Understand how to interpret inspection results and control accuracy.	
		2nd	Introduction to clinical testing (2)	Same as above	
		3rd	Biochemical testing (1)	Understand the significance of the items in biochemical testing and the method of testing, and the outline of biochemical testing technologies. Understand the outline of biochemical testing equipment and the principles of measurement and spectroscopy applied to the equipment.	
		4th	Biochemical testing (2)	Same as above	

		5th	Hematology testing (1)	Understand an overview of testing technologies for blood cells and coagulation testing technologies. Understand the hydrodynamics and engineering technologies used in flow cytometers used in cell analysis such as red blood cells and white blood cells.
		6th	Hematology Testing (2)	Same as above
		7th	General examination (urine, and feces)	Understand an overview of urinary qualitative testing, urinary sediment testing technologies and their measuring equipment. Also understand the outline of fecal occult blood testing.
		8th	Midterm exam	
	2nd Quarter	9th	Company tour	By visiting a company that develops and produces clinical testing equipment and reagents, and by seeing the activities of a company involved in actual testing equipment and clinical testing, the students can deepen their understanding of clinical testing.
		10th	Immunology Testing (1)	Understand the overview of immunological testing technologies. Understand the general description of chemiluminescent immunoassay measuring devices and the principles of measurement and detection technologies that are applied to them.
		11th	Immunology Testing (2)	Same as above
		12th	Genetic Testing (1)	Understand an overview of genetic testing technologies. Understand the outline of PCR instruments, sequencers and other genetic test instruments, and the measurement principles and detection technologies applied to them.
		13th	Genetic Testing (2)	Same as above
		14th	Microbiology Testing	Understand the outline of microbiology testing technologies. Understand the test equipment used for microbiology testing and the measurement principles and detection technologies applied to it.
		15th	Topics for clinical tests	Understand recent topics in clinical testing. Can review all of previous lectures.
		16th	Final exam	Final exam
Evaluation Method and Weight (%)				
	Examination		Presentation	Total
Subtotal	80		20	100
Basic Proficiency	0		0	0
Specialized Proficiency	80		20	100
Cross Area Proficiency	0		0	0

Akashi College		Year	2023		Course Title	Image Engineering	
Course Information							
Course Code		5529		Course Category		Specialized / Elective	
Class Format		Lecture		Credits		Academic Credit: 2	
Department		Electrical and Computer Engineering Computer Engineering Course		Student Grade		5th	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials		利用しない。適宜資料を配布する。					
Instructor		NAKAI Yuichi					
Course Objectives							
(1) 画像符号化技術の応用範囲・適用例を理解する。 (2) 画像情報の性質を理解し、画像符号化技術が必要とされる理由を理解する。 (3) 各種の画像符号化の概要と特徴を理解する。 (4) 基本的な画像処理技術および画像符号化技術の実際を理解する。							
Rubric							
		理想的な到達レベルの目安		標準的な到達レベルの目安		未到達レベルの目安	
評価項目1		画像符号化技術の応用範囲・適用例を十分に説明できる。		画像符号化技術の応用範囲・適用例を説明できる。		画像符号化技術の応用範囲・適用例を説明できない。	
評価項目2		画像情報の性質を理解し、画像符号化技術が必要とされる理由を的確に説明できる。		画像情報の性質を理解し、画像符号化技術が必要とされる理由を説明できる。		画像情報の性質、画像符号化技術が必要とされる理由を説明できない。	
評価項目3		各種の画像符号化の概要と特徴を具体的に説明できる。		各種の画像符号化の概要と特徴を説明できる。		各種の画像符号化の概要と特徴を説明できない。	
評価項目4		基本的な画像処理技術および画像符号化技術の実際を的確に説明できる。		基本的な画像処理技術および画像符号化技術の実際を説明できる。		基本的な画像処理技術および画像符号化技術の実際を説明できない。	
Assigned Department Objectives							
Teaching Method							
Outline		ディジタル情報としての画像を扱う場合、そのデータ量を削減するための技術(画像符号化あるいは画像圧縮)は必須である。本講義では画像情報の性質を簡単に説明した後、各種画像符号化方式について講義を行う。さらに、行列演算ソフトなどを利用した課題を行うことによって講義で学んだ知識を確実なものとする。					
Style		主としてスライドを用いて内容の説明を行う。また、学修科目であるので、半期の間に3〜4つの課題を課す。課題については、指定された処理を行うプログラムを作成する内容であるので、あらかじめ課題で使うことのできるアプリケーションの説明を行う。					
Notice		本科目は、授業で保証する学習時間と、予習・復習及び課題レポート作成に必要な標準的な自己学習時間の総計が、90時間に相当する学習内容である。学修単位であり、半期の間に3〜4の課題を課す。単位の習得にはすべての課題の提出が必須である。課題はプログラミングなので、プログラムの経験があることが望ましい(言語は問わない)。評価の対象としない欠席条件(割合) 1/3以上の欠課					
Characteristics of Class / Division in Learning							
<input type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester r	3rd Quarter	1st	画像情報の性質		ディジタル化された画像情報は一般に強い相関性を持つといわれる。相関性とは何か、相関性が強いとどういことが起きるのかについて説明できる。		
		2nd	Octaveでの画像処理 (1)		課題を行うために用いるPythonの利用方法を理解する。		
		3rd	Octaveでの画像処理 (2)		Pythonを用いて課題として出される処理ができる。		
		4th	エントロピー符号化 (1)		各種符号化において併用されることの多いエントロピー符号化の考え方を説明できる。		
		5th	エントロピー符号化 (2)		エントロピー符号化の代表的な手法としてHuffman符号化、算術符号化の概要を説明できる。		
		6th	予測符号化 (1)		最も単純なクラスの画像符号化である予測符号化について、その原理が説明できる。		
		7th	予測符号化 (2)		予測符号化の特徴について説明し、欠点を補う方法等について説明できる。		
		8th	中間試験				
	4th Quarter	9th	変換符号化 (1)		変換符号化の考え方を説明し、現在の画像符号化の主流である二次元離散コサイン変換(DCT)の概要について説明できる。		
		10th	変換符号化 (2)		DCTをベースとした画像符号化法であるJPEGについて説明できる。		
		11th	ウェーブレット変換		変換符号化の次世代方式として注目されているウェーブレット変換について概要を説明できる。		
		12th	ベクトル量子化 (1)		スカラー量子化の拡張であるベクトル量子化について概要が説明できる。		
		13th	ベクトル量子化 (2)		ベクトル量子化の性能、設計手法および課題について説明できる。		
		14th	その他の画像符号化		その他の画像符号化としてブロックトランケーション符号化、階層的符号化等の概要を説明できる。		

		15th	動画像符号化	各種動画像符号化方式について概要を説明できる。
		16th	期末試験	

Evaluation Method and Weight (%)							
	試験	発表	相互評価	態度	課題	その他	Total
Subtotal	70	0	0	0	30	0	100
基礎的能力	0	0	0	0	0	0	0
専門的能力	70	0	0	0	30	0	100
分野横断的能力	0	0	0	0	0	0	0

Akashi College		Year	2023		Course Title	Qualifications in Computer Engineering I
Course Information						
Course Code	5530			Course Category	Specialized / Elective	
Class Format	その他			Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course			Student Grade	5th	
Term	Year-round			Classes per Week	1	
Textbook and/or Teaching Materials						
Instructor	NAKAI Yuichi					
Course Objectives						
The goal is to pass a certification exam by an external organization on the contents of information technology. If students pass any of the following qualifications, they will be eligible for credit certification. Information Technology Engineer Examination: Applied Information Technology Engineers In addition, the evaluation is passed or failed, and no evaluation is performed by score.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Assigned Department Objectives						
Teaching Method						
Outline	This course is taken as a subject to award credits according to the results of the certification exams held by an external organization as results of the study in the field of information technology. If students pass any of the designated external certification exams, they will be awarded one credit by completing certain procedures by the deadline specified by the Student Services Division.					
Style	This is self-study for certification exams, and there will be no lecture.					
Notice	A certificate of passing or proof of passing is required for credit approval, and the application period shall be after the winter holidays and up to the date specified by the Academic Affairs Office. If a certifying document is not submitted within this period, the credit will not be approved. Keep the deadline. No conditions for missing classes that will not be eligible for a passing grade.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
1st Semester	1st Quarter	1st	Self-study		Self-study for certification exams (no lecture)	
		2nd	Same as above		Same as above	
		3rd	Same as above		Same as above	
		4th	Same as above		Same as above	
		5th	Same as above		Same as above	
		6th	Same as above		Same as above	
		7th	Same as above		Same as above	
		8th	Same as above		Same as above	
	2nd Quarter	9th	Same as above		Same as above	
		10th	Same as above		Same as above	
		11th	Same as above		Same as above	
		12th	Same as above		Same as above	
		13th	Same as above		Same as above	
		14th	Same as above		Same as above	
		15th	Same as above		Same as above	
		16th	No final exam			
2nd Semester	3rd Quarter	1st	Self-study		Self-study for certification exams (no lecture)	
		2nd	Same as above		Same as above	
		3rd	Same as above		Same as above	
		4th	Same as above		Same as above	
		5th	Same as above		Same as above	
		6th	Same as above		Same as above	
		7th	Same as above		Same as above	
		8th	Same as above		Same as above	
	4th Quarter	9th	Same as above		Same as above	
		10th	Same as above		Same as above	
		11th	Same as above		Same as above	
		12th	Same as above		Same as above	
		13th	Same as above		Same as above	
		14th	Same as above		Same as above	
		15th	Same as above		Same as above	
		16th	No final exam		Same as above	

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

Akashi College		Year	2023	Course Title	Qualifications in Computer Engineering II
Course Information					
Course Code	5531		Course Category	Specialized / Elective	
Class Format	その他		Credits	School Credit: 1	
Department	Electrical and Computer Engineering Computer Engineering Course		Student Grade	5th	
Term	Year-round		Classes per Week	1	
Textbook and/or Teaching Materials					
Instructor	NAKAI Yuichi				
Course Objectives					
<p>The goal is to pass a more advanced certification exam by an external organization on the contents of information technology. If students pass the following qualifications, they will be eligible for credit certification.</p> <p>Information Technology Engineer Examination: Specialists (in each field), and Registered Information Security Specialist</p> <p>If students have obtained the equivalent of Information Qualifications II they do not have the equivalent of Information Qualifications I, they will be granted one credit for each subject of Information Qualifications I and II.</p> <p>In addition, the evaluation is passed or failed, and no evaluation is performed by score.</p>					
Rubric					
		Ideal Level	Standard Level	Unacceptable Level	
Assigned Department Objectives					
Teaching Method					
Outline	This course is taken as a subject to award credits according to the results of the certification exams held by an external organization as results of the study in the field of information technology. If students pass any of the designated external certification exams, they will be awarded one credit by completing certain procedures by the deadline specified by the Student Services Division.				
Style	Self-study for certification exams (no lecture)				
Notice	<p>A certificate of passing or proof of passing is required for credit approval, and the application period shall be after the winter holidays and up to the date specified by the Academic Affairs Office. If a certifying document is not submitted within this period, the credit will not be approved. Keep the deadline.</p> <p>No conditions for missing classes that will not be eligible for a passing grade.</p>				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Self-study	Self-study for certification exams (no lecture)	
		2nd	Same as above	Same as above	
		3rd	Same as above	Same as above	
		4th	Same as above	Same as above	
		5th	Same as above	Same as above	
		6th	Same as above	Same as above	
		7th	Same as above	Same as above	
		8th	Same as above	Same as above	
	2nd Quarter	9th	Same as above	Same as above	
		10th	Same as above	Same as above	
		11th	Same as above	Same as above	
		12th	Same as above	Same as above	
		13th	Same as above	Same as above	
		14th	Same as above	Same as above	
		15th	Same as above	Same as above	
		16th	No final exam	Same as above	
2nd Semester	3rd Quarter	1st	Self-study	Self-study for certification exams (no lecture)	
		2nd	Same as above	Same as above	
		3rd	Same as above	Same as above	
		4th	Same as above	Same as above	
		5th	Same as above	Same as above	
		6th	Same as above	Same as above	
		7th	Same as above	Same as above	
		8th	Same as above	Same as above	
	4th Quarter	9th	Same as above	Same as above	
		10th	Same as above	Same as above	
		11th	Same as above	Same as above	
		12th	Same as above	Same as above	
		13th	Same as above	Same as above	
		14th	Same as above	Same as above	

		15th	Same as above			Same as above	
		16th	No final exam				
Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	0	100	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	100	100
Cross Area Proficiency	0	0	0	0	0	0	0