Toyama College	Department of Electronics and Computer Engineering	Year	2020

Department Goals

To develop engineers who can design anddevelop a comprehensive program fromsystems to application.

To develop engineers who can designelectronic circuits from sensors to interface.

To develop engineers who can design anetwork to organically connect programsand circuits.

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	
						1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
General	Elective	Health Education	0004	School Credit	1	2																				Hayashi Naoto	
General	Elective	Physical Education Ⅰ	0005	School Credit	2	2	2																			Ohashi Chisato,Hayashi Naoto	
General	Elective	Comprehensive Japanese ⅠA	0006	School Credit	1	2																				Kubo Yoko	
General	Elective	Comprehensive Japanese ⅠB	0007	School Credit	1	2																				Kondo Shugo	
General	Elective	History Ⅰ	0008	School Credit	2	2	2																			Ichishima Akiyuki	
General	Elective	Music	0009	School Credit	1			2																		Ishii Tetsuo	
General	Elective	Arts	0010	School Credit	1			2																		Takahata Nobuo	
General	Elective	Calligraphy	0011	School Credit	1			2																		Tatsuta Masami	
General	Elective	Comprehensive English Ⅰ	0012	School Credit	3	3	3																			Rakuyama Susumu	
General	Elective	English Expression Ⅰ	0013	School Credit	2	2	2																			Morita Takuya	
General	Elective	English Conversation Ⅰ	0014	School Credit	1	1	1																			Szolnoky Norbert,Randall Jack	
General	Compulsory	Fundamental Mathematics AⅠ	0015	School Credit	2	4																				Fujii Senshu	
General	Compulsory	Fundamental MathematicsAⅡ	0016	School Credit	2			4																		Fujii Senshu	
General	Elective	Fundamental Mathematics C	0017	School Credit	1			2																		Nakagawa Yoshihiko	
General	Compulsory	Fundamental Mathematics BⅠ	0018	School Credit	1	2																				Sakurai Hideto	

General	Compulsory	Fundamental Mathematics BⅡ	0019	School Credit	1			2																		Sakurai Hideto	
General	Compulsory	Physics ⅠA	0020	School Credit	1	2																				Ohtake Yukiko	
General	Elective	Chemistry ⅠA	0021	School Credit	1	2																				Terasaki Yukiko	
General	Elective	Comprehensive Japanese ⅠC	0022	School Credit	1			2																		Kubo Yoko	
General	Elective	Comprehensive Japanese ⅠD	0023	School Credit	1			2																		Kubo Yoko	
General	Compulsory	Physics ⅠB	0024	School Credit	1			2																		Ohtake Yukiko	
General	Elective	Chemistry ⅠB	0025	School Credit	1			2																		Terasaki Yukiko	
Specialized	Compulsory	Fundamental Experiments for Manufacturing Engineers	0001	School Credit	3	3		3																		Shinokawa Toshiyuki,Yamaguchi Akifumi,Akiguchi Shunsuke,Kadomura Hideki,Matoba Ryuichi,Mizumoto Iwao,Yoshii Yotsumi	
Specialized	Compulsory	Introduction to Ethics for Engineers	0002	School Credit	1			2																		Akiguchi Shunsuke,Kadomura Hideki,Oguma Hiroshi	
Specialized	Compulsory	Fundamentals of Information Technology	0003	School Credit	1	2																				Yamaguchi Akifumi,Akiguchi Shunsuke,Kadomura Hideki	
General	Elective	Physical Education Ⅱ	0022	School Credit	2					2		2														,Hayashi Naoto	
General	Elective	Comprehensive Japanese Ⅱ	0027	School Credit	2					2		2														Kondo Shugo	
General	Elective	History Ⅱ	0028	School Credit	2					2		2														Yokota Kazuhiro	

General	Elective	Ethics	0029	School Credit	2					2		2														Muranaka Tatsuya	
General	Elective	Comprehensive English Ⅱ	0030	School Credit	3					3		3														Rakuyama Susumu	
General	Elective	English Expression Ⅱ	0031	School Credit	2					2		2														Morita Takuya	
General	Elective	English Conversation Ⅱ	0032	School Credit	1					1		1														Szolnoky Norbert,Randall Jack	
General	Elective	Calculus Ⅰ	0037	School Credit	2					4																Nakagawa Yoshihiko	
General	Elective	Calculus Ⅱ	0038	School Credit	2							4														Nakagawa Yoshihiko	
General	Elective	Linear Algebra Ⅰ	0039	School Credit	1					2																Kawai Hitoshi	
General	Elective	Linear Algebra Ⅱ	0040	School Credit	1							2														Ohtake Yukiko	
General	Elective	Physics Ⅱ	0041	School Credit	2					2		2														Ohtake Yukiko	
General	Elective	Chemistry Ⅱ	0042	School Credit	2					2		2														Terasaki Yukiko	
General	Compulsory	Fundamental Science Experiment	0043	School Credit	1							2														Terasaki Yukiko,Ohtake Yukiko	
Specialized	Compulsory	Fundamentals of Electricity Ⅱ	0023	School Credit	1							2														Yamaguchi Akifumi	
Specialized	Compulsory	Seminars in Engineering Ⅰ	0024	School Credit	1					1		1														Yamaguchi Akifumi	
Specialized	Compulsory	Experiments on Electronic and Computer Engineering Ⅰ	0025	School Credit	2					2		2														Shinokawa Toshiyuki,Shina Toru,Yamaguchi Akifumi,Hayase Yoshikazu,Kadomura Hideki	
Specialized	Compulsory	Fundamentals of Electricity Ⅰ	0026	School Credit	1					2																Yamaguchi Akifumi	
Specialized	Compulsory	Computer Systems	0033	School Credit	1					2																Shinokawa Toshiyuki	

Specialized	Compulsory	Logic Circuits	0034	School Credit	1	2	Shinokawa Toshiyuki	
Specialized	Compulsory	Programming Ⅰ	0035	School Credit	1	2	Akiguchi Shunsuke,Kadomura Hideki,Matoba Ryuichi	
Specialized	Compulsory	Programming Ⅱ	0036	School Credit	1	2	Akiguchi Shunsuke,Kadomura Hideki	
General	Elective	Physical Education Ⅲ	0044	School Credit	2	2 2	Ohashi Chisato	
General	Elective	Cross-cultural Training For The English-Speaking World	0045	School Credit	3	3 3	Terasaki Yukiko	
General	Elective	Cross-cultural Training For Japan Sea Rim	0046	School Credit	3	3 3	Terasaki Yukiko	
General	Elective	Comprehensive Japanese Ⅲ	0053	School Credit	2	2 2	Okabe Hiroko	
General	Elective	Politics & Economics	0054	School Credit	2	2 2	Yokota Kazuhiro	
General	Elective	Comprehensive English Ⅲ	0055	School Credit	3	3 3	Shishido Kimiko	
General	Elective	English Expression Ⅲ	0056	School Credit	2	2 2	Yamamura Hiroto	
General	Elective	Japanese	0057	School Credit	1	2	Ebie Ayaka	
General	Elective	Comprehensive Mathematics	0064	School Credit	1	2	Kawai Hitoshi	
General	Elective	Mathematical Analysis Ⅰ	0065	School Credit	2	4	Sakurai Hideto	
General	Elective	Mathematical Analysis Ⅱ	0066	School Credit	2	4	Sakurai Hideto	
General	Elective	Probabtility and Statisics	0067	School Credit	1	2	Nakagawa Yoshihiko	
General	Elective	Physics Ⅲ	0068	School Credit	1	2	Ohtake Yukiko	

Specialized	Compulsory	Experiments on Electronic and Computer Engineering Ⅱ	0047	School Credit	3									3		3										Shinokawa Toshiyuki,Hayase Yoshikazu,Kadomura Hideki,Matoba Ryuichi,Tsukada Akira,Ito Nao,Aso Tsukasa,Yoshii Yotsumi,Furuyama Shoichi	
Specialized	Elective	Electric Circuit Ⅰ	0048	School Credit	1									2												Tsukada Akira	
Specialized	Elective	Electric Circuit Ⅱ	0049	School Credit	1											2										Tsukada Akira	
Specialized	Elective	Electronic Circuit Ⅰ	0050	School Credit	1									2												Yamaguchi Akifumi	
Specialized	Elective	Electronic Circuit Ⅱ	0051	School Credit	1											2										Yamaguchi Akifumi	
Specialized	Elective	Seminars in Engineering Ⅱ	0052	School Credit	1									2												Ito Nao	
Specialized	Elective	Programming Ⅲ	0058	School Credit	1											2										Aso Tsukasa	
Specialized	Elective	Computer Structure Ⅰ	0059	School Credit	1									2												Shinokawa Toshiyuki	
Specialized	Elective	Computer Structure Ⅱ	0060	School Credit	1											2										Shinokawa Toshiyuki	
Specialized	Elective	Algorithm and Data Structure Ⅰ	0061	School Credit	1									2												Kadomura Hideki,Aso Tsukasa	
Specialized	Elective	Algorithm and Data Structure Ⅱ	0062	School Credit	1											2										Kadomura Hideki,Furuyama Shoichi	
Specialized	Elective	Discrete Mathematics Ⅰ	0063	School Credit	1											2										Ito Nao	

Specialized	Elective	Applied Physics Ⅰ	0069	School Credit	1	2	Yoshii Yotsumi	
Specialized	Elective	Applied Physics Ⅱ	0070	School Credit	1	2	Yoshii Yotsumi	
General	Elective	Physical Education Ⅳ	0075	Academic Credit	1	1	Ohashi Chisato,Hayashi Naoto	
General	Elective	Cross-cultural Training For The English-Speaking World	0090	School Credit	3	3 3	Terasaki Yukiko	
General	Elective	Cross-cultural Training For Japan Sea Rim	0091	School Credit	3	3 3	Terasaki Yukiko	
General	Elective	Historical Science Ⅱ	0092	Academic Credit	1	1	Ichishima Akiyuki	
General	Elective	Philosophy Ⅰ	0093	Academic Credit	1	1	Muranaka Tatsuya	
General	Elective	Philosophy Ⅱ	0094	Academic Credit	1	1	Muranaka Tatsuya	
General	Elective	Economics Ⅰ	0095	Academic Credit	1	1	Niisato Yasutaka	
General	Elective	Economics Ⅱ	0096	Academic Credit	1	1	Niisato Yasutaka	
General	Elective	Comprehensive English Ⅳ	0097	Academic Credit	1	1	Moananu Charlton	
General	Elective	Comprehensive English Ⅴ	0098	Academic Credit	1	1	Moananu Charlton	
General	Elective	English Practicum Ⅰ	0101	Academic Credit	1	1	Yamamura Hiroto	
General	Elective	English Practicum Ⅱ	0102	Academic Credit	1	1	Yamamura Hiroto	
General	Elective	Chinese Ⅰ	0103	Academic Credit	1	1	Hoshino Akemi	
General	Elective	Russian Ⅰ	0105	Academic Credit	1	1	Yamamoto Yuki	
General	Elective	Japanese Expression	0106	School Credit	1	2	Kubo Yoko	
General	Elective	Historical Science Ⅰ	0107	Academic Credit	1	1	Ichishima Akiyuki	
General	Elective	Chinese Ⅱ	0108	Academic Credit	1	1	Hoshino Akemi	
General	Elective	Russian Ⅱ	0110	Academic Credit	1	1	Yamamoto Yuki	

General	Elective	Advanced Mathematics Ⅰ	0117	Academic Credit	1	1	Kawai Hitoshi	
General	Elective	Advanced Mathematics Ⅱ	0118	Academic Credit	1	1	Kawai Hitoshi	
Specialized	Elective	Internship	0076	School Credit	2	4	Oguma Hiroshi	
Specialized	Elective	Creative Engineering Design Ⅰ	0077	Academic Credit	2	2	Furuyama Shoichi	
Specialized	Elective	Creative Engineering Design Ⅱ	0078	Academic Credit	2	2	Oguma Hiroshi	
Specialized	Compulsory	Experiments on Electronic and Computer Engineering Ⅲ	0079	School Credit	3	3 3	Hayase Yoshikazu,Akiguchi Shunsuke,Oguma Hiroshi,Mizumoto Iwao, Aso Tsukasa,Yoshii Yotsumi,Furuyama Shoichi	
Specialized	Elective	Electromagnetism Ⅰ	0080	School Credit	1	2	Shina Toru	
Specialized	Elective	Electromagnetism Ⅱ	0081	School Credit	1	2	Shina Toru	
Specialized	Elective	Electric Circuit Ⅲ	0082	School Credit	1	2	Tsukada Akira	
Specialized	Elective	Semiconductor Devices	0083	School Credit	1	2	Yoshii Yotsumi	
Specialized	Elective	Electronic Systems Ⅰ	0084	School Credit	1	2	Yamaguchi Akifumi	
Specialized	Elective	Electronic Systems Ⅱ	0085	School Credit	1	2	Yamaguchi Akifumi	
Specialized	Elective	Electrical Communication Engineering Ⅰ	0086	School Credit	1	2	Mizumoto Iwao	
Specialized	Elective	Electrical Communication Engineering Ⅱ	0087	School Credit	1	2	Mizumoto Iwao	

Specialized	Elective	Control Engineering Ⅰ	0088	School Credit	1													2								Oguma Hiroshi	
Specialized	Elective	Control Engineering Ⅱ	0089	School Credit	1															2						Oguma Hiroshi	
Specialized	Elective	Communication Systems Ⅰ	0111	School Credit	1													2								Aso Tsukasa	
Specialized	Elective	Communication Systems Ⅱ	0112	School Credit	1															2						Aso Tsukasa	
Specialized	Elective	Operating System Ⅰ	0113	Academic Credit	1													1								Akiguchi Shunsuke	
Specialized	Elective	Operating System Ⅱ	0114	Academic Credit	1													1								Akiguchi Shunsuke	
Specialized	Elective	Numerical Computation	0115	School Credit	1															2						Furuyama Shoichi	
Specialized	Elective	Discrete Mathematics Ⅱ	0116	School Credit	1													2								Hayase Yoshikazu	
Specialized	Elective	Applied Mathematics Ⅰ	0119	School Credit	1													2								Matoba Ryuichi	
Specialized	Elective	Applied Mathematics Ⅱ	0120	School Credit	1															2						Matoba Ryuichi	
Specialized	Elective	Applied Physics Ⅲ	0121	School Credit	1													2								Ito Nao	
Specialized	Elective	Applied Physics Ⅳ	0122	School Credit	1															2						Ito Nao	
General	Elective	Physical Education Ⅴ	0233	Academic Credit	1																	1				Hayashi Naoto	
General	Elective	Overseas Program in English Speaking Countries	0235	School Credit	3																	3		3		Terasaki Yukiko	
General	Elective	Overseas Program in the Japan Sea Rim	0241	School Credit	3																	3		3		Terasaki Yukiko	
General	Elective	Japanese Language and Culture	0244	School Credit	1																	2				Kubo Yoko	
General	Elective	Law	0245	School Credit	1																	2				Takakura Fumito	
General	Elective	English Practicum Ⅲ	0246	School Credit	1																	2				Yamamura Hiroto	

General	Elective	Chinese Ⅲ	0247	School Credit	1																	2				Hoshino Akemi	
General	Elective	Russian Ⅲ	0249	School Credit	1																	2				Yamamoto Yuki	
Specialized	Compulsory	Graduation Research	0234	School Credit	12																	12		12		Oguma Hiroshi	
Specialized	Elective	Digital Signal Processing Ⅰ	0236	Academic Credit	1																	1				Oguma Hiroshi	
Specialized	Elective	Electronic Circuits Ⅲ	0237	Academic Credit	1																			1		Ito Nao	
Specialized	Elective	Electronic Circuits Ⅳ	0238	Academic Credit	1																			1		Ito Nao	
Specialized	Elective	Electromagnetic Wave Engineering	0239	School Credit	1																	2				Shina Toru	
Specialized	Elective	Applied Electromagnetic Systems	0240	School Credit	1																			2		Mizumoto Iwao	
Specialized	Elective	Sensor Engineering	0242	School Credit	1																	2				Mizumoto Iwao	
Specialized	Elective	Digital Signal Processing Ⅰ	0243	Academic Credit	1																	1				Oguma Hiroshi	
Specialized	Elective	Technical English	0250	School Credit	1																			2		Matoba Ryuichi	
Specialized	Elective	Computer-Based Measurement Systems Ⅰ	0251	Academic Credit	1																	1				Yoshii Yotsumi	
Specialized	Elective	Computer-Based Measurement Systems Ⅱ	0252	Academic Credit	1																	1				Yoshii Yotsumi	
Specialized	Elective	Computer Networks Ⅰ	0253	Academic Credit	1																			1		Aso Tsukasa	
Specialized	Elective	Computer Networks Ⅱ	0254	Academic Credit	1																			1		Aso Tsukasa	
Specialized	Elective	Software Engineering Ⅰ	0255	School Credit	1																	2				Hayase Yoshikazu	
Specialized	Elective	Software Engineering Ⅱ	0256	School Credit	1																			2		Hayase Yoshikazu	

Specialized	Elective	Media Engineering Ⅰ	0257	School Credit	1	2	Shina Toru	
Specialized	Elective	Media Engineering Ⅱ	0258	School Credit	1	2	Shina Toru	
Specialized	Elective	Computer Engineering Ⅰ	0259	Academic Credit	1	1	Furuyama Shoichi	
Specialized	Elective	Computer Engineering Ⅱ	0260	Academic Credit	1	1	Furuyama Shoichi	
Specialized	Elective	Information Theory	0261	School Credit	1	2	Hayase Yoshikazu	
Specialized	Elective	Applied Mathematics Ⅲ	0262	Academic Credit	2	2	Matoba Ryuichi	
Specialized	Elective	Applied Mathematics Ⅳ	0263	Academic Credit	2	2	Matoba Ryuichi	

Toyama College	Year	2020	Course Title	Health Education

Course Information

Course Code	0004	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Hayashi Naoto		

Course Objectives

At the completention of this course, students will be able to
1.Understand about knowledge and state of Health generally.
2.Recognize necessity of keeping health, and learning behavior for acting healthy.
3.Understand training methods for improving own fitness level and sports performance.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	We can understand knowledge of htalth genellary, and think of health which is own problem actively.	We can understand knowledge of htalth genellary, and think of health which is own problem.	We can't understand knowledge of htalth genellary, and think of health which is own problem.
Achievement 2	We can recognize the necessary of health promotion in our lifetime, and understand about abilities and behavior to live hearthy correctly.	We can recognize the necessary of health promotion in our lifetime, and understand about abilities and behavior to live hearthy.	We can't recognize the necessary of health promotion in our lifetime, and understand about abilities and behavior to live hearthy.
Achievement 3	We can understand the methods to improve our own fitness and sports performance correctly.	We can understand the methods to improve our own fitness and sports performance.	We can't understand the methods to improve our own fitness and sports performance.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	1.Learning basic theory about promotion health and acquire behavior for health actions. 2.Understanding the generationg factors about contemporary health problems for example "life style related disease" "mental health" "occupational disease".
Style	The classes are executed in the form of lecture using texts basically. But according to detail of lecture, we have active learning, group discussion, group working.
Notice	The text and work-note are used every lectures. And work-note are cheked by teacher every tests. "Private conversation" "Use of mobile phone" is unacceptable in lectures. As a result is under 60 points, student can make-up a resit by an application. If a result of resit is filled with established stanndard, an estimation becomes 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation & Talking about general health	We take an explanation of the syllabuse and think about health problem in Japan.
		2nd	Life style related diseass & Health(1)	We learn about life style related disease and think about own health.
		3rd	Life style related diseass & Health(2)	We surely understand exercise, meals, rest which affect health.
		4th	Life style related diseass & Health(3)	We learn effict of smoking and drinking alcohole, and think the social problems which are caused by smoking and drinking alcohole.
		5th	Infectious disease	We learn about Infectious disease and think about own health.
		6th	Physical and mental health(1)	We learn several desires and understand actions which are caused by adjustment mechanism for keep mental stability.
		7th	Physical and mental health(2)	We understand psychosomatic correlation using some cases, and think own stress relief method.
		8th	First aid	We learn about first aid and know about how to help in own life.
	2nd Quarter	9th	Cultural characteristic of sports(1)	We learn that sports conpetition is cultural action for knowing sciense researches and artistic activities.
		10th	Cultural characteristic of sports(2)	We learn about sports doping from the perspective of sports morals.
		11th	Anatomy &Biomechanics	We remember official name of bones & muscles and understand about expression & mechanism of muscular contractions.

		12th	How to learn sports(1)	We understand traning methods in response to skills and abilityies and learn about tatics making use of these training.
		13th	How to learn sports(2)	We understand effective training methods in response to various processes.
		14th	How to learn sports(3)	We learn fitness components and understand training principle & fundamental rule.
		15th	Test	We have a test, and produce own work book after the test.
		16th	Class evaluation	We pursue self-estimation and mutual-estimation.

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	Physical Education Ⅰ

Course Information

Course Code	0005	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	「Active Sports 総合版」大修館書店		
Instructor	Ohashi Chisato,Hayashi Naoto		

Course Objectives

1. From the point of veiw of lifelong sports, taking interest in exercise and physical activity.
2. Making habits of collective actions (fairness, cooperation, responsibility).

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	We can judge own and mates'correct actions and have effects on to active independently in preparations and activities.	We can judge correct actions, cooperate with mates and join in preparations and activities.	We can't judge correct actions, cooperate with mates and join independently in preparations and activities.
評価項目2	We can understand about own ability and politic skills/ intensity of exercise. And we can work for getting practical skills and improvement fitness.	We can follow teacher's directions about exercise themes, and acquire basic skills of exercise & physical.	We can't follow teacher's directions, and acquire basic skills of exercise & physical fitness.
評価項目3	We can active safely for ourselves and others. As necessary we act with aoiding risks and call for attention to others.	We can active safely for ourselves, and as necessary act with avoiding risks.	We can't active safely.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	1. Throgh practicing sports and exercise, growing up nature and ability to commune with lifelong-sports. 2. Planing health promotion and improvement physical fitness, and growing up behavior to live brightly and vigourous.
Style	Warm-up and basic physical training are carried out all together, and then the main activities are separated into boys and girls. Throughout the year, basic physical training is continued and 4 ball-game sports are carried out in accordance with a season.
Notice	Promotion for safety counterplan. In 3rd to 15th classes, student selects 2 sports and pursue these in 12 times (1 sports 6 times * 2). As a result is under 60 points, student can make-up a resit by an application. If a result of resit is filled with established stanndard, an estimation becomes 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation & Training Collective Actions	We take an explanation of the syllabuse and train for collective actions.
		2nd	1st Fitness Test	We understand the method of fitness tests and take these. Then we estimate own fitness level and know own fitness levels.
		3rd	1st Fitness Test	We understand the method of fitness tests and take these. Then we estimate own fitness level and know own fitness levels.
		4th	Volleyball(1)	We understand about overhand-pass, underhand-pass and play pass-games.
		5th	Volleyball(2)	We understand some kind of serves.And we don't only serve for other players and also receive serves.
		6th	Volleyball(3)	We understand volleyball attacks and play mini-games by easier rules.
		7th	Volleyball(4)	We understand regular rules and arrenge rules to play games.
		8th	Volleyball(5)	We play and referee games with obeying rules.
	2nd Quarter	9th	Volleyball(6)	We take individual skills test and have league games.
		10th	Ultimate(1)	We understand q peculiarity of frying-disk and take individual skills like pass and catch.
		11th	Ultimate(2)	We make good use individual skills during mini-games, 2 on 2/ 3 on 2.
		12th	Ultimate(3)	We play games in cooperation with teammates by basic rules.
		13th	Ultimate(4)	We understand regular rules and arrenge rules to play games.

		14th	Ultimate(5)	We play and referee games with obeying rules.
		15th	Ultimate(5)	In accordance with game schedule, we manage and play games together.
		16th		
2nd Semester	3rd Quarter	1st	2nd Fitness Test	We take fitness tests and estimate own fitness level. We know own fitness levels.
		2nd	2nd Fitness Test	We take fitness tests and estimate own fitness level. We know own fitness levels.
		3rd	Basketball(1)	We take individual skills like pass, dribble and shoot.
		4th	Basketball(2)	We make good use individual skills during mini-games, 1 on 1/ 2 on 1.
		5th	Basketball(3)	We play games in cooperation with teammates by basic rules.
		6th	Basketball(4)	We understand regular rules and arrenge rules to play games.
		7th	Basketball(5)	We play and referee games with obeying rules.
		8th	Basketball(6)	We take individual skills test and have league games.
	4th Quarter	9th	Tag Rugby(1)	We take individual skills like straight-pass, screw-pass, pop-passand and gut-pass.
		10th	Tag Rugby(2)	We understand about attack and defence for rugby and play these.
		11th	Tag Rugby(3)	We understand rules and attake using free spaces.
		12th	Tag Rugby(4)	We defend systematically in games.
		13th	Tag Rugby(5)	We have league games and find out our team's problems.
		14th	Tag Rugby(6)	In accordance with game schedule, we manage and play games together.
		15th	Class Evaluation	We pursue self-estimation and mutual-estimation.
		16th		

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	30	0	0	20	50	0	100
基礎的能力	30	0	0	0	0	0	30
専門的能力	0	0	0	0	50	0	50
分野横断的能力	0	0	0	20	0	0	20

Toyama College	Year	2020	Course Title	Comprehensive Japanese I A

Course Information

Course Code	0006	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	Comprehensive Japanese :Modern literature(Taishukan Shoten)		
Instructor	Kubo Yoko		

Course Objectives

This course aims to develop students' reading, writing and speaking ability through reading japanese literature and essays.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Read and write Kanji on great level.	Read and write Kanji.	Can't read and write Kanji.
Achievement 2	Fully understand japanese literature and essays	Understand japanese literature and essays.	Can't understand japanese literature and essays.
Achievement 3	Express your idea about Japanese literature and culture fluently.	Express your idea about Japanese literature and culture.	Can' t express your idea about Japanese literature and culture.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	This course aims to develop students' reading, writing and speaking ability through reading the text. Take Kanji test every week for enriching your vocabulary.
Style	
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	orientation	Explanation of syllabus
		2nd	East and West of Water	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		3rd	East and West of Water	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		4th	East and West of Water	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		5th	Modern poem	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		6th	Modern poem	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		7th	Modern poem	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		8th	Translating Tanka	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
	2nd Quarter	9th	Translating Tanka	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		10th	Translating Tanka	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		11th	The Coat	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		12th	The Coat	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		13th	The Coat	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		14th	The Coat	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		15th	Test	
		16th	Review Test	

Evaluation Method and Weight (%)

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

Cross Area Proficiency	20	0	0	0	0	0	20

Toyama College	Year	2020	Course Title	Comprehensive Japanese I B

Course Information

Course Code	0007	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Kondo Shugo		

Course Objectives

Gimukyōiku reberu no kokugo-ryoku no fukushū to teichaku o mezasu to tomoni, ronri-teki bunshō oyobi bungaku-teki bunshō o konkyo ni motodzuki ronri-teki ni rikai suru nōryoku o sodateru. Kanji ya goku ni tsuite mo, mazuwa gimukyōiku reberu no fukushū to teichaku o mezasu. Shōronbun o kaku chikara no dodai o kizuku. Nihonjin ga korai aidoku shite kita koten o yomi rikai suru koto de, nihonjin to shite no kiso-teki kyōyō to tayōna mono no mikata o mi ni tsukeru.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Syouronbun wo kakukoto ga dekiru	Syouronbun ga aruteido kakeru	Syouronbun ga kakenai
Achievement 2	Koten wo rikaisurukoto ga dekiru	Koten wo aruteido rikaisurukoto ga dekiru	Koten wo rikai surukoto ga dekinai
Achievement 3	Kokugo no chishiki ga aru	Kokugo no chishiki ga aruteido aru	Kokugo no chishiki ga tarinai

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	Koten & Writing no basic wo manabu
Style	Kougi keishiki
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation	yoku yomi yoku wakaru
		2nd	Kobun Nyumon	yoku yomi yoku wakaru
		3rd	Chigo no Sorane	yoku yomi yoku wakaru
		4th	Ebusshi Ryosyu	yoku yomi yoku wakaru
		5th	Ebusshi Ryosyu	yoku yomi yoku wakaru
		6th	Kanbun Nyumon	yoku yomi yoku wakaru
		7th	Gyoho no ri	yoku yomi yoku wakaru
		8th	Dasoku	yoku yomi yoku wakaru
	2nd Quarter	9th	Gojippo Hyappo	yoku yomi yoku wakaru
		10th	Tyosan Boshi	yoku yomi yoku wakaru
		11th	E-mail	yoku kakukoto ga dekiru
		12th	Sho-Ronbun	yoku kakukoto ga dekiru
		13th	Sho-Ronbun	yoku kakukoto ga dekiru
		14th	Sho-Ronbun	yoku kakukoto ga dekiru
		15th	Sho-Ronbun	yoku kakukoto ga dekiru
		16th	test	yoku rikai dekiru

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	10	0	10	0	10	100
Basic Proficiency	70	10	0	10	0	10	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	History Ⅰ

Course Information

Course Code	0008	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ichishima Akiyuki		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

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		
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 (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	0	0	0

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

Toyama College	Year	2020	Course Title	Music

Course Information

Course Code	0009	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ishii Tetsuo		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

Course Plan

			Theme	Goals
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 (%)

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

Toyama College	Year	2020	Course Title	Arts

Course Information

Course Code	0010	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Takahata Nobuo		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

Course Plan

			Theme	Goals
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 (%)

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

Toyama College	Year	2020	Course Title	Calligraphy

Course Information

Course Code	0011	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Tatsuta Masami		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

Course Plan

			Theme	Goals
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 (%)

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

Toyama College	Year	2020	Course Title	Comprehensive English Ⅰ

Course Information

Course Code	0012	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials	New Discovery English Communication Ⅰ （Kairyudo）		
Instructor	Rakuyama Susumu		

Course Objectives

Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment).
Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters.
Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Exceeds: speaks smoothly with no major breakdowns or noticeable pauses. Pronunciation is clear and easy to understand. Used a wide range of recently studied vocabulary and patterns. Grammar was nearly free of mistakes.	Meets: speaks smoothly with some breakdowns and a few pauses. Pronunciation is sometimes clear and understandable. Used some of recently studied vocabulary and patterns. A few Grammar mistakes.	Approaches: speaks but with some major breakdowns and many long pauses. Pronunciation is not clear and a bit difficult to understand. Used only a few recently studied vocabulary and patterns. A lot of grammar mistakes.
Achievement 2	Exceeds: expresses his or her own opinion and gives an effective reason or explanation. Vocabulary and grammar/word usage are appropreate.	Meets: expresses his or her own opinion and gives a reason or explanation, but with only the minimum amount of information necessary. Errors in vocabulary and grammar/word usage occur but do not impede communication.	Approaches: expressis his or her own opinion but unable to give a reason or explanation.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	Teacher will devise most of the topics used for individual, pair and group activities as well as composition and presentations.
Style	Teacher will create, guide, facilitate and evaluate student, pair, group activities. Students must actively participate in all activities such as listening, speaking, reading and writing.
Notice	・Bring your own dictionary (Japanese-English, English-Japanese) ・Take a weekly quiz and must retest if failed. The passing score is 60%. ・Can take makeup exam in need aid up to maximum of 60 points

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	
		2nd	Lesson 1 Useful Tools for Communication	
		3rd	Lesson 1 Useful Tools for Communication	
		4th	Lesson 1 Useful Tools for Communication	
		5th	Lesson 2 Japanese Foods in the World	
		6th	Lesson 2 Japanese Foods in the World	
		7th	Lesson 2 Japanese Foods in the World	
		8th	Midterm Exam	
	2nd Quarter	9th	Lesson 4 Food Chain	To know how to make a presentation 1
		10th	Lesson 4 Food Chain	To know how to make a presentation 2
		11th	Lesson 4 Food Chain	To know how to make a presentation 3
		12th	Lesson 5 Useless or Useful?	To know how to make a presentation 4
		13th	Lesson 5 Useless or Useful?	To know how to make a presentation 5

		14th	Lesson 5 Useless or Useful?	To know how to make a presentation 6
		15th	Term-end Exam	
		16th	Evaluation	
2nd Semester	3rd Quarter	1st	Review	
		2nd	Lesson 6 The Arctic and the Antarctic	
		3rd	Lesson 6 The Arctic and the Antarctic	
		4th	Lesson 6 The Arctic and the Antarctic	
		5th	Lesson 7 Pride of Japan	
		6th	Lesson 7 Pride of Japan	
		7th	Lesson 7 Pride of Japan	
		8th	Midterm Exam	
	4th Quarter	9th	Lesson 8 From Boston with Love	To make an effective presentation 1
		10th	Lesson 8 From Boston with Love	To make an effective presentation 2
		11th	Lesson 9 A Priceless Heritage in Japan	To make an effective presentation 3
		12th	Lesson 9 A Priceless Heritage in Japan	To make an effective presentation 4
		13th	Lesson 10 Warm-Hearted King of Pop	To make an effective presentation 5
		14th	Lesson 10 Warm-Hearted King of Pop	To make an effective presentation 6
		15th	Year-end Exam	
		16th	Evaluation	

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	English Expression Ⅰ

Course Information

Course Code	0013	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	English Grammar Navigator in 27 Lessons （テキストには書き込みをしないこと。ノートを必ず用意する）		
Instructor	Morita Takuya		

Course Objectives

基礎的な英文法力の構築を図り、豊かな英語表現力を身につけることを目標とする。

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
評価項目1 文法構造理解	文法項目にあげられている文法事項に関し、そのシステムを理解し、関連する問題を正確に解答できる	文法項目にあげられている文法事項に関し、そのシステムを理解し、関連する基本問題を正確に解答できる	基礎的な文法構造システムの理解が不十分なため、基礎的問題を正確に解答できない
評価項目2　文法運用能力	既習文法項目に関する知識を用いながら、複合的な問題に関しても正確に解答することが出来る	複合的な問題に関しても、ある程度、正確に解答することが出来る	既習文法項目が定着していないために複合的な問題に関しては対応することが出来ない
評価項目3　授業への取り組み姿勢	積極的に授業参加し教室全体の学習意欲を高め、協調性を持って能力の向上を図っている	協調性を持って能力の向上を図っている	協調性に欠け､授業の進行を妨げたり、他学生の学習を阻害している

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	全員参加型授業とは、多彩な形式の問題に取り組みながら疑問に関する質問等を積極的に発信することにより自己の英語基礎力を高めることを目標としている。授業を通し、英文法の知識を身につけ英語の表現力を豊かにすることを目標とする。その目標を達成するためには、家庭で授業内容の復習をすることが必須である。教科書に出題されている問題は答えをテキストに書き込まず、何度も問題を解き、パターンを暗記してもあいたい。
Style	通年： 教師単独による全員参加型授業 （質疑応答型）
Notice	教官の指示に従い、授業中は集中し、問題に取り組むこと。評価が６０点に満たない場合は、不認定となる。真面目な学習態度で授業に臨めば評価が６０点以上になるような考査が出題されるので、しっかりと授業に取り組んでほしい。基本的に追認試験は行わないが、正当な理由があれば願い出によって追認試験を受けることができる。追認試験の結果、単位の修得が認められた学生はその評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス　& 問題演習	授業の目標を理解する。「文の種類」に関する問題演習
		2nd	英文法講座	時制と完了形　（１）
		3rd	英文法講座	時制と完了形　（２）
		4th	英文法講座	時制と完了形　（３）
		5th	問題演習	テキスト　第1章、第2章
		6th	問題演習	テキスト　第3章、第4章
		7th	英文法講座	助動詞　（１）
		8th	中間考査	第1章　～第4章に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。授業内容重視です。
	2nd Quarter	9th	英文法講座	中間考査結果考察後、助動詞　（２）
		10th	英文法講座	助動詞　（３）
		11th	問題演習	テキスト　第5章、第6章、第7章
		12th	英文法講座	態　（１）
		13th	英文法講座	態　（２）
		14th	問題演習	テキスト　第8章、第9章
		15th	Review & 成績評価・確認	期末考査結果考察後、成績評価に関する総評。
		16th	期末試験	第5章 ～第9章に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。
2nd Semester	3rd Quarter	1st	英文法講座	不定詞　（１）
		2nd	英文法講座	不定詞　（２）
		3rd	英文法講座	不定詞　（３）
		4th	英文法講座	不定詞　（４）
		5th	問題演習	テキスト　第10章、第11章、第12章、Plus不定詞
		6th	英文法講座	動名詞・分祠　（１）
		7th	英文法講座	動名詞・分祠　（２）

		8th	中間考査	第10章、第11章、第12章、Plus不定詞に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。
	4th Quarter	9th	英文法講座	動名詞・分祠　（３）
		10th	英文法講座	動名詞・分祠　（４）
		11th	英文法講座	動名詞・分祠　（５）
		12th	問題演習	テキスト　第13章、第14章
		13th	問題演習	テキスト　第15章、第16章、第17章、Plus分詞
		14th	英文法講座	関係詞　（１）
		15th	Review & 成績評価・確認	期末考査結果考察後、成績評価に関する総評。
		16th	期末試験	第13　～ 第17章、Plus分詞に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。

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	100	0	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

Toyama College	Year	2020	Course Title	English Conversation Ⅰ

Course Information

Course Code	0014	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Year-round	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Szolnoky Norbert,Randall Jack		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

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		
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 (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	0	0	0

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

Toyama College	Year	2020	Course Title	Fundamental Mathematics A I

Course Information

Course Code	0015	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	4
Textbook and/or Teaching Materials	新版 基礎数学 実教出版，新版 基礎数学 演習 実教出版，はぎ取り式練習ドリル 数学Ⅰ数学Ⅱ 数研出版		
Instructor	Fujii Senshu		

Course Objectives

整式、有理式の四則演算を円滑に行うことができる。
基本的な等式，不等式を証明することができる。
因数定理を用いて3次方程式を解くことができる。
グラフの移動を理解し、べき関数・分数関数・無理関数のグラフが書ける。
基本的な関数の逆関数を求めることができる。

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	整式・有理式の四則演算（因数分解，商と余りを求めることを含む）の問題を解くことがができる。	整式・有理式の四則演算（因数分解，商と余りを求めることを含む）の基本的な問題を解くことがができる。	整式・有理式の四則演算（因数分解，商と余りを求めることを含む）の基本的な問題を解くことがができない。
評価項目2	因数定理を用いて、高次式の因数分解や高次方程式の問題を解くことができる。	因数定理を用いて、高次式の因数分解や高次方程式の基本的な問題を解くことができる。	高次式の因数分解や高次方程式の基本的な問題を解くことができない。
評価項目3	グラフの移動についてよく理解し、べき関数・分数関数・無理関数のグラフの問題を解くことができる。	グラフの移動について理解し、べき関数・分数関数・無理関数のグラフの基本的な問題を解くことができる。	べき関数・分数関数・無理関数のグラフの基本的な問題を解くことができない。
評価項目4	逆関数に関する問題を解くことができる。	逆関数に関する基本的な問題を解くことができる。	逆関数に関する基本的な問題を解くことができない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	中学で学んだ事項を基礎とし，文字式の取り扱いの理解を深め，基本的な方程式，不等式の解法を学ぶ.
Style	教員単独による講義及び演習
Notice	評価が60点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を60点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス 整式の加法，減法，乗法	等式の性質を確認する．単項式，多項式の加法，減法ができる.
		2nd	整式の乗法，因数分解	整式の積を分配法則を用いて展開することができる．公式を用いて展開，因数分解することができる.
		3rd	因数分解，整式の除法	いろいろな因数分解をすることができる．整式の除法で，商と余りを求めることができる.
		4th	分数式	分数式の四則演算をすることができる.
		5th	実数	実数の定義を理解できる．根号を含む式の計算ができる.
		6th	恒等式	恒等式の概念を理解し，恒等式に関する問題を解くことができる.
		7th	剰余の定理，因数定理	剰余の定理，因数定理を理解し整式の計算に応用することができる.
		8th	中間試験	1回から7回までの講義内容について，中間試験を実施する.
	2nd Quarter	9th	因数分解	因数定理を用いて，高次式の因数分解ができる.
		10th	等式の証明	基本的な等式の証明を行うことができる.
		11th	不等式の証明	基本的な不等式の証明を行うことができる.
		12th	グラフの移動，べき関数	グラフの移動を，方程式の変化から理解することができる．基本的なべき関数のグラフをかくことができる.
		13th	分数関数，無理関数	基本的な１次分数関数，無理関数の性質を理解し，グラフをかくことができる.
		14th	逆関数	逆関数の考え方を理解し，基本的な逆関数を求めることができる.
		15th	期末試験	9回から15回までの講義内容について、期末試験を実施する。
		16th	成績評価・確認	期末試験で定着度が低い項目に関して講義する.

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	70	0	0	0	0	30	100

基礎的能力	70	0	0	0	0	30	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

Toyama College	Year	2020	Course Title	Fundamental Mathematics AⅡ

Course Information

Course Code	0016	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	4
Textbook and/or Teaching Materials	新版 基礎数学 実教出版，新版 基礎数学 演習 実教出版，はぎ取り式練習ドリル 数学Ⅰ数学Ⅱ 数研出版		
Instructor	Fujii Senshu		

Course Objectives

指数関数・対数関数の概念を理解しグラフをかくことができる.
指数法則を理解し，指数，対数を含む式の計算ができる.
簡単な指数，対数方程式・不等式を解くことができる.
直線や2次曲線の方程式を求めたり，グラフの概形を書くことができる.

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	指数関数のグラフをかくことができる．指数法則を用いて指数を含む式の計算ができる．指数方程式，不等式を解くことができる.	指数法則を用いて指数を含む式の計算ができる.	指数法則を用いて指数を含む式の計算ができない.
評価項目2	対数関数のグラフをかくことができる．指数法則を用いて対数を含む式の計算ができる．対数方程式，不等式を解くことができる.	指数法則を用いて対数を含む式の計算ができる.	指数法則を用いて対数を含む式の計算ができない.
評価項目3	与えられた条件を満たす，直線，円，だ円の方程式を求めることができる．不等式が表す領域を図示できる.	与えられた条件を満たす，直線，円，だ円の方程式を求めることができる.	与えられた条件を満たす，直線，円，だ円の方程式を求めることができない.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	指数関数、対数関数を学び、そのグラフの特徴を理解し、指数、対数方程式・不等式の解法を学習する。直線や2次曲線の方程式およびグラフを学ぶことにより、方程式と図形という概念について理解を深める。
Style	教員単独による講義及び演習
Notice	評価が60点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を60点とする。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	ガイダンス 累乗根	後期授業に関するガイダンスを行う．平方根の概念を拡張した累乗根を理解し求めることができる.
		2nd	指数の拡張	指数を整数および有理数の場合に拡張し、その計算法（指数法則）を学び，基本的な計算ができる.
		3rd	指数関数とグラフ	指数関数を定義し，そのグラフをかくことができる.
		4th	指数方程式・指数不等式	指数を含む基本的な方程式，不等式を解くことができる.
		5th	対数関数	対数を学び，対数関数のグラフをかくことができる．指数法則を用いて，対数を含む式を計算することができる．.
		6th	対数方程式・対数不等式	対数を含む基本的な方程式，多項式を解くことができる.
		7th	常用対数	常用対数を用いて対数方程式，不等式を解くことができる．常用対数を幾何的に増加する変数の問題に応用することができる.
		8th	中間試験	1回から7回までの講義内容について、中間試験を実施する.
	4th Quarter	9th	平面の点	内分点の座標、2点間の距離を公式式を用いて求めることができる.
		10th	直線の方程式	与えられた条件を満たす直線の方程式を求めることができる.
		11th	2直線の関係	2直線の関係、垂直・平行条件を学なび，応用することができる.
		12th	円の方程式	与えられた条件を満たす円の方程式を求めることができる.
		13th	円の方程式 2次曲線	円の接線の方程式を求めることができる．だ円、双曲線、放物線の特徴を学び，グラフをかくことができる.
		14th	不等式の表す領域 領域における最大・最小	不等式の表す領域を図示することができる．それをある最大・最小の問題に応用できる.
		15th	期末試験	9回から15回までの講義内容について、期末試験を実施する。

		16th	不等式の表す領域 領域における最大・最小 成績評価・確認	不等式の表す領域を図示することができる．それをある最大・最小の問題に応用できる.

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	70	0	0	0	0	30	100
基礎的能力	70	0	0	0	0	30	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

Toyama College	Year	2020	Course Title	Fundamental Mathematics C

Course Information

Course Code	0017	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	新版 基礎数学 実教出版，新版 基礎数学演習　実教出版, 新版 微分積分I 実教出版，新版 微分積分I演習　実教出版, はぎ取り式練習ドリル数学Ⅰ標準編，はぎ取り式練習ドリル数学Ⅱ標準編		
Instructor	Nakagawa Yoshihiko		

Course Objectives

基本的な順列，組み合わせの問題を解くことができる.
二項定理を用いて展開したときの係数を求めることができる.
三角関数を用いて三角形の問題を解くことができる.
簡単な規則性をもつ数列の一般項を求めることができる.
等差数列，等比数列の和を求めることができる.

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	基本的な場合の数を計算できる．２項定理を用いて係数を計算できる.	基本的な場合の数を計算できる.	場合の数を計算できない.
評価項目2	加法定理やそれから生じる公式を理解できる．それらを用いて三角関数の問題を解くことができる.	加法定理やそれから生じる公式を理解できる.	加法定理やそれから生じる公式を理解できない.
評価項目3	基本的な数列の一般項を求めることができる．それらの和を計算することができる.	基本的な数列の一般項を求めることができる.	基本的な数列の一般項を求めることができない.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	場合の数の概念を説明し，いろいろな場合の数の計算方法を講義する．三角関数の三角形の問題への応用を講義する．規則性をもつ数列を数学的に表現し扱う方法を講義する.
Style	教員単独による講義と演習
Notice	追認試験：評価が60点に満たないものは、進級後、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者は、その評価を60点とする

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	ガイダンス 集合	集合の概念とその演算を学ぶ.
		2nd	集合の要素の個数 場合の数	基本的な集合の要素の個数について学ぶ．場合の数の基本的な考え方を学ぶ.
		3rd	順列	いろいろな順列について学ぶ.
		4th	組合せ	組合せの基本的な考えと計算を学ぶ.
		5th	二項定理	二項定理について学ぶ.
		6th	条件と命題	命題の概念とその真偽や必要条件，十分条件等を学ぶ.
		7th	命題と証明	命題とその証明について学ぶ.
		8th	中間試験	第１週から第７週までの演習内容について中間試験を実施する。
	4th Quarter	9th	三角関数の加法定理	三角関数の加法定理を学ぶ.
		10th	加法定理の応用	三角関数の倍角の公式，半角の公式を学ぶ.
		11th	加法定理の応用	三角関数の積と和・差についての関係や，合成を学ぶ.
		12th	数列	数列の基本的な考え方を学ぶ.
		13th	等差数列	等差数列とその一般項について学ぶ.
		14th	等比数列	等比数列とその一般項について学ぶ.
		15th	期末試験	第９週から第１４週までの演習内容について期末試験を実施する。
		16th	数列の和	いろいろな数列の和について学ぶ. 和の記号を学ぶ。

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	70	0	0	0	0	30	100
基礎的能力	70	0	0	0	0	30	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

Toyama College	Year	2020	Course Title	Fundamental Mathematics B I

Course Information

Course Code	0018	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	新版 基礎数学 実教出版，新版 基礎数学 演習 実教出版，はぎ取り式 練習ドリル 数学I 数学II 数研出版		
Instructor	Sakurai Hideto		

Course Objectives

2次関数の一般形を標準形に直し，グラフの概形を書くことが出来る．グラフを利用して，最大値，最小値，2次不等式の問題を解くことができる．
グラフの移動を理解し、べき関数・分数関数・無理関数のグラフが書ける。
基本的な関数の逆関数を求めることができる。

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	任意の2次関数を標準形に直し，グラフをかくことができる．	任意の2次関数を標準形に直すことができる．	任意の2次関数を標準形に直すことができない．
評価項目2	２次関数の最大値，最小値を求めることができる．	標準形で表される２次関数の最大値，最小値を求めることができる．	標準形で表される２次関数の最大値，最小値を求めることができない．
評価項目3	２次方程式，２次不等式の解を求めることができる．	２次方程式の解を求めることができる．	２次方程式の解を求めることができない．

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	２次関数の講義を行う．次に２次方程式の解法について講義する．
Style	教員単独による講義及び演習
Notice	評価が60点に満たない者は，願い出により追認試験を受けることができる．追認試験の結果，単位の修得が認められた者にあっては，その評価を60点とする．

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス 関数	関数の概念について理解する．
		2nd	2次関数のグラフ	標準形で与えられた関数のグラフをかくことができる．
		3rd	2次関数のグラフ	2次関数の一般形を，平方完成を用いて標準形に直すことができる
		4th	2次関数の決定	与えられた条件を満たす２次関数の方程式を求めることができる．
		5th	2次関数の最大・最小	２次関数のグラフを用いて，最大値・最小値を求めることができる．
		6th	2次関数の最大・最小	２次関数のグラフを用いて，最大値・最小値を求めることができる．
		7th	２次方程式	２次方程式を公式を用いて解くことができる．
		8th	中間試験	第1回から第7回までの内容の理解度を測るため中間試験を行う．
	2nd Quarter	9th	複素数	複素数の概念を理解し，四則演算ができる．
		10th	判別式	２次方程式の解を判別することができる．
		11th	解と係数の関係	２次方程式の解と係数の関係を理解できる．それを用いて基本的な対称式の問題に応用できる．
		12th	２次関数のグラフと２次方程式	２次関数と２次方程式の関係を理解できる
		13th	２次関数のグラフと２次不等式	２次関数のグラフを用いて２次不等式を解くことができる．
		14th	２次関数のグラフと２次不等式	２次関数のグラフを用いて２次不等式を解くことができる．
		15th	期末試験	第9回以降の講義内容の理解度を測るため，期末試験を行う．
		16th	復習	期末試験の結果から，定着度の低いと思われる項目を学ぶ．

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	演習・提出物	その他	Total
Subtotal	70	0	0	0	30	0	100
基礎的能力	70	0	0	0	30	0	100
専門的能力	0	0	0	0	0	0	0
分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Fundamental Mathematics BⅡ

Course Information

Course Code	0019	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	新版 基礎数学 実教出版，新版 基礎数学 演習 実教出版，はぎ取り式 練習ドリル 数学I 数学II 数研出版		
Instructor	Sakurai Hideto		

Course Objectives

三角関数の主要な値を求めることが出来る．三角関数の性質を理解し応用することが出来る．

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	三角関数の主要な値に関する問題を解くことができる。	三角関数の主要な値に関する基本的な問題を解くことができる。	三角関数の主要な値に関する基本的な問題を解くことができない。
評価項目2	三角関数のグラフに関する問題を解くことができる。	三角関数のグラフに関する基本的な問題を解くことができる。	三角関数のグラフに関する基本的な問題を解くことができない。
評価項目3	三角関数を含む方程式・不等式に関する問題を解くことができる。	三角関数を含む方程式・不等式に関する基本的な問題を解くことができる。	三角関数を含む方程式・不等式に関する基本的な問題を解くことができない。
評価項目4	三角形の問題に正弦定理，余弦定理を応用することができる．三角形の 面積を求めることができる.	三角形の問題に正弦定理，余弦定理を応用することができる.	三角形の問題に正弦定理，余弦定理を応用することができない.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	2年生から学ぶ，微分積分，線形代数等で必要となる三角関数の基本的な事項を学ぶことにより，論理的な思考を育む.
Style	教員単独による講義及び演習
Notice	評価が60点に満たない者は，願い出により追認試験を受けることができる．追認試験の結果，単位の修得が認められた者にあっては，その評価を60点とする.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	ガイダンス 鋭角の三角比	直角三角形の正弦，余弦，正接を学ぶ.
		2nd	三角比の拡張	90度を超える角度の三角比を学ぶ.
		3rd	正弦定理と余弦定理	三角形の正弦定理，余弦定理とその応用を学ぶ.
		4th	正弦定理と余弦定理	三角形の正弦定理，余弦定理とその応用を学ぶ.
		5th	三角形の面積	三角形の面積の公式(ヘロンの公式を含む）を学ぶ.
		6th	一般角と弧度法	360度を超える角度と弧度法について学ぶ.
		7th	三角関数	三角関数とその代表値を学ぶ.
		8th	中間試験	後期第1回から第7回までの内容の定着度を測るため中間試験を行う.
	4th Quarter	9th	三角形のグラフ	基本的な三角関数のグラフを学ぶ．関数の移動，拡大・縮小を学ぶ.
		10th	三角形のグラフ	基本的な三角関数のグラフを学ぶ．関数の移動，拡大・縮小を学ぶ.
		11th	三角方程式・不等式	三角関数を含む基本的な方程式・不等式の解法を学ぶ.
		12th	逆三角関数	逆三角関数の概念とその基本的な値を学ぶ.
		13th	三角関数の相互関係	三角関数の相互関係とその応用を学ぶ.
		14th	三角関数の相互関係	三角関数の相互関係とその応用を学ぶ.
		15th	期末試験	後期第9回以降の内容の定着度を測るため期末試験を行う.
		16th	期末試験の解説 成績確認	期末試験の解説を行う．期末試験の結果を受け，定着度の低いと思われる項目を解説する.

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	演習・提出物	その他	Total
Subtotal	70	0	0	0	30	0	100
基礎的能力	70	0	0	0	30	0	100
専門的能力	0	0	0	0	0	0	0
分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Physics ＩA

Course Information

Course Code	0020	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	「宇宙一わかりやすい高校物理（力学・波動）」鯉沼拓 著，為近和彦 監修（学研教育出版）		
Instructor	Ohtake Yukiko		

Course Objectives

1．位置・変位・速度・加速度の関係を知っており，問題に適用して解くことができる.
2．等加速度運動の公式を知っており，放物運動等の問題に適用して解くことができる.
3．様々な力の公式を知っており，力のつりあいの問題等に適用して解くことができる.

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	位置・変位・速度・加速度の関係を知っており，応用問題に適用して解くことができる.	位置・変位・速度・加速度の関係を知っており，基本的な問題に適用して解くことができる.	位置・変位・速度・加速度の関係についての知識が曖昧で，基本的な問題も解くことができない.
評価項目2	等加速度運動の公式を知っており，放物運動等の応用問題に適用して解くことができる.	等加速度運動の公式を知っており，放物運動等の基本的な問題に適用して解くことができる.	等加速度運動の公式についての知識が曖昧で，放物運動等の基本的な問題も解くことができない.
評価項目3	様々な力の公式を知っており，力のつりあい等の応用問題に適用して解くことができる.	様々な力の公式を知っており，力のつりあい等の基本的な問題に適用して解くことができる.	様々な力の公式についての知識が曖昧で，力のつりあい等の基本的な問題も解くことができない.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	物体の運動の記述方法について学ぶ．また，等加速度運動の公式を用いて放物運動の問題等を解いたり，様々な力の公式を用いて力のつり合いの問題等を解いたりできるようになる.
Style	学生の理解度に応じて，授業計画を変更することがある．教員単独で，講義および演習を実施する.
Notice	定期試験80点，平常点（小テスト・宿題など）20点とし，合計60点以上を合格とする．評価が60点に満たない者は，願い出により追認試験を受けることができる．追認試験の結果，単位の修得が認められた者にあっては，その評価を60点とする.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	はじめに，単位	シラバスの内容を確認し，ガイダンスを行う．単位量あたりの大きさの復習を通して，単位換算や次元解析を学ぶ.
		2nd	位置・速度・加速度1	位置・速度・加速度の定義を学び，三者の関係を理解する.
		3rd	位置・速度・加速度2	x-t図・v-t図・a-t図について学ぶ．x-t図・v-t図におけるグラフの傾きの意味を理解する.
		4th	位置・速度・加速度3	v-t図・a-t図において，グラフと横軸が囲む面積の意味を理解する．等加速度直線運動の公式を導く.
		5th	等加速度直線運動1	等加速度直線運動の公式を用いて解ける，基本的な問題の演習を行う.
		6th	等加速度直線運動2	等加速度直線運動の公式を用いて解ける，標準的な問題の演習を行う．落体の問題も含む.
		7th	等加速度直線運動3	等加速度直線運動の公式を用いて解ける，応用問題の演習を行う．落体の問題も含む.
		8th	中間試験	講義中に扱った演習問題の類題を出題する.
	2nd Quarter	9th	中間試験解説，速度の分解・合成	中間試験の答えを確認する．速度など，向きのある物理量の分解や合成を学ぶ.
		10th	放物運動１	水平投射の問題に取り組む.
		11th	放物運動２	斜方投射の問題に取り組む.
		12th	いろいろな力	弾性力・圧力・浮力の公式を学ぶ.
		13th	力のつりあい1	力のつりあいの基本的な問題を解く.
		14th	力のつりあい2	力のつりあいの標準問題～応用問題を解く.
		15th	期末試験	講義中に扱った演習問題の類題を出題する
		16th	前期まとめ	前期期末試験の解説を行い，前期の成績評価を確認する.

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	80	0	0	0	20	0	100
基礎的能力	80	0	0	0	20	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

Toyama College	Year	2020	Course Title	Chemistry Ⅰ A

Course Information

Course Code	0021	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

1. Learn about the relationship between daily life and chemistry.
2. Understand the composition of the substance and the constituent particles, and can roughly write chemical formulas. In addition, it is possible to understand the bonds constituting the substance.
3. Understand the amount of substance and write chemical equations. In addition, understand the relationship between the amount of substance and the chemical equation, and solve basic problems.
4. Understand the definitions of acids and bases, basic matters concerning pH, quantitative relation in neutralization, and solve basic problems.
5. Explain the definition of oxidation / reduction and understand the function of oxidizing / reducing agents. In addition, they can understand redox reactions and solve basic problems. Understand the basics of batteries and electrolysis, which are applications of redox reactions.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Component of substance and chemical bonding	Most chemical formulas can be written. Understand and explain various chemical bonds. Understand the characteristics and properties of crystals and explain from actual substances.	Understand the composition of substance, and the constituent particles. You can write almost any chemical formula. Understand the bonds that make up the substance. Understand the characteristics and properties of various crystals.	I do not understand the basic matters about constituent particles. Can't write chemical formula. I do not understand the various chemical bonds. I do not understand the characteristics and properties of various crystals.
Amount of Substance and chemical reaction formula	Understand the amount of substances and solve various combined problems. Understand the relationship between the amount of substance and the chemical reaction fomula, and solve a little complicated problem.	Understand the amount of substances and solve basic problems. Write chemical reaction formulas. Understand the relationship between the amount of substance and chemical reaction formulas, and solve basic problems.	Can't write chemical reaction formula. I do not understand the amount of substance. I do not understand the relationship between the amount of substance and the chemical reaction formula.
Acids/Bases	Understand and explain the definitions of acids and bases. Understand pH and calculate pH. Understand the quantitative relationships in neutralization and solve a more complicated problems.	Understand the definitions of acids and bases. Understand the basics of pH. Understand the quantitative relationships at the time of neutralization and solve basic problems.	Can't explain the definition of acid / base. I do not understand about pH. I do not understand the quantitative relationship at the time of neutralization.
Oxidatiom/Reduction	I understand that many of the chemical reactions are redox reactions. The function of the oxidizing agent and the reducing agent can be explained using a half-reaction formula. It can solve the problem about the quantitative relation of the redox reaction. Understand the fundamentals of batteries and electrolysis, which are applications of redox reactions, and solve problems related to quantitative relationships.	Explain the definition of oxidation / reduction. Understand the function of oxidizing and reducing agents. Understand redox reactions and solve basic problems. In addition, understands basic matters about batteries and electrolysis, which applied redox reactions.	Can't explain the definition of oxidation / reduction. I do not understand what oxidizing and reducing agents are. I do not understand basic matters about the batteries and the mechanism of electrolysis.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	In this lesson you will learn the basics of chemistry. First, from a microscopic point of view, we understand that substance are composed of atoms, molecules, and ions. Then, from a macro perspective, you will understand that chemical reactions are microscopic changes between molecules and ions, and learn the basics to understand quantitative relationships. In addition, students will learn the concepts and rules of basic chemical reactions such as neutralization and oxidation / reduction, and will be able to understand them quantitatively.
Style	Lectures, exercises and experiments by teachers alone

Notice	Those with less than 60 points can take a supplementary examination upon request. Those who have earned the credits as a result of the supplementary examination will be given a score of 60 points. Lesson improvement measures: In order to fix the content, mini test and assignment (homework) will be imposed. Experiments and audiovisual materials may be incorporated. The lesson plan may be changed depending on the students' understanding.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	orientation To conduct experiments safel	Explain class policies and plans based on the syllabus. After that, caution relating to the experiment are explained.
		2nd	Separation and purification of substances	Understand that substances can be classified into pure substances and mixtures. Also know some ways to get pure substances from mixtures
		3rd	The elements of substance Atomic structure	Learn about the composition of substances and the elements that are the basic components of substances. Then, learn about the atomic structure, which is the smallest particle among the constituent particles of substance.
		4th	Electron configuration Periodic table of the elements	Understand electron configuration and valence electrons. Also learn the relationship between valence electrons and properties of element . After that, learn the history of the periodic table of elements and learn that some properties of atoms can be predicted from the periodic table.
		5th	[Experiment] Separation of mixture	Perform experiments on distillation and filtration.
		6th	Generation of ions Ionic bond Compositional formula	Learn about the relation between ion and electron configuration. Then, learn how to represent polyatomic ions and chemical formulas. afterwards, Learn the characteristics and representation of ionic crystals.
		7th	Covalent bond Molecule	Learn how to make covalent bonds and the molecules that can be formed by covalent bonds.
		8th	a mid-term examination	Questions on basic matters related to the structure of atoms, molecules, and ions.
	2nd Quarter	9th	Exam answers and commentary Three states of substance, and thermal motion	Return the mid-term exam answers and explain the qtuastions what they do not understand . After that, we will learn that there are three states of matter, and the particles of each state has different thermal motion .
		10th	Polarity of molecular, and intermolecular force	
		11th	Covalent crystal Metallic bond	Learn about the characteristics of each crystal due to the difference in the bonding method.
		12th	Atomic weight, molecular weight, formula weight	Learn that the minimum weight of atom becomes easier to handle by incorporating the relative weight of atom, called atomic weight.
		13th	Relationship between amount of substance and mass / number / volume	Substance is an aggregate of many particles, but we will learn that expressing it in units of moles makes it easier to handle mass and volume.
		14th	the concentration of a solution [Practice] Amount of substance	Learn how to represent the concentration of a solution, so that you can actually adjust the solution. Do practice quantitative relationships.
		15th	Final examination	Ask about the types of bonds and the differences in their properties. Also check whether the amount of the substance can be expressed in various units.
		16th	Grade evaluation / confirmation	Checking the results of the final exam Questionnaire regarding class evaluation

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	Comprehensive Japanese I C

Course Information

Course Code	0022	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	Comprehensive Japanese :Modern literature(Taishukan Shoten)		
Instructor	Kubo Yoko		

Course Objectives

This course aims to develop students' reading, writing and speaking ability through reading japanese literature and essays.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Read and write Kanji on great level.	Read and write Kanji.	Can't read and write Kanji.
Achievement 2	Fully understand japanese literature and essays	Understand japanese literature and essays.	Can't understand japanese literature and essays.
Achievement 3	Express your idea about Japanese literature and culture fluently.	Express your idea about Japanese literature and culture.	Can' t express your idea about Japanese literature and culture.

Assigned Department Objectives

MCCコア科目

Teaching Method

Outline	This course aims to develop students' reading, writing and speaking ability through reading the text. Take Kanji test every week for enriching your vocabulary.
Style	
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Orientation	Explanation of syllabus
		2nd	Understanding Other People	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		3rd	Understanding Other People	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		4th	Rashomon	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		5th	Rashomon	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		6th	Rashomon	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		7th	Rashomon	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		8th	Test	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
	4th Quarter	9th	The Faces as Media	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		10th	The Faces as Media	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		11th	The Faces as Media	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		12th	Yumejuya	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		13th	Yumejuya	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		14th	Yumejuya	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		15th	Test	
		16th	Review Test	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	10	0	0	0	20	100
Basic Proficiency	70	10	0	0	0	20	100
Specialized Proficiency	0	0	0	0	0	0	0

Cross Area Proficiency	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Comprehensive Japanese I D

Course Information

Course Code	0023	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	Comprehensive Japanese :Classical literature(Taishukan Shoten)		
Instructor	Kubo Yoko		

Course Objectives

This course aims to develop students' basic knowledge about Japanese history and cuture and spread the field of view through reading Japanese classical literature and Chinese classics.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Read and understand Japanese classical literature deeply.	Read and understand Japanese classical literature.	Can't read and understand Japanese classical literature.
Achievement 2	Read and understand Chinese classics deeply.	Read and understand Chinese classics.	Can't read and understand Chinese classics.
Achievement 3	Express your idea about Japanese literature and culture fluently.	Express your idea about Japanese literature and culture.	Can' t express your idea about Japanese literature and culture.

Assigned Department Objectives

MCCコア科目

Teaching Method

Outline	This course aims to develop students' basic knowledge about Japanese history and cuture and spread the field of view through reading Japanese classical literature and Chinese classics. Join the class activity and express your idea about Japanese literature and culture.
Style	
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Orientation	Explanation of syllabus
		2nd	Tsurezuregusa	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		3rd	Tsurezuregusa	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		4th	Tsurezuregusa	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		5th	Historical story	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		6th	Historical story	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		7th	Historical story	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		8th	Test	
	4th Quarter	9th	Makuranososhi	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		10th	Makuranososhi	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		11th	Makuranososhi	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		12th	Chinese classic poem	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		13th	Chinese classic poem	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		14th	Chinese classic poem	Deeply understand the idea of the text and enrich knowledge of Japanese literature and culture.
		15th	Test	
		16th	Review Test	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	10	0	20	0	0	100
Basic Proficiency	70	10	0	20	0	0	100
Specialized Proficiency	0	0	0	0	0	0	0

Cross Area Proficiency	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Physics ⅠB

Course Information

Course Code	0024	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	「宇宙一わかりやすい高校物理（力学・波動）」鯉沼拓 著，為近和彦 監修（学研教育出版）		
Instructor	Ohtake Yukiko		

Course Objectives

1．運動の三法則を知っており，問題に適用して解くことができる.
2．仕事・エネルギーとその関係を知っており，問題に適用して解くことができる.
3．力積・運動量とその関係を知っており，問題に適用して解くことができる.

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	運動の三法則を知っており，応用問題に適用して解くことができる.	運動の三法則を知っており，基本的な問題に適用して解くことができる.	運動の三法則についての知識が曖昧で，基本的な問題も解くことができない.
評価項目2	仕事・エネルギーとその関係を知っており，応用問題に適用して解くことができる.	仕事・エネルギーとその関係を知っており，基本的な問題に適用して解くことができる.	仕事・エネルギーとその関係についての知識が曖昧で，基本的な問題も解くことができない.
評価項目3	力積・運動量とその関係を知っており，応用問題に適用して解くことができる.	力積・運動量とその関係を知っており，基本的な問題に適用して解くことができる.	力積・運動量とその関係についての知識が曖昧で，基本的な問題も解くことができない.

Assigned Department Objectives

Teaching Method

Outline	物体の運動について，運動方程式・運動量と力積の関係・エネルギーと仕事の関係を用いて解析できるようになることを目指す.
Style	学生の理解度に応じて，授業計画を変更することがある．教員単独で，講義および演習を実施する.
Notice	定期試験80点，平常点（小テスト・宿題など）20点とし，合計60点以上を合格とする．評価が60点に満たない者は，願い出により追認試験を受けることができる．追認試験の結果，単位の修得が認められた者にあっては，その評価を60点とする.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	いろいろな力	物理学Ⅰの内容をふりかえると共に，摩擦力の求め方を学ぶ.
		2nd	運動方程式1	運動方程式の立て方を学び，基本的な問題を解く.
		3rd	運動方程式2	運動方程式の標準的な問題を解く.
		4th	運動方程式3	運動方程式の応用問題を解く.
		5th	速度の合成，相対速度	速度の合成および相対速度の標準的な問題を解く.
		6th	慣性力	慣性力の標準的な問題を解く.
		7th	中間試験	講義中に扱った演習問題の類題を出題する.
		8th	仕事とエネルギー1	仕事と仕事率について説明する.
	4th Quarter	9th	仕事とエネルギー2	運動エネルギーの公式を導出し，運動エネルギーと仕事の関係（エネルギーの原理）を導く.
		10th	仕事とエネルギー3	重力による位置エネルギーと弾性力による位置エネルギーの公式を導出する.
		11th	仕事とエネルギー4	落下運動を例に力学的エネルギーが保存されることを示し，力学的エネルギー保存の法則について説明する.
		12th	運動量と力積1	運動量と力積について説明し，それらの関係を導く.
		13th	運動量と力積2	外部から力が働かないとき，運動量が保存されることを示す.
		14th	運動量と力積3	反発係数（はねかえり）係数について説明し，運動量保存の法則に関する演習を行う.
		15th	期末試験	講義中に扱った演習問題の類題を出題する.
		16th	後期まとめ	後期期末試験の解説を行い，後期の成績評価を確認する.

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	80	0	0	0	20	0	100
基礎的能力	80	0	0	0	20	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

Toyama College	Year	2020	Course Title	Chemistry ＩB

Course Information

Course Code	0025	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

1. 物質量について理解し，化学反応式が書ける。また、物質量と化学反応式の関係について理解し，基本的な問題が解ける。
2. 酸・塩基の定義、ｐHについて基本的事項、中和のときの量的な関係を理解し，基本的な問題を解くことができる。
3. 酸化・還元の定義を説明することができ、酸化剤・還元剤のはたらきについて理解できる。また、酸化還元反応について理解し，基本的な問題を解くことができる。酸化還元反応の応用である電池や電気分解について，基本的事項を理解している。

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
物質量と化学反応式	いろいろな化学反応式が書ける 物質量と化学反応式の関係について理解し，少し複雑な問題が解ける	基本的な反応の化学反応式が書ける 物質量と化学反応式の関係について理解し，基本的な問題が解ける	化学反応式が書けない 物質量と化学反応式の関係について理解していない
酸・塩基	酸・塩基の定義を理解し，説明することができる ｐHについて理解し，ｐHを求めることができる 中和のときの量的関係を理解し，応用的な問題を解くことができる 塩について理解している。	酸・塩基の定義を理解している ｐHについて基本的事項を理解している 中和のときの量的な関係を理解し，基本的な問題を解くことができる	酸・塩基の定義が説明できない ｐHについて理解していない 中和のときの量的関係を理解していない
酸化・還元	化学反応の多くが酸化還元反応であることを理解している。 酸化剤と還元剤のはたらきについて，半反応式を用いて説明することができる。 酸化還元反応の量的関係についての問題を解くことができる。 酸化還元反応の応用である電池や電気分解について，基本的事項を理解し，量的な関係についての問題を解くことができる。	酸化・還元の定義を説明することができる 酸化剤・還元剤のはたらきについて理解している 酸化還元反応について理解し，基本的な問題を解くことができる また，酸化還元反応の応用である電池や電気分解について，基本的事項を理解している。	酸化・還元の定義を説明できない 酸化剤・還元剤が何であるかを理解していない 電池や電気分解の仕組みについて，基本的事項を理解していない

Assigned Department Objectives

MCCコア科目

Teaching Method

Outline	マクロ的な立場から見た化学反応が微視的な分子やイオンの変化であることや，その量的な関係を捉えるために基本的事項を学習する。また，基本的な化学反応である中和反応，酸化・還元反応について，概念や法則などを学び，量的なとらえ方もできるようになる。
Style	教員単独による講義，演習，実験
Notice	評価が６０点に満たない者は，願い出により追認試験を受けることができる。追認試験の結果，単位の修得が認められた者にあっては，その評価を６０点とする。 授業改善策：内容の定着のため，小テスト，課題プリント（宿題）などを課す。実験や視聴覚教材を取り入れることがある。 学生の理解度によって，授業計画を変更することがある。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	化学反応式・イオン反応式 化学反応式の表す意味	様々な化学反応を式で表すことができるようになるための基礎を学ぶ。また，化学反応式は反応を表すだけでなく，反応の量的な関係も表していることを学習する。
		2nd	化学反応の量的関係	化学反応によって変化する物質の質量や体積を測定値と化学反応式から求め，反応の量的関係を習得する。
		3rd	【演習】化学反応の量的関係	化学反応の量的関係について，演習を行う。
		4th	酸・塩基の基本事項	酸・塩基の定義，強弱，価数と電離度について学ぶ。
		5th	水素イオン濃度 ｐＨ	酸・塩基の度合いを測る尺度としてのｐＨの求め方について学ぶ。また，身近な物質のｐＨがどれくらいかを知る。
		6th	中和 中和滴定	中和反応と，中和滴定の実験の仕方・計算について学習する。
		7th	【実験】中和滴定	中和滴定の実験を行い，溶液の濃度を求める。また，器具の使い方，薬品の取り扱い方も習得する。
		8th	塩 加水分解	中和によって生じる塩の種類と，塩を加水分解したときの反応について学ぶ。
	4th Quarter	9th	中間試験	化学反応と量的関係について，また，酸・塩基に関する事項について理解できているかを問う。
		10th	中間試験の解答	中間試験の答案を返却し，解答・解説することで，今までの復習と理解できていなかったことを確認する。

		11th	酸化と還元 酸化数と酸化・還元	化学変化の主反応である酸化・還元反応の定義を学ぶ。その後，酸化・還元反応を知る上で有効な酸化数の求め方を学習する。また，酸化数の変化によって，酸化・還元反応がわかることを学ぶ。
		12th	酸化剤・還元剤	酸化剤・還元剤について学習する。また，酸化還元反応の量的関係を学ぶ。
		13th	金属のイオン化傾向 電池	金属のイオン化傾向の違いによって反応の仕方が異なることを学ぶ。また，基本的な電池のしくみを学び，電池は酸化還元反応を利用していることや，実用電池のしくみについて学習する。最近の電池事情について触れる。
		14th	電気分解	電気分解によってどのような反応が起こるのかを学習する。
		15th	期末試験	さまざまな酸化還元反応について，その現象と量的な関係が理解できているかどうかを問う。
		16th	成績評価・確認	期末試験の成績確認 授業評価アンケート

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	80	0	0	0	0	20	100
基礎的能力	80	0	0	0	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

Toyama College	Year	2020	Course Title	Fundamental Experiments for Manufacturing Engineers

Course Information

Course Code	0001	Course Category	Specialized / Compulsory
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Shinokawa Toshiyuki,Yamaguchi Akifumi,Akiguchi Shunsuke,Kadomura Hideki,Matoba Ryuichi,Mizumoto Iwao,Yoshii Yotsumi		

Course Objectives

1．電子情報工学科において今後必要とされる知識・技術の基礎的な項目を身につける．
2．電子回路，工作機器などに関する基礎的知識を身につける．
3．ワープロソフト，表計算ソフト，プログラミングに関する基礎的知識を身につける．

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
基礎知識全般	電子情報工学科において今後必要とされる知識・技術の基礎的な項目が十分身についた．	電子情報工学科において今後必要とされる知識・技術の基礎的な項目が身についた．	電子情報工学科において今後必要とされる知識・技術の基礎的な項目が身についていない．
ハードウェア系	電子回路，工作機器などに関する基礎的知識が十分身についた．	電子回路，工作機器などに関する基礎的知識が身についた．	電子回路，工作機器などに関する基礎的知識が身についていない．
ソフトウェア系	ワープロソフト，表計算ソフト，プログラミングに関する基礎的知識が十分身についた．	ワープロソフト，表計算ソフト，プログラミングに関する基礎的知識が身についた．	ワープロソフト，表計算ソフト，プログラミングに関する基礎的知識が身についていない．

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	電子情報工学科において今後必要とされる知識・技術の基礎的な項目について，実際に手を動かしながら習得することを目標とする．電気電子，工作，プログラミングなどの基本的事項について機材を用いて適宜実験を行う．
Style	前期は５テーマをそれぞれ２～４週程度の期間をかけて行う．テーマによってはグループに分かれて実施する．後期は２テーマをそれぞれ7週程度かけて行う．
Notice	レポートは全テーマについて、定められた期限内に必ず提出しなければならない 到達目標の達成度評価方法（レポートの内容、質問に対する回答） レポート評価（レポートの書き方、実験結果の整理と検討、提出期限） 到達目標の達成度を確認するために、提出されたレポートに対して質問をする

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス	本実験実習における学習内容，方法を説明できる．
		2nd	レゴ	レゴマインドストームの構成，使用方法，プログラムを作成する下準備について理解できる．
		3rd	レゴ	レゴマインドストームを動作させるためのプログラム作成ツールの使用法が習得できる．
		4th	パソコン導入	コンピュータシステムについて，起動・終了やファイル操作など，基本的操作が行うことができる．
		5th	パソコン導入	メールツールとWebブラウザを使って，メールの送受信とWebブラウジングを行うことができる．
		6th	パソコン導入	オフィススイートを使って，文書作成や図表作成ができる．
		7th	実験レポート作成	実験レポートを作成ルールに従って作成できる．
		8th	電子工作	回路工作の基礎を理解できる．
	2nd Quarter	9th	電子工作	トランジスタを用いた相互インターフォンを作成できる．
		10th	電子工作	LEDフリップフロップについて理解できる．
		11th	電子工作	CdS明暗センサ制御について理解できる．
		12th	ロボット工作	ギヤボックスなどを作りマイコン制御を行う車両を製作できる
		13th	ロボット工作	制作した車両を制御するためのマイコン基板の実装と簡単なプログラミングができる
		14th	工場実習（図面・工作）	ボール盤と旋盤を使うことができる
		15th	工場実習（図面・工作）	ロボット車両とマイコン基板を固定する金具の製作できる
		16th	期末試験	実施せず
2nd Semester	3rd Quarter	1st	プログラム環境設定	ソフトウェア生成に利用される標準的なツールや環境の準備をすることができる。
		2nd	プログラム環境設定	ソフトウェア生成に利用される標準的なツールや環境を用意し、ソースプログラムをロードモジュールに変換して実行できる。
		3rd	プログラミング入門１	システムを開発する立場で，自動販売機システムの処理を時系列で説明ができる．

		4th	プログラミング入門２	論理的思考問題の解法について説明ができる.
		5th	プログラミング入門３	提示された問題を処理するための日本語の手順書を作成することができる.
		6th	プログラミング入門４	提示された問題を処理するための他者が作成した日本語の手順書を評価することができる.
		7th	プログラミング入門５	日本語の手順書にしたがって，Cプログラムを作成・実行することができる.
		8th	実験レポート作成	実験レポートを作成ルールに従って作成できる.
	4th Quarter	9th	基礎電気（導体の抵抗）	導体の抵抗は、その物質の材質や形状によって決まることについて説明できる
		10th	基礎電気（いろいろな抵抗）	様々な形状・種類の抵抗器について説明できる
		11th	基礎電気（導体の抵抗と接地）	電気機器の接地についてその必要性を説明できる
		12th	基礎電気（電力と電力量）	電力・電力量の意味を理解し、身近な電気機器の電力使用量を説明できる
		13th	基礎電気（電流の発熱作用）	ジュール熱を利用した電気機器の例を紹介しながら、電流の発熱作用を説明できる
		14th	基礎電気（熱電気現象）	電気－熱の相互変換の代表として、ゼーベック効果とペルチェ効果について説明できる
		15th	期末試験	
		16th	期末試験の解答	試験返却

Evaluation Method and Weight (%)

	試験	レポート	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	0	60	0	40	0	0	100
基礎的能力	0	0	0	0	0	0	0
専門的能力	0	60	0	40	0	0	100
分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Introduction to Ethics for Engineers

Course Information

Course Code	0002	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Akiguchi Shunsuke,Kadomura Hideki,Oguma Hiroshi		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

Course Plan

			Theme	Goals
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 (%)

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

Toyama College	Year	2020	Course Title	Fundamentals of Information Technology

Course Information

Course Code	0003	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	精選電気基礎（実教出版），精選電気基礎演習ノート（実教出版），ネットワーク社会における情報の活用と技術(実教出版)，精選電気基礎（実教出版）		
Instructor	Yamaguchi Akifumi,Akiguchi Shunsuke,Kadomura Hideki		

Course Objectives

1．電気に関する基本的な事項（オームの法則、キルヒホッフの法則など）を説明できる。
2．電気に関する基本的な諸量についてその計算方法を説明することができる。
3．コンピュータ，ICTに関する基礎的な知識と技術を学び，実際に活用する能力を習得する.

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	電気に関する基本的な事項について自律的に説明できる	電気に関する基本的な事項について教員の指導のもとに説明できる	電気に関する基本的な事項について説明できない
評価項目2	電気に関する基本的な諸量の計算方法について自律的に説明できる	電気に関する基本的な諸量の計算方法について教員の指導のもとに説明できる	電気に関する基本的な諸量の計算方法について計算できない
評価項目3	コンピュータ，ICTに関する基礎的な知識と技術を学び，実際に活用する能力を習得することが十分にできる.	コンピュータ，ICTに関する基礎的な知識と技術を学び，実際に活用する能力を習得することができる.	コンピュータ，ICTに関する基礎的な知識と技術を学び，実際に活用する能力を習得することができない.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	基本的な電気現象についての説明と各種の法則と計算法を理解する．また，情報について理解し，コンピュータおよびインターネットを利用して問題解決を行うための手法および作法，情報システムのしくみや基礎的技術を修得することを目標とする．授業では座学と平行して，家庭や社会生活に溢れている個々の事例についても説明を行う.
Style	電気電子の基礎及びコンピュータに関する基礎的技術にフォーカスし情報基礎として講ずる.
Notice	授業計画は，学生の理解度に応じて変更する場合がある. 評価が60点に満たない者は，願い出により追認試験を受けることができる．追認試験の結果，単位の修得が認められた者にあっては，その評価を60点とする.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	単位の計算	電気回路で用いる単位の計算方法が説明できる
		2nd	電気数学	電気回路で用いる指数法則の計算方法が説明できる
		3rd	電子と電流	自由電子の移動と電流について説明できる
		4th	直流回路の計算	抵抗の直列接続、並列接続回路についてその合成抵抗、回路の電流などの計算方法について説明できる
		5th	直並列回路の計算	抵抗の直並列接続についてその合成抵抗、回路の電流などの計算方法について説明できる
		6th	キルヒホッフの法則１	キルヒホッフの法則を活用した回路の連立方程式の立て方について説明できる
		7th	キルヒホッフの法則２	キルヒホッフの法則を活用した回路の連立方程式の立て方と電流の向きについて説明できる
		8th	中間試験	中間試験
	2nd Quarter	9th	情報の概念	情報の性質と特徴、情報の伝達手段、情報機器についての説明ができる。
		10th	情報の大きさ	情報の大きさ、情報のディジタル表現、２進数の取り扱いについて理解している。
		11th	情報の収集・整理	情報源の種類、情報の収集法、整理法について説明できる。
		12th	情報の加工・表現	情報加工の手段、情報加工に対する配慮について説明できる。
		13th	情報の発信・交換と評価	発信・交換前の注意事項・情報発信後の責任と評価について説明できる。
		14th	情報の管理とセキュリティ	情報セキュリティ対策、ネットワーク利用時のマナーについて説明できる。
		15th	期末試験	期末試験
		16th	期末試験の解答	試験返却

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	課題	その他	Total
Subtotal	85	0	0	0	15	0	100
基礎的能力	85	0	0	0	15	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

Toyama College	Year	2020	Course Title	Physical Education Ⅱ

Course Information

Course Code	0022	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	「Active Sports 総合版」大修館書店		
Instructor	,Hayashi Naoto		

Course Objectives

1. Realizing changes and improvement of own physical fitness.
2. Learing efficient and safe motions.
3.Acting and soliving some problem for skill improvement.

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	We can judge own and mates'correct actions and work on independently in preparations and activities.	We can judge correct actions, cooperate with mates and join in preparations and activities.	We can't judge correct actions, cooperate with mates and join independently in preparations and activities.
評価項目2	We can understand about own ability and politic skills/ intensity of exercise. And we can work for getting practical skills and improvement fitness.	We can follow teacher's directions about exercise themes, and acquire basic skills of exercise & physical.	We can't follow teacher's directions, and acquire basic skills of exercise & physical fitness.
評価項目3	We can active safely for ourselves and others. As necessary we act with aoiding risks and call for attention to others.	We can active safely for ourselves, and as necessary act with avoiding risks.	We can't active safely.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	1.With improvement for the basicphysical fitness, developping self-manegement-skills to releaze and get into own trim. 2. Developping behavior to consider and cooperate each other.
Style	Iwawaki takes charge of Judo sessions, and Hayashi and Ohashi take charge of fitness sessions, dance sessions and Badminton sessions. Female students can select dance sessions instead of Judo due to the defference of fitness levels between males and Females.
Notice	Promotion for safety counterplan. As a result is under 60 points, student can make-up a resit by an application. If a result of resit is filled with established stanndard, an estimation becomes 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation & 3rd Fitness Test	We take an explanation of the syllabuse and take fitness test.
		2nd	3rd Fitness Test	We understand the method of fitness tests and take these. Then we estimate own fitness level and know own fitness levels.
		3rd	Judo(1)	We understand about basic skills and manners and practice them.
		4th	Judo(2)	We understand some kind of interpersonal skills (Kumikata, Shintaidousa, Kuzushi and Ukemi).
		5th	Judo(3)	We understand and practice some kind of interpersonal skills (Kuzushi, Karadasabaki and Kake).
		6th	Judo(4)	We understand and practice some kind of interpersonal skills (Sasae, Harai and Kari).
		7th	Judo(5)	We have free practice, Randori for getting higher skills.
		8th	Judo(6)	We have a test match.
	2nd Quarter	9th	Badminton(1)	We understand and practice stroke and shot of badminton, drive, hair-pin and clear.
		10th	Badminton(2)	We understand and practice stroke and shot of badminton, drive, hair-pin, clear, drop, smash and serves .
		11th	Badminton(3)	We understand the rules of badminton singls games during playing on half coat singles games.
		12th	Badminton(4)	We play badminton singls games during playing on full coat singles games.
		13th	Badminton(5)	We understand the rules of badminton doubles games during playing doubles games.

		14th	Badminton(6)	We plan badminton games and enjoy them each other.
		15th	Class Evaluation	We pursue self-estimation and mutual-estimation.
		16th		
2nd Semester	3rd Quarter	1st	4th Fitness Test	We take fitness tests and estimate own fitness level. We know own fitness levels.
		2nd	4th Fitness Test	We take fitness tests and estimate own fitness level. We know own fitness levels.
		3rd	Gymnastics & Trainings(1)	We learne about correct movements of Radio gymnastics and challenge them.
		4th	Gymnastics & Trainings(2)	We perform Radio gymnastics with more precision.
		5th	Gymnastics & Trainings(3)	We have a test of Radio gymnastics.
		6th	Gymnastics & Trainings(4)	We learne about apparatus gymnastics and practice.
		7th	Gymnastics & Trainings(5)	We practice apparatus gymnastics atteractively.
		8th	Gymnastics & Trainings(6)	We have a test of apparatus gymnastics.
	4th Quarter	9th	Dance (1)	We make groups(3-10persons) and choose music for making dance performance.
		10th	Dance (2)	We think and practice dance composition for completing dance performance.
		11th	Dance (3)	We think and practice dance composition and make constitution of dance performances.
		12th	Dance (4)	We practice hard for making beautiful dance performances.
		13th	Dance (5)	We rehearsed dance performances for dance recital.
		14th	Dance (6)	We perform dance performance in front of class mates for test.
		15th	Class Evaluation	We pursue self-estimation and mutual-estimation.
		16th		

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	60	0	0	10	0	30	100
基礎的能力	20	0	0	0	0	30	50
専門的能力	40	0	0	0	0	0	40
分野横断的能力	0	0	0	10	0	0	10

Toyama College	Year	2020	Course Title	Comprehensive Japanese Ⅱ

Course Information

Course Code	0027	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Kondo Shugo		

Course Objectives

Gimukyōiku reberu no kokugo-ryoku no fukushū to teichaku o mezasu to tomoni, ronri-teki bunshō oyobi bungaku-teki bunshō o konkyo ni motodzuki ronri-teki ni rikai suru nōryoku o sodateru. Kanji ya goku ni tsuite mo, mazuwa gimukyōiku reberu no fukushū to teichaku o mezasu. Shōronbun o kaku chikara no dodai o kizuku. Nihonjin ga korai aidoku shite kita koten o yomi rikai suru koto de, nihonjin to shite no kiso-teki kyōyō to tayōna mono no mikata o mi ni tsukeru.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Syouronbun wo kakukoto ga dekiru	Syouronbun ga aruteido kakeru	Syouronbun ga kakenai
Achievement 2	Koten wo rikaisurukoto ga dekiru	Koten wo aruteido rikaisurukoto ga dekiru	Koten wo rikai surukoto ga dekinai
Achievement 3	Kokugo no chishiki ga aru	Kokugo no chishiki ga aruteido aru	Kokugo no chishiki ga tarinai

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	Koten & Writing no basic wo manabu
Style	Kougi keishiki
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation	yoku yomi yoku wakaru
		2nd	Kobun Nyumon	yoku yomi yoku wakaru
		3rd	Chigo no Sorane	yoku yomi yoku wakaru
		4th	Ebusshi Ryosyu	yoku yomi yoku wakaru
		5th	Ebusshi Ryosyu	yoku yomi yoku wakaru
		6th	Kanbun Nyumon	yoku yomi yoku wakaru
		7th	Gyoho no ri	yoku yomi yoku wakaru
		8th	Dasoku	yoku yomi yoku wakaru
	2nd Quarter	9th	Gojippo Hyappo	yoku yomi yoku wakaru
		10th	Tyosan Boshi	yoku yomi yoku wakaru
		11th	E-mail	yoku kakukoto ga dekiru
		12th	Sho-Ronbun	yoku kakukoto ga dekiru
		13th	Sho-Ronbun	yoku kakukoto ga dekiru
		14th	Sho-Ronbun	yoku kakukoto ga dekiru
		15th	Sho-Ronbun	yoku kakukoto ga dekiru
		16th	test	yoku rikai dekiru
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 (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	10	0	10	0	10	100
Basic Proficiency	70	10	0	10	0	10	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	History Ⅱ

Course Information

Course Code	0028	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	『新詳世界史Ｂ』帝国書院、『最新世界史図説 タペストリー』帝国書院		
Instructor	Yokota Kazuhiro		

Course Objectives

西欧史を中心とした学習を通じて、現代の国際社会がいかにして形成されてきたのかを理解する。教養としての知識に加え、歴史的事象・社会全体の見方・考え方を身につける。

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
評価項目1	西洋史における重要な出来事や人物に関して、詳細かつ正確な知識を習得している。	西洋史における重要な出来事や人物に関して、教養として最低限の基本的な知識を習得している。	西洋史における重要な出来事や人物に関して、一般的・常識的な知識すら習得できていない。
評価項目2	西洋史における主要な事象について、詳細な内容を知り、その歴史的意義を正確に理解している。	西洋史における主要な事象について、概要を概ね理解している。	西洋史における主要な事象について、基本的な知識と理解が不十分である。
評価項目3	西洋史の時系列的な流れと、西洋史の世界史全体における関係や位置づけを正確に理解している。	西洋史の時系列的な流れと、西洋史の世界史全体における関係や位置づけを概ね理解している。	西洋史の時系列的な流れと、西洋史の世界史全体における関係や位置づけを理解できていない。

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	西洋（西欧）史を中軸に据え、日本や諸地域も包摂していった「世界の一体化」という世界史の大きな流れを理解できるようになることが基本目標である。世界的な分業体制（近代世界システム）が展開されて成立した現代社会の諸課題を考察するために必要な素材（政治・経済・社会・文化のありよう）を、総合的かつ具体的に学習する。グローバル化が進む国際社会の中で活躍していくために必要な教養としての歴史知識も修得する。
Style	教員単独による講義
Notice	定期試験の成績を評価対象とする。中間試験と期末試験の総合得点（平均点）で60点以上を合格とする。 評価が６０点に満たないものは、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス	年間計画とシラバスの説明 科目全体の導入「歴史を学ぶ意味」、「ヨーロッパによる世界の一体化と現代」
		2nd	ヨーロッパ史の源流：ギリシア世界	ヘレニズム時代（ギリシア世界の変容と拡大）
		3rd	ヨーロッパ史の源流：ローマ世界Ⅰ	ローマ共和政
		4th	ヨーロッパ史の源流：ローマ世界Ⅱ	ローマの発展
		5th	ヨーロッパ史の源流：ローマ世界Ⅲ	ローマの地中海世界征服
		6th	ヨーロッパ史の源流：ローマ世界Ⅳ	内乱の一世紀、ローマ帝国の成立
		7th	ヨーロッパ史の源流：ローマ世界Ⅴ	ローマ帝国の繁栄（ローマの平和）
		8th	前期中間考査	１～7回の学習内容の確認
	2nd Quarter	9th	ヨーロッパ史の源流：ローマ世界Ⅵ	ローマ帝国の動揺と分裂
		10th	ヨーロッパ史の源流：ローマ世界Ⅶ	キリスト教の成立と発展
		11th	中世ヨーロッパ概説	中世に生じた変化と、ヨーロッパ各国の動向
		12th	近代ヨーロッパの成立Ⅰ	大航海時代
		13th	近代ヨーロッパの成立Ⅱ	ルネサンス
		14th	近代ヨーロッパの成立Ⅲ	宗教改革
		15th	期末試験	中間試験以降の学習内容の確認
		16th	補講・成績評価・確認	成績の評価と確認
2nd Semester	3rd Quarter	1st	ヨーロッパ主権国家体制の展開Ⅰ	スペインの覇権、ハプスブルク家の繁栄
		2nd	ヨーロッパ主権国家体制の展開Ⅱ	オランダとイギリスの台頭、フランスにおける王権強化
		3rd	ヨーロッパ主権国家体制の展開Ⅲ	17世紀の危機と三十年戦争、西欧国家体系の成立
		4th	ヨーロッパ主権国家体制の展開Ⅳ	イギリス革命
		5th	ヨーロッパ主権国家体制の展開Ⅴ	ヨーロッパ諸国の海外進出
		6th	欧米における近代社会の成長Ⅰ	産業革命と資本主義体制の成立
		7th	欧米における近代社会の成長Ⅱ	アメリカ独立革命
		8th	後期中間試験	16～23回の学習内容の確認
	4th Quarter	9th	欧米における近代社会の成長Ⅲ	フランス革命①アンシャン＝レジームから立憲君主政へ
		10th	欧米における近代社会の成長Ⅳ	フランス革命②共和政の成立とジャコバン独裁

		11th	欧米における近代社会の成長Ⅴ	ナポレオンによる帝政とヨーロッパ制覇
		12th	欧米における近代国民国家の発展Ⅰ	ウィーン体制とヨーロッパの再編、欧米列強による世界の分割支配
		13th	欧米における近代国民国家の発展Ⅱ	帝国主義の成立と欧米列強の対立
		14th	欧米における近代国民国家の発展Ⅲ	二つの世界大戦
		15th	学年末試験	中間試験以降の学習の確認
		16th	補講・成績評価・確認	成績の評価と確認

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	80	0	0	0	0	0	80
専門的能力	0	0	0	0	0	0	0
分野横断的能力	20	0	0	0	0	0	20

Toyama College	Year	2020	Course Title	Ethics

Course Information

Course Code	0029	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	越智 貢、他著『高等学校　改訂版　倫理』第一学習社		
Instructor	Muranaka Tatsuya		

Course Objectives

○青年期の課題の概要を理解する
○古今東西のさまざまな思想・哲学の概要について理解する。
○国内外の宗教の概要について理解する。

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	青年期の課題の概要を非常によく理解している。	青年期の課題の概要を理解している。	青年期の課題の概要を理解していない。
評価項目2	古今東西のさまざまな思想の概要について非常によく理解している。	古今東西のさまざまな思想の概要について理解している。	古今東西のさまざまな思想の概要について理解していない。
評価項目3	国内外の宗教の概要について非常によく理解している。	国内外の宗教の概要について理解している。	国内外の宗教の概要について理解していない。

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	青年期の課題を把握し、世界の哲学、思想、宗教を通史的に理解する。
Style	講義を中心とする。
Notice	学生の理解度や関心度に応じて授業計画を適宜、変更する場合がある。成績評価は4回の定期試験によって行う。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス、青年期の課題（1）	フロイトのいう防衛機制などについて理解する。
		2nd	青年期の課題（2）	マズローのいう欲求の構造などについて理解する。
		3rd	古代ギリシャの思想（1）	ソフィストたち、ソクラテス、プラトンの考え方などについて理解する。
		4th	古代ギリシャの思想（2）	アリストテレス、エピクロス派、ストア派の考え方などについて理解する。
		5th	世界の宗教（1）	ユダヤ教とキリスト教について理解する。
		6th	世界の宗教（2）	イスラームについて理解する。
		7th	世界の宗教（3）	仏教について理解する。
		8th	中間試験	
	2nd Quarter	9th	中間試験の解説、古代中国の思想（1）	孔子、孟子、荀子、韓非子の考え方などについて理解する。
		10th	古代中国の思想（2）	朱子、王陽明、老子、荘子の考え方などについて理解する。
		11th	日本による仏教の需要	聖徳太子の憲法十七条などについて理解する。
		12th	日本の仏教（1）	最澄と空海の考え方などについて理解する。
		13th	日本の仏教（2）	親鸞、道元、日蓮の考え方などについて理解する。
		14th	日本の陽明学	中江藤樹と熊沢蕃山の考え方などについて理解する。
		15th	期末試験	
		16th	期末試験の解説	試験の解説。
2nd Semester	3rd Quarter	1st	明治の啓蒙思想	福沢諭吉や中江兆民の考え方を理解する。
		2nd	日本における近代的自我の確立	夏目漱石の考え方などを理解する。
		3rd	日本の近代批評	小林秀雄や坂口安吾の考え方を理解する。
		4th	宗教改革	ルターとカルヴァンのプロテスタントの考え方を理解する。
		5th	モラリスト	パスカルの考え方などについて理解する。
		6th	近代の科学革命	コペルニクス、ケプラー、ガリレイ、ニュートンの考え方などについて理解する。
		7th	イギリス経験論	フランシス・ベーコン、バークリー、ヒュームの考え方などについて理解する。
		8th	中間試験	
	4th Quarter	9th	中間試験の解説、大陸合理論	デカルトの考え方などについて理解する。
		10th	人格の尊厳と自由	カントの考え方について理解する。
		11th	功利主義	ベンサムとJ・S・ミルの考え方を理解する。

		12th	実存主義	キルケゴール、ニーチェ、ヤスパース、ハイデッガーの考え方などを理解する。
		13th	構造主義	ソシュールとレヴィ=ストロースの考え方を理解する。
		14th	生命への畏敬と社会参加	ガンディーの考え方などを理解する。
		15th	期末試験	
		16th	期末試験の解説	試験の解説。

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	100	0	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

Toyama College	Year	2020	Course Title	Comprehensive English Ⅱ

Course Information

Course Code	0030	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials	MY WAY English Communication Ⅱ (Sanseido)		
Instructor	Rakuyama Susumu		

Course Objectives

Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialization.
Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party.
Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Exceeds: speaks smoothly with no major breakdowns or noticeable pauses. Pronunciation is clear and easy to understand. Used a wide range of recently studied vocabulary and patterns. Grammar was nearly free of mistakes.	Meets: speaks smoothly with some breakdowns and a few pauses. Pronunciation is sometimes clear and understandable. Used some of recently studied vocabulary and patterns. A few Grammar mistakes.	Approaches: speaks but with some major breakdowns and many long pauses. Pronunciation is not clear and a bit difficult to understand. Used only a few recently studied vocabulary and patterns. A lot of grammar mistakes.
Achievement 2	Exceeds: expresses his or her own opinion and gives an effective reason or explanation. Vocabulary and grammar/word usage are appropreate.	Meets: expresses his or her own opinion and gives a reason or explanation, but with only the minimum amount of information necessary. Errors in vocabulary and grammar/word usage occur but do not impede communication.	Approaches: expressis his or her own opinion but unable to give a reason or explanation.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	Teacher will devise most of the topics used for individual, pair and group activities as well as composition and presentations.
Style	Teacher will create, guide, facilitate and evaluate student, pair, group activities. Students must actively participate in all activities such as listening, speaking, reading and writing.
Notice	・Bring your own dictionary (Japanese-English, English-Japanese) ・Take a weekly quiz and must retest if failed. The passing score is 60%. ・Can take makeup exam in need aid up to maximum of 60 points

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	
		2nd	Lesson 1 Pictograms	
		3rd	Lesson 1 Pictograms	
		4th	Lesson 1 Pictograms	
		5th	Lesson 2 A New Way to Clean Up the Ocean	
		6th	Lesson 2 A New Way to Clean Up the Ocean	
		7th	Lesson 2 A New Way to Clean Up the Ocean	
		8th	Midterm Exam	
	2nd Quarter	9th	Lesson 3 Cuba	To know how to make a presentation 1
		10th	Lesson 3 Cuba	To know how to make a presentation 2
		11th	Lesson 4 The World's Poorest President	To know how to make a presentation 3
		12th	Lesson 4 The World's Poorest President	To know how to make a presentation 4
		13th	Lesson 5 Eye Contact	To know how to make a presentation 5
		14th	Lesson 5 Eye Contact	To know how to make a presentation 6

		15th	Term-end Exam	
		16th	Evaluation	
2nd Semester	3rd Quarter	1st	Review	
		2nd	Lesson 6 A Space Elevator	
		3rd	Lesson 6 A Space Elevator	
		4th	Lesson 6 A Space Elevator	
		5th	Lesson 7 An Encouraging Song	
		6th	Lesson 7 An Encouraging Song	
		7th	Lesson 8 Language Contacts	
		8th	Midterm Exam	
	4th Quarter	9th	Lesson 8 Language Contacts	To make an effective presentation 1
		10th	Lesson 9 Charles Chaplin	To make an effective presentation 2
		11th	Lesson 9 Charles Chaplin	To make an effective presentation 3
		12th	Lesson 10 The Five-story Pagoda of Horyuji	To make an effective presentation 4
		13th	Lesson 10 The Five-story Pagoda of Horyuji	To make an effective presentation 5
		14th	Lesson 10 The Five-story Pagoda of Horyuji	To make an effective presentation 6
		15th	Year-end Exam	
		16th	Evaluation	

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	English Expression Ⅱ

Course Information

Course Code	0031	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	ATLAS English Grammar Navigatot in 27 Lessons （テキストには書き込みをしないこと。ノートを必ず用意する）		
Instructor	Morita Takuya		

Course Objectives

英語表現Ⅰに引き続き、さらなる英文法の知識を身につけ、英文法力の構築を図り、豊かな英語表現力を身につけることを目標とする。その目標を達成するためには、家庭で授業内容の復習をすることが必須である。

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
評価項目1 文法構造理解	文法項目にあげられている文法事項に関し、そのシステムを理解し、関連する問題を正確に解答できる	文法項目にあげられている文法事項に関し、そのシステムを理解し、関連する基本問題を正確に解答できる	基礎的な文法構造システムの理解が不十分なため、基礎的問題を正確に解答できない
評価項目2　文法運用能力	既習文法項目に関する知識を用いながら、複合的な問題に関しても正確に解答することが出来る	複合的な問題に関しても、ある程度、正確に解答することが出来る	既習文法項目が定着していないために複合的な問題に関しては対応することが出来ない
評価項目3　授業への取り組み姿勢	積極的に授業参加し教室全体の学習意欲を高め、協調性を持って能力の向上を図っている	協調性を持って能力の向上を図っている	協調性に欠け､授業の進行を妨げたり、他学生の学習を阻害している

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	全員参加型授業とは、多彩な形式の問題に取り組みながら疑問に関する質問等を積極的に発信することにより自己の英語基礎力を高めることを目標としている。授業を通し、英文法の知識を身につけ英語の表現力を豊かにすることを目標とする。この教科の目標を達成するためには家庭で授業内容の復習が必須である。教科書に出題されている問題は答えをテキストに書き込まず、何度も問題を解き、パターンを暗記してもあいたい。
Style	通年： 教師単独による全員参加型授業 （質疑応答型）
Notice	教官の指示に従い、授業中は集中し、問題に取り組むこと。評価が６０点に満たない場合は、不認定となる。真面目な学習態度で授業に臨めば評価が６０点以上になるような考査が出題されるので、しっかりと授業に取り組んでほしい。基本的に追認試験は行わないが、正当な理由があれば願い出によって追認試験を受けることができる。追認試験の結果、単位の修得が認められた学生はその評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス　& 文法講座	授業の目標を理解する。「関係詞（１）」に関する文法講座
		2nd	英文法講座	関係詞　（２）
		3rd	英文法講座	関係詞　（３）
		4th	英文法講座＆問題演習	関係詞（４）　＆　テキスト　第17章
		5th	問題演習	テキスト　第18章、第19章, Plus 関係詞
		6th	英文法講座	比較　（１）
		7th	英文法講座	比較　（２）
		8th	中間考査	関係詞(1) ～Plus関係詞に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。授業内容重視です。
	2nd Quarter	9th	英文法講座	中間考査結果考察後、比較（３）
		10th	問題演習	テキスト　第20章、第21章, Plus　比較
		11th	英文法講座	仮定法　（１）
		12th	英文法講座	仮定法　（２）
		13th	英文法講座	仮定法　（３）
		14th	問題演習	テキスト　第22章、第23章
		15th	Review & 成績評価・確認	期末考査結果考察後、成績評価に関する総評。
		16th	期末試験	第20章 ～第23章に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。
2nd Semester	3rd Quarter	1st	英文法講座	否定
		2nd	問題演習＋英文法講座	テキスト　第24章 ＋　英文法講座　代名詞（１）
		3rd	英文法講座	代名詞　（２）
		4th	問題演習	テキスト　第25章、第26章
		5th	英文法講座	様々な表現と構文（1）
		6th	英文法講座	様々な表現と構文（２）
		7th	問題演習	テキスト　第26章、第27章

		8th	中間考査	第24章 ～第27章に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。
	4th Quarter	9th	英文法講座	名詞・冠詞・形容詞・副詞・接続詞・前置詞
		10th	問題演習＋英文法講座	テキスト　p.76 - p.83 ＋英文法講座　疑問文
		11th	問題演習＋英文法講座	テキスト　p.84 - p.85 ＋英文法講座　話法（1）
		12th	英文法講座	テキスト　p.80 - p.83 ＋英文法講座　話法（2）
		13th	英文法講座	話法（3）
		14th	問題演習	テキスト　p.86 - p.88
		15th	期末考査	p.76 - p.88に関する確認テスト：解釈、単語・表現等様々な形式で既習事項が出題される。また、英文法講座での内容も出題される。
		16th	Review & 成績評価・確認	期末考査結果考察後、成績評価に関する総評。

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	100	0	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

Toyama College	Year	2020	Course Title	English Conversation Ⅱ

Course Information

Course Code	0032	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	1
Textbook and/or Teaching Materials	Side by Side		
Instructor	Szolnoky Norbert,Randall Jack		

Course Objectives

Students will feel comfortable using English as an effective communication tool.

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
評価項目1	Student actively participates in class.	Student actively participates in class.	Student does not participate.
評価項目2	Student can understand and appropriately respond to questions.	Student can understand and appropriately respond to questions.	Student can not understand questions and/or how to give appropriate answers

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	
Style	
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Introduction	Explination of course and basic outline of textbook.
		2nd	Start textbook from unit 5	Work through the textbook activities at each class' pace.
		3rd	Continue on from previous class	Work through the textbook activities at each class' pace.
		4th	Continue on from previous class	Work through the textbook activities at each class' pace.
		5th	Continue on from previous class	Work through the textbook activities at each class' pace.
		6th	Continue on from previous class	Work through the textbook activities at each class' pace.
		7th	Continue on from previous class	Review for Test
		8th	Test	
	2nd Quarter	9th	Review Test	
		10th	Continue on from previous class	Work through the textbook activities at each class' pace.
		11th	Continue on from previous class	Work through the textbook activities at each class' pace.
		12th	Continue on from previous class	Work through the textbook activities at each class' pace.
		13th	Continue on from previous class	Work through the textbook activities at each class' pace.
		14th	Continue on from previous class	Review for Test
		15th	期末試験	
		16th	Review Test	
2nd Semester	3rd Quarter	1st	Continue on from previous class	Work through the textbook activities at each class' pace.
		2nd	Continue on from previous class	Work through the textbook activities at each class' pace.
		3rd	Continue on from previous class	Work through the textbook activities at each class' pace.
		4th	Continue on from previous class	Work through the textbook activities at each class' pace.
		5th	Continue on from previous class	Work through the textbook activities at each class' pace.
		6th	Continue on from previous class	Work through the textbook activities at each class' pace.
		7th	Continue on from previous class	Review for Test
		8th	Test	

	4th Quarter	9th	Review Test	
		10th	Continue on from previous class	Work through the textbook activities at each class' pace.
		11th	Continue on from previous class	Work through the textbook activities at each class' pace.
		12th	Continue on from previous class	Work through the textbook activities at each class' pace.
		13th	Continue on from previous class	
		14th	Continue on from previous class	
		15th	期末試験	
		16th	Review Test	

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	80	0	0	0	0	20	100
基礎的能力	40	0	0	0	0	10	50
専門的能力	40	0	0	0	0	10	50
分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Calculus Ⅰ

Course Information

Course Code	0037	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	First Semester	Classes per Week	4
Textbook and/or Teaching Materials	新版 微分積分 実教出版，新版 微分積分 演習 実教出版		
Instructor	Nakagawa Yoshihiko		

Course Objectives

関数の極限の概念を理解し、基本的な関数の極限を求めることができる.
基本的な関数の導関数を求め，それを用いて接線の方程式や増減を求めることができる.

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	初等関数の導関数を用いて、微分の問題を解くことができる。	初等関数の導関数を用いて、微分の基本的な問題を解くことができる。	基本的な関数の導関数を計算することができない.
評価項目2	初等関数の導関数を用いて、接線に関する問題を解くことができる。	初等関数の導関数を用いて、接線に関する基本的な問題を解くことができる。	接線に関する基本的な問題を解くことができない。
評価項目3	初等関数の導関数を用いて、関数のグラフに関する問題を解くことができる。	初等関数の導関数を用いて、関数のグラフに関する基本的な問題を解くことができる。	関数のグラフに関する基本的な問題を解くことができない。

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	実数を変数とする関数を取り扱うために，極限の概念を講義する. 微分の概念とその計算法を講義する.
Style	教員単独による講義
Notice	評価が60点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を60点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス いろいろな数列の和	ガイダンスを行い、評価・授業進行等についての説明を行う. 総和の記号を用いて数列の和を表すことができる．総和の記号について確認する。
		2nd	関数の極限	関数の極限の概念について学ぶ．いろいろな関数の極限の計算法を学ぶ.
		3rd	関数のいろいろな極限	極限のいろいろな状態（収束・発散）について学ぶ。
		4th	平均変化率と微分係数	基本的な関数の微分係数を定義に沿って計算することができる.
		5th	導関数	導関数の概念を学ぶ．基本的な関数の導関数を公式を用いて求めることができる.
		6th	関数の積・商の微分法	積分の微分公式、商の微分公式について学ぶ。
		7th	合成関数の微分法	合成関数の微分公式を学ぶ。
		8th	中間試験	第１週から第７週までの内容の定着度を測るため中間試験を行う.
	2nd Quarter	9th	逆関数の微分法	逆関数の微分公式を学ぶ。
		10th	三角関数，逆三角関数の導関数	三角関数，逆三角関数の導関数を計算することができる.
		11th	対数関数の導関数 指数関数の導関数	指数関数，対数関数の導関数を求めることができる.
		12th	高次導関数 関数の導関数と増減	微分係数を用いて，関数のグラフの接線の方程式を求めることができる．導関数を用いて関数の増減を求めることができる.
		13th	関数のグラフ	第２次導関数を用いて関数の凹凸を求めることができる．関数の増減を用いて関数の最大値，最小値を求めることができる.
		14th	いろいろな応用	微分（増減表）を用いた最大・最小の問題の解法、不等式の証明法を学ぶ。
		15th	期末試験	第９週から１４週までの講義内容について、期末試験を実施する。
		16th	導関数のまとめ 成績評価・確認	期末試験で定着度の低いと思われる事項について解説する.

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	70	0	0	0	0	30	100
基礎的能力	70	0	0	0	0	30	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

Toyama College	Year	2020	Course Title	Calculus Ⅱ

Course Information

Course Code	0038	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Second Semester	Classes per Week	4
Textbook and/or Teaching Materials	新版 微分積分 実教出版，新版 微分積分 演習 実教出版		
Instructor	Nakagawa Yoshihiko		

Course Objectives

定積分の概念を理解する．積分と微分の関係を理解する．
置換積分法，部分積分法を用いて基本的な定積分，不定積分を求めることができる．

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	整関数，指数関数，対数関数，三角関数，有理関数などの不定積分を計算することができる．	整関数，指数関数，対数関数，三角関数などの不定積分を計算することができる．	整関数，指数関数，対数関数，三角関数などの不定積分を計算することができない．
評価項目2	定積分の概念を理解している．基本的な定積分の計算ができる．簡単な図形の面積，体積が計算できる．	定積分の概念を理解している．基本的な定積分の計算ができる．	定積分の概念を理解していない．基本的な定積分の計算ができない．

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	定積部分の概念を学ぶ．定積分がある条件の下で関数のグラフで定められる面積であることを教授する． 微分積分学の基本定理により，微分と積分が結び付けられることを教授し，いろいろな不定積分の計算の演習を行う．
Style	教員単独による講義
Notice	評価が60点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を60点とする。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	ガイダンス 平均値の定理	ガイダンスを行い、評価・授業進行等についての説明を行う． 平均値の定理を学ぶ．
		2nd	不定形の極限値	不定形の極限の概念を学び，ロピタルの定理を用いて不定形の極限を求めることができる．
		3rd	不定積分	基本的な関数の不定積分を求めることができる．
		4th	不定積分の置換積分法	置換積分法を用いて不定積分の値を求めることができる．
		5th	不定積分の置換積分法	置換積分法を用いて不定積分の値を求めることができる．
		6th	不定積分の部分積分法	部分積分法を用いて不定積分の値を求めることができる．
		7th	いろいろな関数の不定積分	有理関数の積分の方法などいろいろな関数の不定積分を学ぶ。
		8th	中間試験	第１週から第７週までの内容の定着度を測るため中間試験を行う．
	4th Quarter	9th	定積分	関数の定積分の定義を理解する．微分積分の基本基本定理を用いて定積分を計算することができる．
		10th	定積分の置換積分法	置換積分法を用いて定積分の値を求めることができる．
		11th	定積分の部分積分法	部分積分法を用いて定積分の値を求めることができる．
		12th	いろいろな定積分	正弦関数のべき乗のある範囲での定積分の計算ができる．
		13th	定積分の応用：面積	定積分の計算を用いて，ふたつの曲線で囲まれた図形の面積を求めることができる．
		14th	定積分の応用：体積	断面積の定積分を用いてある立体の体積を求めることができる．回転体の体積を求めることができる．
		15th	期末試験	第９週から１４週までの講義内容について、期末試験を実施する。
		16th	積分のまとめ 成績評価・確認	期末試験で定着度の低いと思われる事項について解説する．

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	70	0	0	0	0	30	100
基礎的能力	70	0	0	0	0	30	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

Toyama College	Year	2020	Course Title	Linear Algebra Ⅰ

Course Information

Course Code	0039	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	新版線形代数，　新版線形代数演習　（実教出版）		
Instructor	Kawai Hitoshi		

Course Objectives

・ベクトルの演算を幾何的に理解できる.
・成分を用いてベクトルの演算ができる.
・ベクトルを幾何の問題に応用できる.

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	ベクトルの演算の幾何学的な問題を解くことができる。	基本的なベクトルの演算の幾何学的な問題を解くことができる。	基本的なベクトルの演算の幾何学底な問題を解くことができない。
評価項目2	ベクトルの成分表示に関する問題を解くことができる。	ベクトルの成分表示に関する基本的な問題を解くことができる。	ベクトルの成分表示に関する基本的な問題を解くことができない。
評価項目3	平面内・空間内の図形（の方程式）に関する問題を解くことができる。	平面内・空間内の図形（の方程式）に関する基本的な問題を解くことができる。	平面内・空間内の図形（の方程式）に関する基本的な問題を解くことができない。

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	様々な例を与えベクトルの演算ができるようなるよう指導する．位置ベクトルと成分の概念を丁寧に解説し，ベクトルにより幾何学的対象が代数的に取り扱うことができることを学ばせる.
Style	教員単独による講義及び演習
Notice	評価が60点に満たない者は、願い出により追認試験を受けることができる．追認試験の結果、単位の修得が認められた者にあっては、その評価を60点とする.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス ベクトルの定義とその演算	ベクトルの定義を理解できる．平面のベクトルの演算が理解できる.
		2nd	ベクトルとその演算	平面のベクトルの演算が理解できる．基本的なベクトルの演算を計算できる.
		3rd	ベクトルの成分	ベクトルの成分の考え方を理解できる．成分を持ちてベクトルの大きさや，和，定数倍を求めることができる.
		4th	ベクトルの線形独立性	平面上のベクトルの線形独立の概念が理解できる．任意のベクトルを2つの線形独立なベクトルの線形結合として表すことができる.
		5th	ベクトルの内積	ベクトルの内積を計算できる．内積の性質を理解できる.
		6th	ベクトルの内積とその応用	内積を用いて，ベクトルのなす角の情報を求めることができる．内積の大きさの関係を用いて内積を計算できる.
		7th	前期中間試験	１回から６回までの内容について中間試験を行う.
		8th	位置ベクトル	位置ベクトルの概念を理解し，内分点の位置ベクトルの成分を求めることができる.
	2nd Quarter	9th	位置ベクトルと図形	位置ベクトルを初歩的な幾何の問題に応用することができる.
		10th	平面の直線の方程式	方向ベクトルを用いて直線の方程式を求めることができる.
		11th	空間のベクトル	空間のベクトルの定義，大きさ，演算，内積を学ぶ.
		12th	空間の直線	与えられた方向ベクトルをもつ直線の方程式を求めることができる.
		13th	空間図形の問題	与えらた法線ベクトルをもつ平面の方程式を求めることができる.
		14th	円，球の方程式	与えれえた条件を満たす円，球面の方程式を求めることができる.
		15th	期末試験	８回から１４回の内容に関して期末試験を行う.
		16th	確認	期末試験の結果を受けて，定着度の低いと思われる項目を解説する.

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	演習・提出物	その他	Total
Subtotal	70	0	0	0	0	30	100
基礎的能力	50	0	0	0	0	20	70
専門的能力	20	0	0	0	0	10	30

分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Linear Algebra Ⅱ

Course Information

Course Code	0040	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	高専テキストシリーズ 線形代数，高専テキストシリーズ 線形代数問題集		
Instructor	Ohtake Yukiko		

Course Objectives

・行列の基本的な演算が計算できる.
・連立方程式を消去法で解くことができる.
・行列式を計算することができる.

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	行列の基本的な演算が計算できる.	行列の基本的な演算がほぼ計算できる.	行列の基本的な演算が計算できない.
評価項目2	連立方程式を消去法で解くことができる.	連立方程式を消去法で解くことがほぼできる.	連立方程式を消去法で解くことができない.
評価項目3	行列式を計算することができる.	行列式を計算することがほぼできる.	行列式を計算することができない.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	行列の概念と演算を学ばせ，行列式の計算をできるようにする． 1次の連立方程式の取り扱いを学ばせる.
Style	教員単独による講義
Notice	評価が６０に満たないものは追認試験の受験を希望することができる．それに合格した場合は評価は６０となる.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	行列とその演算	行列の概念を学ぶ.
		2nd	行列とその演算	行列の演算について学ぶ.
		3rd	行列とその演算	行列の演算について学ぶ．逆行列の概念を学ぶ.
		4th	連立２元１次方程式	行列を用いて連立方程式の解を求める方法を学ぶ.
		5th	連立方程式	行列式の概念を学ぶ． 2次，3次行列の行列式の計算を学ぶ.
		6th	ｎ次行列の行列式	順列の概念を学ぶ．それを用いたｎ次の行列式の定義を学ぶ.
		7th	行列式の性質	行列式の双線形性などの性質を学ぶ.
		8th	後期中間試験	１６回から２２回の内容について中間試験を行う.
	4th Quarter	9th	行列の積の行列式	行列の演算と行列式の関係について学ぶ.
		10th	行列式の展開	行列式の展開と，それを用いた行列式の計算を学ぶ.
		11th	行列式の応用	行列式の幾何的な応用を学ぶ.
		12th	基本変形による連立１次方程式の解法	行基本変形を用いて，連立１次方程式の解を求める方法を学ぶ.
		13th	基本変形による逆行列の計算	前回の講義をもとに，逆行列を求める方法を学ぶ.
		14th	行列の階数と連立方程式の解	行列の階数と連立方程式の解の関係を学ぶ.
		15th	期末試験	２４回から２９回までの内容について期末試験を行う.
		16th	期末試験の解説 成績確認	期末試験の解説を行う．期末試験の結果を受け，定着度の低いと思われる項目を解説する.

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	80	0	0	0	20	0	100
基礎的能力	80	0	0	0	20	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

Toyama College	Year	2020	Course Title	Physics Ⅱ

Course Information

Course Code	0041	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	「宇宙一わかりやすい高校物理（力学・波動）」鯉沼拓 著，為近和彦 監修（学研教育出版）		
Instructor	Ohtake Yukiko		

Course Objectives

1．等速円運動，単振動，剛体の静力学について知っており，問題に適用して解くことができる.
2．温度と熱，理想気体の法則，気体の内部エネルギー等の熱力学の知っており，問題に適用して解くことができる.
3．波の一般的な性質を知っており，音波など身近な波の振舞いに関する問題に適用して解くことができる.

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	等速円運動，単振動，剛体の静力学について知っており，応用問題に適用して解くことができる.	等速円運動，単振動，剛体の静力学について知っており，基本的な問題に適用して解くことができる.	等速円運動，単振動，剛体の静力学についての知識が曖昧で，基本的な問題も解くことができない.
評価項目2	等加速度運動の公式を知っており，応用問題に適用して解くことができる.	等加速度運動の公式を知っており，基本的な問題に適用して解くことができる.	等加速度運動の公式についての知識が曖昧で，基本的な問題も解くことができない.
評価項目3	波の一般的な性質を知っており，音波など身近な波の振舞いに関する応用問題に適用して解くことができる.	波の一般的な性質を知っており，音波など身近な波の振舞いに関する基本的な問題に適用して解くことができる.	波の一般的な性質についての知識が曖昧で，音波など身近な波の振舞いに関する基本的な問題も解くことができない.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	1年生で学んだ運動に加えて，等速円運動と単振動，剛体の運動について学ぶ．また，熱力学の基礎として，温度と熱，理想気体の法則，気体の内部エネルギーについて学び，簡単なサイクルの効率が計算できるようになる．また，波について一般的な性質を学び，音波など身近な波の振る舞いを説明できるようになる.
Style	学生の理解度に応じて，授業計画を変更することがある．教員単独で，講義および演習を実施する.
Notice	定期試験80点，平常点（小テスト・宿題など）20点とし，合計60点以上を合格とする．評価が60点に満たない者は，願い出により追認試験を受けることができる．追認試験の結果，単位の修得が認められた者にあっては，その評価を60点とする.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	等速円運動1	ガイダンスおよび物理学Iの復習を行う．等速円運動の公式を導き，基本的な問題を解くことができる.
		2nd	等速円運動2	等速円運動の標準的な問題を解くことができる.
		3rd	等速円運動3	等速円運動の応用問題を解くことができる.
		4th	単振動1	等速円運動と単振動の関係を説明できる．単振動の公式を導き、基本的な問題を解くことができる.
		5th	単振動2	単振動の標準的な問題を解くことができる.
		6th	剛体の運動1	剛体とは何か，および剛体の重心と剛体にかかる力のモーメントの意味を説明できる.
		7th	剛体の運動2	剛体について，力のつりあいを用いた問題を解くことができる.
		8th	万有引力	万有引力の法則を使った基本的な問題を解くことができる。
	2nd Quarter	9th	中間試験	講義中に扱った演習問題の類題を出題する.
		10th	中間試験解説, 温度と熱1	中間試験の解説を行う．セシウス温度と絶対温度の関係，熱量と熱エネルギーについて説明できる.
		11th	温度と熱2	熱と仕事の関係および熱量の保存則を学び，基本～標準的な問題を解くことができる.
		12th	理想気体の状態方程式	理想気体の状態方程式について復習し，基本～標準的な問題を解くことができる.
		13th	内部エネルギー	内部エネルギーの公式について説明でき，基本～標準的な問題を解くことができる.
		14th	熱力学第一法則	熱力学第一法則について説明でき，基本～標準的な問題を解くことができる.
		15th	期末試験	講義中に扱った演習問題の類題を出題する.
		16th	前期まとめ	前期期末試験の解説を行い，成績評価を確認する.
2nd Semester	3rd Quarter	1st	p-V図	気体がする仕事の公式の導き方を知り，p-V図から仕事を計算できる.
		2nd	サイクルの効率1	サイクルの効率について説明でき，簡単な場合に効率の計算ができる.
		3rd	サイクルの効率2	ディーゼルサイクル，スターリングサイクルなどの効率を計算できる.

		4th	直線上を伝わる波1	波を表す量として，波の速さ・振幅・波長・周期・振動数とそれらの間の関係について説明できる．また，重ね合わせの原理と反射を使った簡単な問題を解くことができる．
		5th	直線上を伝わる波2	正弦波を数式で表す方法について説明できる．
		6th	直線上を伝わる波3	正弦波とその反射波の重ね合わせにより，定常波が生じることを説明できる．
		7th	直線上を伝わる波4	弦の振動と気柱の振動について，定常波の様子を推定できる．
		8th	中間試験	講義中に扱った演習問題の類題を出題する．
	4th Quarter	9th	中間試験解説，音波1	音波の基本的な性質を説明でき，うなりおよびドップラー効果の概要を説明できる．
		10th	音波2	ドップラー効果の基本～標準的な問題を解くことができる．
		11th	平面上を伝わる波1	ホイヘンスの原理について説明でき，平面波の干渉・回折について説明できる．
		12th	平面上を伝わる波2	ホイヘンスの原理に基き，平面波の屈折・反射の法則を導くことができる．
		13th	光波1	光波の基本的な性質を説明でき，光波の反射と屈折について説明できる（学生の理解度によって割愛する）．
		14th	光波2	光波の回折と干渉について説明できる（学生の理解度によって割愛する）．
		15th	期末試験	講義中に扱った演習問題の類題を出題する．
		16th	後期まとめ	後期期末試験の解説を行う．成績評価を確認する．

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	80	0	0	0	20	0	100
基礎的能力	80	0	0	0	20	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

Toyama College	Year	2020	Course Title	Chemistry Ⅱ

Course Information

Course Code	0042	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

"Understand the principles of batteries and electrolysis as an application of oxidation-reduction reactions, and be able to treat them quantitatively.
Understand the heat of reaction and write thermochemical equations. Further, unknown reaction heat can be obtained using Hess's law.
Understand Boyle-Charles's law and the equation of state of gas.
Understand the dissolution and solubility of a solution, and determine the concentration of the solution. Also understand basic knowledge about colloids.
Understand the basic knowledge of organic compounds and write structural formulas and rational formulas. "

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Battery and electrolysis	He understands the definition of oxidation / reduction reactions, and also understands the mechanism of batteries and the principle of electrolysis, that used redox reactions . He can also address the quantitative relationship of electrolysis.	He understands the definition of oxidation / reduction reactions, and also understands as an application of redox reaction the mechanism of batteries and the principle of electrolysis.	He does not understand the definition of oxidation / reduction reactions. He does not understand as an application of redox reaction the battery mechanism, and the principle of electrolysis.
Thermochemistry	Understand the relationship between binding energy and heat of reaction. Select the required heat from a lot of information and determine the heat of reaction.	Understand the heat of reaction. Write thermochemical equations. Unknown heat of reaction can be determined using Hess's law.	Can not understand that there is heat coming and going with the reaction. Can't write thermochemical equations. Doesn't understand Hess's law.
Gas	Can solve problems about gas with an understanding of Boyle-Charles' law and the equation of state of gas, As an application, it can solve problems about gas mixtures.	Understand Boyle-Charles law and the equation of state of gas. As the application the understanding of the gas mixture is poorly insufficient.	Do not understand Boyle-Charles law and the equation of state of gas. Hardly understand about gas mixtures.
Solution	Understand dissolution and solubilities, and solve problems of solubility in various cases. Can be solved the applied problems about the concentration of the solution. Understand colloids and think about them in the relation with daily life.	Understand dissolution and solubility Can determine the concentration of the solution Understand basic knowledge about colloids	The dissolution and solubility are not understood. The concentration of the solution cannot be determined. Do not understand basic knowledge about colloids.
Organic Compounds	Understand basic knowledge of organic compounds and solve some problems. You can write structural formulas and rational formulas, from which you can infer the properties of the substance.	Understand basic knowledge of organic compounds. Can write structural formulas and rational formulas.	do not understand basic knowledge of organic compounds. Structural formulas and rational formulas cannot be understood and cannot be written

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	Look at actual phenomena and reactions and understand their chemical viewpoint. Also, learn about the quantitative relationships of the reactions. After that, you will learn about the structure, characteristics, properties, and reactions of various substances.
Style	Lectures, exercises and experiments by teachers alone
Notice	Those with less than 60 points can take a confirmation test upon request. If the result of the verification test indicates that the unit has been acquired, the evaluation shall be 60 points. Lesson improvement measures: Conduct quizzes as needed to fix the content. In addition, give assignments, so that you can review the contents. Experiments and audiovisual materials may be incorporated. The lesson plan may be changed depending on the students' understanding.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation Metal ionization tendency	Use the syllabus to explain how to proceed with the lesson. Learn that the reaction method differs depending on the ionization tendency of metals.

		2nd	Battery	Understand the principle of the basic battery. Understand that there are primary and secondary batteries, and that various batteries are used in daily life.
		3rd	Electrolysis1	Understand what substances are purified when an aqueous solution is electrolyzed. Also knows that electrolysis is used for refining metals.
		4th	Electrolysis2	Learn Faraday's law and understand the relationship between the amount of reactants and products in electrolysis and quantity of electricity flowing.
		5th	Thermochemistry1	Learn that chemical and state changes involve the transfer of heat, and learn the types and definitions of that heat. In addition, he can represent thermochemical equations.
		6th	Thermochemistry2	By using Hess's law, the unknown heat of reaction can be calculated.
		7th	Thermal motion Three states of matter	Explain the thermal motion of particles. Understand that the change of states is due to the difference in the intermolecular force. Also, explain the vapor pressure, the difference between evaporation and boiling, and the boiling point.
		8th	A mid-term examination	Understand batteries and electrolysis by the application of redox reactions to. Also, understand thermochemical equations.
	2nd Quarter	9th	Exam answers and commentary	Return the mid-term exam answers and explain the qtuastions what they do not understand .
		10th	The volume of the gas	Know that the volume of a gas depends on pressure and temperature. Can use Boyle-Charles' law .
		11th	Equation of state of gas	Understand that you can derive the equation of state of a gas based on Boyle-Charles law and use it.
		12th	Gas mixture	In the mixed gas, can obtaine the pressure of each gas .
		13th	Real gas Exercise	Explain the difference between ideal gas and real gas. Solve problems with gases.
		14th	Dissolution	Explain the difference in the mechanism of dissolution of substances consisting of ionic crystals and molecules crystal.
		15th	Final examination	Check whether understand the relationship between volume, temperature, and pressure using the properties of gas and some laws.
		16th	Grade evaluation Confirmation	Checking the results of the final exam Questionnaire regarding class evaluation
2nd Semester	3rd Quarter	1st	Solubility	Understand the mechanism of the crystal and determine the amount of dissolution and precipitation using the solubility. Learn that the solubility of a gas depends on the pressure. And can caluclate the dissolved amount.
		2nd	Dilute solution	Learn about changes in boiling and freezing points and osmotic pressure in dilute solutions, and calculate them.
		3rd	Colloid	Explain the difference between the colloid solution and the ordinary solution. Learn that there is a colloid solution in daily life.
		4th	Characteristics and classification of organic compounds Analysis of organic compounds	Understand the definitions and characteristics of all organic compounds. In addition, estimate the molecular formulae by performing elemental analysis.
		5th	Saturated hydrocarbon	Understand the structure, properties and reactions of alkanes. Also learn about oils that contain various alkanes.
		6th	Unsaturated hydrocarbon	Understand the structure, properties and reactions of alkanes and alkynes.
		7th	Exercise	Write structural formulas and isomers of the hydrocarbons becomed basic of organic compounds.
		8th	A mid-term examination	Understand the properties of dilute solutions.Also understand aliphatic hydrocarbons including the elemetary analysis and the characteristics of organic compounds .
	4th Quarter	9th	Exam answers and commentary Alcohol / ether	Return the mid-term exam answers and explain the qtuastions what they do not understand .
		10th	Aldehyde / ketone	Understand the structure, properties, and reactions of aldehydes and ketones.
		11th	Carboxylic acid Esters / oils and fats	Learn about the properties and reactions of carboxylic acids. Explain the characteristics of esters and fats and oils formed by the reaction of carboxylic acids .

		12th	Soap Aromatic hydrocarbon	Learn about the characteristics of soap, a substance in which fats and oils are saponificated . Learn the general structure, properties, and reactions of aromatic hydrocarbons, and explain the differences from aliphatic hydrocarbons.
		13th	Phenols Aromatic carboxylic acid	Understand the properties and reactions of phenols. Understand the structure, properties and reactions by taking some of the aromatic carboxylic acids as examples.
		14th	Aromatic amine Separation of organic compounds	Understand the structure, properties and reactions by taking some of the aromatic amines as examples. Using what we have learned so far, think about how to separate a mixture of organic compounds into individual substances.
		15th	Final examination	Confirm that the characteristics and reactions of aromatic compounds containing oxygen and nitrogen are understood.
		16th	Grade evaluation Confirmation	Checking the results of the final exam Questionnaire regarding class evaluation

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	Fundamental Science Experiment

Course Information

Course Code	0043	Course Category	General / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	物理実験のﾌﾟﾘﾝﾄ教材，化学実験のﾌﾟﾘﾝﾄ教材		
Instructor	Terasaki Yukiko,Ohtake Yukiko		

Course Objectives

物理実験の目標は，測定値の取り扱い方とレポートの書き方を習得し，実験結果を物理の知識に基いて考察できるようになること。化学実験の目標は，器具の扱い方・実験操作を習得すること，測定結果・観察結果から化学的な現象が理解できることとする。

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	誤差を正しく見積もることができる。	有効数字の四則演算を規則通りに行える。	有効数字の四則演算が規則通りに行えない。
評価項目2	事実と意見を区別し、意見を事実で裏付けて考察できる。	事実と意見を区別して考察できる。	事実と意見を混同している。
評価項目3	器具の扱い方・実験操作が正しく行え、その理由が説明できる。	器具の扱い方・実験操作が正しく行える。	器具の扱い方・実験操作が誤っている。
	測定結果・観察結果を科学の知識と関連付て説明できる。	測定結果・観察結果を科学の知識と関連付られる。	測定結果・観察結果を科学の知識と関連付られない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	物理実験と化学実験をそれぞれ5項目程度実施する。各項目は2時限の実験で，クラスを半分に分けて物理実験と化学実験を同時に展開する。実験以外の時間は，実験のための説明・講義・演習やビデオによる授業をする。物理実験では，実験を通して物理現象を理解するとともに実験データの分析の仕方を訓練する。化学実験では，科学的観察力，思考力，判断力等の能力が身に付くようにさせる。
Style	実験および講義
Notice	実験を開始する前に，実験の説明と基本事項の復習をする。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	オリエンテーション	シラバスと理科実験全体の説明をした後，化学実験に関する諸注意，器具の名前や取り扱い方，薬品の取り扱いについて説明する。また，物理実験における諸注意，データの扱い方，レポートの書き方について説明する。
		2nd	物理実験〈１〉「有効数字」	有効数字の取り扱い方法を学ぶ。また，ノギスを使って身近なものの外径・内径・深さを測定し，表面積や体積を計算する。
		3rd	化学実験〈１〉「化学反応の量的関係」	反応による質量変化の測定から，反応の量的関係を調べる。
		4th	物理実験〈２〉「重力加速度の測定」	重力加速度を二通りの方法で測定して比較する。
		5th	化学実験〈２〉「いろいろな電池」	ボルタ電池とダニエル電池を製作し，起電力の違いなどを調べる。
		6th	物理実験〈３〉「台車の衝突」	ガイドトラック上で２台の台車を衝突させ，衝突前後での運動量と運動エネルギーを求め，衝突前後の値を比較する。
		7th	化学講義	金属イオンによって反応が違うことを学習する。また，系統分析の方法について知る。
		8th	化学実験〈３〉「金属イオンの反応と分離」	金属イオンによって反応の仕方が違うことを観察する。また，その結果を利用して，未知のイオンを調べる。
	4th Quarter	9th	物理実験〈４〉「熱の仕事当量の測定」	摩擦によって金属ブロックの温度がどれだけ上がるかを測定し，熱の仕事当量を算出する。
		10th	物理講義	波の基本的な性質を，演示実験で確認する。
		11th	化学実験〈４〉「酸化還元滴定」	酸化還元反応を利用して，酸化剤・還元剤の濃度を求める。
		12th	物理実験〈５〉「気柱の共鳴」	一定の音を鳴らしながら気柱の長さを変え，共鳴点を探すことで音波の波長を測定する。
		13th	化学実験〈５〉「有機化合物の合成，性質」	アルコールやアルデヒドの性質を調べる。また，エステルを合成してみる。
		14th	実験予備日	
		15th	期末試験	
		16th	レポート返却・成績確認	

Evaluation Method and Weight (%)

	試験	発表	相互評価	態度	物理レポート	化学レポート	Total
Subtotal	0	0	0	0	50	50	100
基礎的能力	0	0	0	0	50	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

Toyama College	Year	2020	Course Title	Fundamentals of Electricity Ⅱ

Course Information

Course Code	0023	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	精選電気基礎【実教出版】精選電気基礎演習ノート【実教出版】		
Instructor	Yamaguchi Akifumi		

Course Objectives

1．電気に関する基本的な事項（交流電流、インピーダンス、共振など）を説明できる。
2．電気に関する基本的な諸量について計算方法を説明することができる。
3．家庭で使われている電気機器についてその動作原理を説明できる。

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	電気に関する基本的な事項について自律的に説明できる	電気に関する基本的な事項について教員の指導のもとに説明できる	電気に関する基本的な事項について説明できない
評価項目2	電気に関する基本的な諸量について自律的に計算できる	電気に関する基本的な諸量について教員の指導のもとに計算できる	電気に関する基本的な諸量について計算できない
評価項目3	家庭で使われている電気機器についてその動作原理を習得した知識を活かして説明できる	家庭で使われている電気機器についてその動作原理を教員の指導のもとに説明できる	家庭で使われている電気機器についてその動作原理を説明できない

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	基本的な電気現象についての説明と各種の法則と計算法の正確な扱いを理解する。授業では座学と平行して、電気実験装置などによって掲示・実演を行いながら電気に関心を持たせ、家庭や社会生活に溢れている個々の事例をについても説明を行う。
Style	教員単独による講義を実施する。実験やシミュレーションを取り入れ、視覚的にわかりやすい講義になるよう努める。
Notice	試験の成績、およびレポート提出の合計を100%として評価する。学期毎の評価は中間試験と期末試験の評価の平均とする。 評価が６０点に満たない者は，願い出により追認試験を受けることができる。 追認試験の結果，単位の修得が認められた者にあっては，その評価を６０点とする。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	交流電流	交流電流と直流電流の違いについて説明できる。その発生および表し方について説明できる。
		2nd	交流の周期と周波数	正弦波交流電流の三角関数表現より、最大値・周波数・瞬時値を求める方法を説明できる。
		3rd	実効値	時々刻々変化する交流電流を一つの値で表現するとき、実効値を用いることを説明できる。
		4th	記号法	交流の電圧や電流を複素数で表すことによって、回路の計算が簡単になることを説明できる。
		5th	抵抗Rだけの回路	交流電源に純抵抗Rのみを接続した回路に流れる電流を計算し、電流波形を表すことができる。
		6th	コイルLだけの回路	交流電源にコイルLのみを接続した回路に流れる電流を計算し、電流波形を表すことができる。
		7th	静電容量Cだけの回路	交流電源に静電容量Cのみを接続した回路に流れる電流を計算し、電流波形を表すことができる。
		8th	中間試験	中間試験
	4th Quarter	9th	RL直列回路	交流電源に純抵抗RとコイルLを接続した回路に流れる電流を計算し、電流波形を表すことができる。
		10th	RC直列回路	交流電源に純抵抗Rと静電容量Cを接続した回路に流れる電流を計算し、電流波形を表すことができる。
		11th	RLC直列回路	RLC直列回路に流れる電流と全電圧の関係をベクトルで図示し、誘導性リアクタンスと容量性リアクタンスが相殺するように働くことが説明できる。
		12th	アドミタンス	並列回路の電流と電圧の関係はアドミタンスを用いて計算することができる。
		13th	RLC並列回路	RLC並列回路に流れる電流と全電圧の関係をベクトルで図示し、誘導性リアクタンスと容量性リアクタンスが相殺するように働くことが説明できる。
		14th	共振回路	RLC直列回路、LC並列回路に周波数の異なる交流電源を接続したときの周波数特性（電流、インピーダンス）について説明できる。
		15th	期末試験	期末試験
		16th	答案返却、解説	答案返却

Evaluation Method and Weight (%)

	試験	レポート	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	70	30	0	0	0	0	100

基礎的能力	70	30	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

Toyama College	Year	2020	Course Title	Seminars in Engineering Ⅰ

Course Information

Course Code	0024	Course Category	Specialized / Compulsory
Class Format	Seminar	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	1
Textbook and/or Teaching Materials	配布プリント		
Instructor	Yamaguchi Akifumi		

Course Objectives

1．電気数学に関する基礎を学び、指数・対数の計算方法を説明できる。
2．電気数学に関する基礎を学び、三角関数、複素数の計算方法を説明できる。
3．電気数学に関する基礎を学び、微分・積分の計算方法を説明できる。

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	指数・対数の計算方法について自律的に説明できる	指数・対数の計算方法を教員の指導のもとに説明できる	指数・対数の計算方法を説明できない
評価項目2	三角関数、複素数の計算方法を自律的に計算できる	三角関数、複素数の計算方法を教員の指導のもとに説明できる	三角関数、複素数の計算方法を説明できない
評価項目3	微分・積分の計算方法を自律的に計算できる	微分・積分の計算方法を教員の指導のもとに説明できる	微分・積分の計算方法を説明できない

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	これまで学んだ数学の知識を利用し、基本的な現象を方程式で表し、解けるように練習する。授業では基本・応用問題を解き、工学計算の導入を図る。
Style	授業ではプリント学習と主に、これまで学んだ数学の知識を工学に応用する。表計算ソフトを利用して、指数・対数や三角関数、微分・積分の意味を探求する。
Notice	評価が６０点に満たない者は，願い出により追認試験を受けることができる。 追認試験の結果，単位の修得が認められた者にあっては，その評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス 指数・対数１	電気回路の計算に指数・対数が利用されていることを説明できる
		2nd	指数・対数２	指数・対数の使い方が説明できる
		3rd	指数・対数３	指数・対数の計算方法が説明できる
		4th	指数・対数のグラフ１	指数・対数のグラフを表計算ソフトで描くことができる
		5th	指数・対数のグラフ２	指数・対数のグラフを表計算ソフトで描くことができる
		6th	指数・対数の応用１	指数・対数の応用問題を解くことができる
		7th	指数・対数の応用２	指数・対数の応用問題を解くことができる
		8th	中間試験	中間試験
	2nd Quarter	9th	三角比１	電気回路の計算に三角比が利用されていることを説明できる
		10th	三角比２	三角比の使い方が説明できる
		11th	三角関数１	交流回路と三角関数について説明できる
		12th	三角関数２	三角関数の計算方法が説明できる
		13th	三角関数のグラフ１	三角関数のグラフをエクセルで描くことができる
		14th	三角関数のグラフ２	三角関数のグラフをエクセルで描くことができる
		15th	期末試験	期末試験
		16th	期末試験の解答	期末試験の解答解説
2nd Semester	3rd Quarter	1st	複素数１	電気回路の計算に複素数が利用されていることを説明できる
		2nd	複素数２	複素数の使い方が説明できる
		3rd	複素数３	直交座標表示、極座標表示、指数表示について説明できる
		4th	複素数４	オイラーの公式について説明できる
		5th	複素数５	オイラーの公式について説明できる
		6th	複素数６	n乗根について説明できる
		7th	複素数７	座標の回転について説明できる
		8th	中間試験	中間試験
	4th Quarter	9th	微分・積分１	電気回路の計算に微分・積分が利用されていることを説明できる
		10th	微分・積分２	表計算ソフトで関数グラフの傾き・面積の計算ができる

		11th	微分・積分３	表計算ソフトで関数グラフの傾き・面積の計算ができる
		12th	微分・積分４	導関数の求め方について説明できる
		13th	微分・積分５	導関数の求め方について説明できる
		14th	微分・積分６	積分について求め方を説明できる
		15th	期末試験	期末試験
		16th	答案返却、解説	答案返却

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	100	0	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

Toyama College	Year	2020	Course Title	Experiments on Electronic and Computer Engineering I

Course Information

Course Code	0025	Course Category	Specialized / Compulsory
Class Format	Experiment / Practical training	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	配布プリント		
Instructor	Shinokawa Toshiyuki,Shina Toru,Yamaguchi Akifumi,Hayase Yoshikazu,Kadomura Hideki		

Course Objectives

1．実験実習において安全な作業手順ついて説明できる
2．パソコンを用いたプレゼンテーションや数値計算の方法が説明できる
3．パソコンを用いたプログラミングの方法が説明できる
4．電気・電子回路および論理回路の作成方法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	実験実習において安全な作業手順ついて自律的に説明できる	実験実習において安全な作業手順ついて教員の指導のもとに説明できる	実験実習において安全な作業手順ついて説明できない
評価項目2	パソコンを用いたプレゼンテーションや数値計算の方法が自律的に説明できる	パソコンを用いたプレゼンテーションや数値計算の方法が教員の指導のもとに説明できる	パソコンを用いたプレゼンテーションや数値計算の方法が説明できない
評価項目3	パソコンを用いたプログラミングの方法が自律的に説明できる	パソコンを用いたプログラミングの方法が教員の指導のもとに説明できる	パソコンを用いたプログラミングの方法が説明できない
評価項目4	電気・電子回路および論理回路の作成方法について自律的に説明できる	電気・電子回路および論理回路の作成方法について教員の指導のもとに説明できる	電気・電子回路および論理回路の作成方法について説明できない

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	学生個人あるいはグループ学習によって電子情報分野に関する実験実習を行い、電気回路作成やプログラミングができるようする
Style	実験は教員の作成したプリントに従って進める
Notice	実験は危険を伴うこともあるので周囲に作業の妨げとなるものを置かないようにする。特にノートパソコン等を扱うときは電源コードを意識し、踏んだり引っ掛けたりしないように注意する ロジックICを扱うときは静電気を身体から逃すよう気をつけること。 実験結果についてその考察を十分に行いレポートにまとめること 教員の指定した日時までにレポートを必ず提出すること その他教員・技術職員の指示に従い安全に実験を遂行するよう心がけること 単位認定には、６０点以上の評定が必要である。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	実験基礎	パソコンを用いたCプログラム環境設定が説明できる
		2nd	実験基礎	パソコンを用いたCプログラム環境設定が説明できる
		3rd	実験基礎	パソコンを用いたプレゼンテーションの方法がが説明できる
		4th	実験基礎	パソコンを用いたプレゼンテーションの方法がが説明できる
		5th	実験基礎	回路シミュレーションの方法がが説明できる
		6th	実験基礎	電源、抵抗器、オシロスコープ、デジタルテスタの使い方が説明できる
		7th	実験基礎	パソコンの内部構造が説明できる
		8th	論理回路	ブレッドボード、ICトレーナの使い方が説明できる
	2nd Quarter	9th	論理回路	ロジックICについて説明できる
		10th	実験基礎	エクセルによるグラフの作成方法が説明できる
		11th	実験基礎	エクセルによるデータ解析方法が説明できる
		12th	プログラミング	パソコンを用いたプログラミング作成についてが説明できる
		13th	プログラミング	パソコンを用いたプログラミング作成についてが説明できる
		14th	電気回路	算術演算素子についてその使い方が説明できる
		15th	電気回路	トランジスタ・ダイオードの使い方について説明できる
		16th	実験基礎	数式処理ソフトウエアの使い方が説明できる
2nd Semester	3rd Quarter	1st	論理回路	NANDゲートによる組み合わせ回路について説明できる
		2nd	論理回路	NANDゲートによる組み合わせ回路について説明できる

		3rd	論理回路	JK-FFによるカウンタについて説明できる
		4th	論理回路	JK-FFによるカウンタについて説明できる
		5th	論理回路	JK-FFによるカウンタについて説明できる
		6th	電気回路	Arduinoによる電子回路制御の方法について説明できる
		7th	電気回路	Arduinoによる電子回路制御の方法について説明できる
		8th	電気回路	Arduinoによる電子回路制御の方法について説明できる
	4th Quarter	9th	プログラミング	プログラミングの変数の使い方について説明できる
		10th	プログラミング	プログラミングの変数の使い方について説明できる
		11th	プログラミング	プログラミングの関数の使い方について説明できる
		12th	プログラミング	プログラミングの関数の使い方について説明できる
		13th	プログラミング	プログラミングのポインターについて説明できる
		14th	プログラミング	プログラミングのポインターについて説明できる
		15th	プログラミング	プログラミングのアルゴリズムについて説明できる
		16th	プログラミング	プログラミングのアルゴリズムについて説明できる

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	100	0	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

Toyama College	Year	2020	Course Title	Fundamentals of Electricity I

Course Information

Course Code	0026	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	精選電気基礎【実教出版】精選電気基礎演習ノート【実教出版】		
Instructor	Yamaguchi Akifumi		

Course Objectives

１．電気に関する基本的な事項（オームの法則、磁気・静電気に関するクーロンの法則など）を説明できる。
２．電気に関する基本的な諸量について計算方法を説明することができる。
３．家庭で使われている電気機器についてその動作原理を説明できる。

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	電気に関する基本的な事項について自律的に説明できる	電気に関する基本的な事項について教員の指導のもとに説明できる	電気に関する基本的な事項について説明できない
評価項目2	電気に関する基本的な諸量について自律的に計算できる	電気に関する基本的な諸量について教員の指導のもとに計算できる	電気に関する基本的な諸量について計算できない
評価項目3	家庭で使われている電気機器についてその動作原理を習得した知識を活かして説明できる	家庭で使われている電気機器についてその動作原理を教員の指導のもとに説明できる	家庭で使われている電気機器についてその動作原理を説明できない

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	基本的な電気現象についての説明と各種の法則と計算法の正確な扱いを理解する。授業では座学と平行して、電気実験装置などによって掲示・実演を行いながら電気に関心を持たせ、家庭や社会生活に溢れている個々の事例をについても説明を行う。
Style	教員単独による講義を実施する。実験やシミュレーションを取り入れ、視覚的にわかりやすい講義になるよう努める。
Notice	試験の成績を100%として評価する。学期毎の評価は中間試験と期末試験の評価の平均とする。 評価が６０点に満たない者は，願い出により追認試験を受けることができる。 追認試験の結果，単位の修得が認められた者にあっては，その評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	磁石と磁気	磁気の性質や磁気に関する用語を理解し、磁極間同士に作用する力を説明できる。
		2nd	磁気に関するクーロンの法則	磁気に関するクーロンの法則について説明できる。
		3rd	磁気誘導と磁気遮蔽	釘が磁石に引きつけられる性質について理解し、磁石が鉄を磁化する働きについて説明できる。
		4th	磁束と磁束密度	磁束の意味を理解し、磁束密度は単位面積あたりの磁束であることが説明できる。
		5th	電流と磁界	導線に電流を流すと導線の周囲に磁界が生じる現象を説明できる。また導線を螺旋状に巻き付けることによって磁石と同じ働きをすることが説明できる。
		6th	電磁力の大きさと向き	電磁力は電流と磁界の相互作用によって生じることを理解し、その向きはフレミング左手の法則に従うことが説明できる。
		7th	電磁誘導と誘導起電力	磁界を導体が横切るとき、あるいはコイル内の磁界が増減するとき誘導起電力が発生する現象について説明できる。またフレミング右手の法則、レンツの法則を説明できる。
		8th	中間試験	中間試験
	2nd Quarter	9th	帯電現象	摩擦によって物質の電子が他方に移動することが説明できる。物質が正と負に帯電することによって双方が引きつけ合う現象が説明できる。
		10th	静電気に関するクーロンの法則	静電気に関するクーロンの法則について説明できる。
		11th	電界と電気力線	電界中に電荷をおいたとき、これに静電力が働くことが説明できる。電界について説明できる。
		12th	静電容量	２枚の電極板間に正負の電荷が蓄えられることによって静電容量の大きさを説明できる。
		13th	コンデンサの直列接続	コンデンサの直列回路を説明し、すべてのコンデンサに等量ずつの電荷が蓄えられることが説明できる。また、合成静電容量を求め、各コンデンサに加わる電圧が計算できる。
		14th	コンデンサの並列接続	コンデンサの並列回路を説明し、すべてのコンデンサに蓄えられる電荷が全電荷であることが説明できる。また、合成静電容量を求め、各コンデンサに加わる電圧が計算できる。
		15th	期末試験	期末試験
		16th	答案返却、解説	答案返却

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	100	0	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

Toyama College	Year	2020	Course Title	Computer Systems

Course Information

Course Code	0033	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	飯高成男：「ディジタル回路の計算」（オーム社）		
Instructor	Shinokawa Toshiyuki		

Course Objectives

・２進数・８進数・１６進数・１０進数の間の変換ができる.
・ブール代数の定理を用いて論理式の計算ができる.
・真理値表より組合せ論理回路を作成できる.

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
数値データの表現	記数法，負数の概念，補数が理解でき，基数変換，整数演算，小数演算ができる.	記数法，負数の概念，補数が理解でき，基数変換，2進数の演算ができる.	記数法，負数の概念，補数が理解でき，基数変換，2進数の演算ができない.
論理関数	基本的な論理関数を理解し，形式の変換，基本形を作成することができ，様々な公式を証明できる.	基本的な論理関数を理解し，形式の変換，基本形を作成することができ，様々な公式を利用できる.	基本的な論理関数を理解し，形式の変換，基本形を作成することができず，論理演算ができない.
論理関数の導出	与えられた仕様から論理関数を導出でき，カルノー図など作成し，最適な論理関数を導出できる.	与えられた仕様から論理関数を導出できる.	与えられた仕様を理解できず，真理値表が作成できない.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	論理回路はコンピュータのハードウェアの入門ともいうべきものである．ディジタル回路の動作や計算について実力を養い、複雑なディジタル回路にも応用できる考え方や技術を身につける.
Style	講義による説明と演習による形式で行う。 講義プリントを配布して、講義を効率的に行う。
Notice	＜評価方法の追加事項＞ 定期試験の結果または評価が６０点未満の人には補習，再試験により理解が確認できれば，点数を変更することがある．ただし，変更した後の評価は６０点を超えないものとする. ＜授業改善策＞ 論理回路を実際に組み立てることにより学生の理解度をあげていく.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	シラバスの説明 ２進数・８進数・１６進数とは	シラバスの説明 整数を２進数，８進数，１６進数，１０進数で表現することができる. 小数を２進数，８進数，１６進数，１０進数で表現できる.
		2nd	ＢＣＤコードとは，２進数の四則演算	整数と小数をＢＣＤコードで表現することができる. ２進数の四則演算をすることができる.
		3rd	補数演算と小数演算のしかた	補数を用いた減算をすることができる. ２進数の四則演算をすることができる.
		4th	基本論理素子	基本論理素子であるＡＮＤゲート，ＯＲゲート，ＮＯＴゲートの機能を説明することができる.
		5th	ブール代数の公理	ブール代数の公理について説明することができる.
		6th	ブール代数の定理	ブール代数の定理について説明することができる. 論理式の簡単化の概念を説明することができる.
		7th	最小項形式と最大項形式	論理式を標準形である最小項形式または最大項形式で表現することができる.
		8th	中間試験	数値の表現とブール代数の基本的理解をみる.
	2nd Quarter	9th	カルノー図の基礎 ４変数のカルノー図	カルノー図を用いた論理式の簡単化の手法を説明することができる.
		10th	ＮＡＮＤとＮＯＲによる変換	ＮＡＮＤまたはＮＯＲだけで論理回路構成する手法を説明することができる.
		11th	ＡＮＤ－ＯＲ回路とＯＲ－ＡＮＤ回路	ド・モルガンの定理を利用してＮＡＮＤまたはＮＯＲだけで論理回路を構成する手法を説明することができる.
		12th	比較回路	一致回路や大小比較回路などの比較回路について説明することができる.
		13th	選択回路	入力選択回路と出力選択回路の動作を説明することができる.
		14th	加算回路	半加算器と全加算器の動作を説明することができる.
		15th	期末試験	基数の変換，組合せ論理回路の設計について理解しているか確認する.
		16th	試験の返却と解説	試験の返却と解説および授業アンケート

Evaluation Method and Weight (%)							
	中間試験	期末試験	提出物	態度	ポートフォリオ	その他	Total
Subtotal	25	50	25	0	0	0	100
基礎的能力	25	50	25	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

Toyama College	Year	2020	Course Title	Logic Circuits

Course Information

Course Code	0034	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	飯高成男　「ディジタル回路の計算」　（オーム社）		
Instructor	Shinokawa Toshiyuki		

Course Objectives

・同期式カウンタの論理回路を構成できる.
・エンコーダまたはデコーダの論理回路の構成ができる.

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
フリップフロップ ・	フリップフロップの動作について理解し，説明できる.	フリップフロップの動作について理解できる.	フリップフロップの動作について理解できない.
カウンタ	カウンタ等の代表的な順序回路の動作を理解し，設計できる.	カウンタ等の代表的な順序回路の動作を理解できる.	カウンタ等の代表的な順序回路の動作を理解できない.
エンコーダ・デコーダ	エンコーダ・デコーダ等の代表的な組み合わせ論理回路の動作を理解し，設計できる.	エンコーダ・デコーダ等の代表的な組み合わせ論理回路の動作を理解できる.	エンコーダ・デコーダ等の代表的な組み合わせ論理回路の動作を理解できない.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	論理回路はコンピュータのハードウェアの入門ともいうべきものである．ディジタル回路の動作や計算について実力を養い、複雑なディジタル回路にも応用できる考え方や技術を身につける. 【学習・教育目標】
Style	講義による説明と演習による形式で行う。 講義プリントを配布して、講義を効率的に行う。
Notice	＜評価方法の追加事項＞ 定期試験の結果または評価が６０点未満の人には補習，再試験により理解が確認できれば，点数を変更することがある．ただし，変更した後の評価は６０点を超えないものとする. ＜授業改善策＞ 回路シミュレータを用いて，実際の論理回路の動作を確認することにとり学生の理解度をあげていく.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	シラバスの説明 ＲＳフリップフロップ	シラバスの説明 ＲＳフリップフロップ，同期式ＲＳフリップフロップの動作について説明することができる.
		2nd	マススレーブＲＳフリップフロップ	マススレーブＲＳフリップフロップの動作について説明することができる.
		3rd	ＪＫフリップフロップ	ＪＫフリップフロップ，マススレーブＪＫフリップフロップの動作について説明することができる.
		4th	Ｄフリップフロップ，Ｔフリップフロップ	Ｄフリップフロップ，Ｔフリップフロップの動作について説明することができる.
		5th	順序論理回路	フリップフロップと組合せ論理回路で構成されている順序論理回路の概念について説明することができる.
		6th	非同期式２進カウンタ	非同期式カウンタについての動作について説明することができる.
		7th	非同期式ｎ進カウンタ	非同期式ｎ進カウンタについての動作について説明することができる.
		8th	中間試験	順序回路の解析、フリップフロップの動作の理解度を測る.
	4th Quarter	9th	同期式２進カウンタ	同期式カウンタについての動作について説明することができる.
		10th	同期式１０進カウンタ	同期式１０進カウンタの動作について説明することができる.
		11th	同期式ｎ進カウンタ	同期式ｎ進カウンタの動作について説明することができる.
		12th	シフトレジスタ	シフトレジスタの動作について説明することができる.
		13th	エンコーダとデコーダ	エンコーダの動作について説明することができる. デコーダの動作について説明することができる.
		14th	いろいろな入出力方式	ディジタル回路で用いられるいろいろな入出力方式の概念を説明することができる.
		15th	期末試験	フリッププロップ，カウンタおよびエンコーダとデコーダについて理解しているか確認する.
		16th	試験の返却と解説	試験の返却と解説および授業アンケート

Evaluation Method and Weight (%)

	中間試験	期末試験	提出物	態度	ポートフォリオ	その他	Total
Subtotal	25	50	25	0	0	0	100
基礎的能力	25	50	25	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

Toyama College	Year	2020	Course Title	Programming Ⅰ

Course Information

Course Code	0035	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	後藤義和　他：入門C言語（実教出版）		
Instructor	Akiguchi Shunsuke,Kadomura Hideki,Matoba Ryuichi		

Course Objectives

1. To be able to write algorithms with programming language.
2. To be able to explain writing convention of C language
3. To able to write basic programs with basic structure such as sequential, conditional branching, iteration, using C language.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	To be able write algorithms with programming language sufficiently.	To be able write algorithms with programming language.	To be unable write algorithms with programming language.
Achievement 2	To be able explain grammar rules of C language sufficiently.	To be able explain grammar rules of C language.	To be unable explain grammar rules of C language.
Achievement 3	To able to write basic programs with basic structure using C language sufficiently.	To able to write basic programs with basic structure using C language.	To unable to write basic programs with basic structure using C language.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	Writing algorithms with programming language, writing programs with C language, compile, debug, execution of programs, validation of execution result, writing easy-to-grasp programs.
Style	Class style: Lecture and drills Course materials: Text book and handout
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance and introduction of C programming (lecture and drill)	Students can input, compile, debug, and execute simple C programs. Students can check execution results.
		2nd	Variable, data type, and substitution (lecture and drill)	Students can explain variables and data type. Students can explain basic idea of substitution. Students can write a program for exchange of value with variables.
		3rd	Operation (lecture and drill)	Students understand numerical operation, operation of integer type, and typecast. Students can perform numerical operation using C language.
		4th	Input and output (lecture and drill)	Students can use scanf( ), and printf( ).
		5th	Function (lecture and drill)	Students understand how to write cohesive tasks using functions. Students can write programs using functions in C language.
		6th	Conditional branching 1 (lecture and drill)	Students can use if statement.
		7th	Drill	Students can write an algorithm for calculating absolute values using functions.
		8th	Midterm exam	Midterm exam
	2nd Quarter	9th	Conditional branching 2 (lecture and drill)	Students can use else-if statement, and switch statement.
		10th	Drill	Students can write an algorithm of a calculator, and write its program with C language.
		11th	Iteration 1	Students can use for statement, and while statement.
		12th	Drill	Students can write an algorithms for deriving the greatest common divisor and the least common multiple, and write their programs with C language.
		13th	Iteration 2	Students can write programs using double loop processing.
		14th	Drill	Students can with algorithms of assignments and write their programs with C language.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the final exam

Evaluation Method and Weight (%)								
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	assignment・repot	Total
Subtotal	80	0	0	0	0	0	20	100
Basic Proficiency	40	0	0	0	0	0	20	60
Specialized Proficiency	40	0	0	0	0	0	0	40
Cross Area Proficiency	0	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Programming Ⅱ

Course Information

Course Code	0036	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	2nd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	後藤義和　他：入門C言語（実教出版）		
Instructor	Akiguchi Shunsuke,Kadomura Hideki		

Course Objectives

1. To be able to write programs with array.
2. To be able to write programs with pointer.
3. To able to write programs using string processing.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	To be able to write programs with array sufficiently.	To be able to write programs with array.	To be unable to write programs with array.
Achievement 2	To be able to write programs with pointer sufficiently.	To be able to write programs with pointer.	To be unable to write programs with pointer.
Achievement 3	To able to write programs using string processing sufficiently.	To able to write programs using string processing.	To unable to write programs using string processing.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	Writing algorithms with programming language, writing and running programs with C language, understanding of problem solving method using computer.
Style	Class style: Lecture and drills Course materials: Text book and handout
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	One-dimensional array	Students can write programs using one-dimensional array.
		2nd	One-dimensional array and functions	Students can write programs using functions with one-dimensional arrays of arguments.
		3rd	Operation (lecture and drill)	Students can write exercise programs.
		4th	Operation (lecture and drill)	Students can write exercise programs.
		5th	Two-dimensional array	Students can write programs using two-dimensional array.
		6th	Two-dimensional array and functions	Students can write programs using functions with two-dimensional arrays of arguments.
		7th	Operation (lecture and drill)	Students can write exercise programs.
		8th	Midterm exam	Midterm exam
	4th Quarter	9th	Pointer	Students can explain how to use the pointer.
		10th	Pointer and arrays	Students can explain the relationship between pointers and arrays.
		11th	Functions and addresses	Students can explain the relationship between functions and addressees.
		12th	String processing	The student can explain the method of character string processing.
		13th	Operation (lecture and drill)	Students can write exercise programs.
		14th	Operation (lecture and drill)	Students can write exercise programs.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the final exam

Evaluation Method and Weight (%)

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

Cross Area Proficiency	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Physical Education Ⅲ

Course Information

Course Code	0044	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	「Active Sports 総合版」 大修館書店		
Instructor	Ohashi Chisato		

Course Objectives

At the completion of this course, students will be able to
1. Decide team organization, rule, game operation by discussion and exercise
2. Learn the importance of fairness, cooperation and responsibility through group activities
3. Enjoying exercise, improve communication skills

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can prepare and clean up equipment and tools while paying attention to safety ambitiously.	Can prepare and clean up equipment and tools while paying attention to safety.	Can't prepare and clean up equipment and tools while paying attention to safety.
Evaluation 2	Can play your part and work in cooperation with teammates, in order to achieve the goals of team.	Can understand own role and the need to cooperate with teammates, in order to achieve the goals of the team.	Can't understand own role and the need to cooperate with teammates, in order to achieve the goals of the team.
Evaluation 3	Can try to communicate smoothly withteammates for enjoying exercise.	Can understand that smooth communication with teammates is important for enjoying exercise.	Can understand that smooth communication with teammates is important for enjoying exercise.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	1. Develop communication skills and leadership skills using system of selected some sports. 2. Make thorough cooperation in preparation and cleaning. 3. Foster motivation to actively exercise by themselves towards lifelong sports implementation.
Style	In1st and 2nd classes, enforcing fitness tests for longitudinal and cross-section estimation of own fitness levels. Style of classes are adopted to select some sports in accordance with own fitness level, needs and ability for exercise by results of finess tests .
Notice	Promotion for safety counterplan. In 3rd to 15th classes, student selects 2 sports and pursue these in 12 times (1 sports 6 times * 2). As a result is under 60 points, student can make-up a resit by an application. If a result of resit is filled with established stanndard, an estimation becomes 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation Fitness test	Can understand the correct measurement method and take fitness tests.
		2nd	Fitness test	Can take fitness tests and estimate own fitness level.
		3rd	Select Sports (Basketball, Beach volleyball, Futsal, Tennis, Softball)	Can select a sports fitting our own fitness level or exercise needs.
		4th	Select Sports (Basketball, Beach volleyball, Futsal, Tennis, Softball)	Can prepare in coopration with teammates and practice in safety.
		5th	Select Sports (Basketball, Beach volleyball, Futsal, Tennis, Softball)	Can set a goal of selected sports with teammates.
		6th	Select Sports (Basketball, Beach volleyball, Futsal, Tennis, Softball)	Can devise basic practice to raise personal skills with teammates.
		7th	Select Sports (Basketball, Beach volleyball, Futsal, Tennis, Softball)	Can enjoy games with teammates while understanding the rules.
		8th	Select Sports (Basketball, Beach volleyball, Futsal, Tennis, Softball)	Can enjoy to play games by easier rules.

	2nd Quarter	9th	Select Sports (Basketball, Beach volleyball, Ultimet, Tennis, Badminton)	Can select a sports fitting our own fitness level or exercise needs.
		10th	Select Sports (Basketball, Beach volleyball, Ultimet, Tennis, Badminton)	Can prepare in coopration with teammates and practice in safety.
		11th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	Can set a goal of selected sports with teammates.
		12th	Select Sports (Basketball, Beach volleyball, Ultimet, Tennis, Badminton)	Can devise basic practice to raise personal skills with teammates.
		13th	Select Sports (Basketball, Beach volleyball, Ultimet, Tennis, Badminton)	Can enjoy games with teammates while understanding the rules.
		14th	Select Sports (Basketball, Beach volleyball, Ultimet, Tennis, Badminton)	Can enjoy to play games by easier rules.
		15th	Class Evaluation	Can do self assessment and mutual evaluation about class.
		16th		
2nd Semester	3rd Quarter	1st	Fitness test	Can understand the correct measurement method and take fitness tests.
		2nd	Fitness test	Can take fitness tests and estimate own fitness level.
		3rd	Select Sports (Basketball, Beach volleyball, Futsal, Table tennis)	Can select a sports fitting our own fitness level or exercise needs.
		4th	Select Sports (Basketball, Beach volleyball, Futsal, Table tennis)	Can prepare in coopration with teammates and practice in safety.
		5th	Select Sports (Basketball, Beach volleyball, Futsal, Table tennis)	Can set a goal of selected sports with teammates.
		6th	Select Sports (Basketball, Beach volleyball, Futsal, Table tennis)	Can devise basic practice to raise personal skills with teammates.
		7th	Select Sports (Basketball, Beach volleyball, Futsal, Table tennis)	Can enjoy games with teammates while understanding the rules.
		8th	Select Sports (Basketball, Beach volleyball, Futsal, Table tennis)	Can enjoy to play games by easier rules.
	4th Quarter	9th	Select Sports (Beach volleyball, Ultimet, Basketball, Badminton)	Can select a sports fitting our own fitness level or exercise needs.
		10th	Select Sports (Beach volleyball, Ultimet, Basketball, Badminton)	Can prepare in coopration with teammates and practice in safety.
		11th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	Can set a goal of selected sports with teammates.
		12th	Select Sports (Beach volleyball, Ultimet, Basketball, Badminton)	Can devise basic practice to raise personal skills with teammates.
		13th	Select Sports (Beach volleyball, Ultimet, Basketball, Badminton)	Can enjoy games with teammates while understanding the rules.
		14th	Select Sports (Beach volleyball, Ultimet, Basketball, Badminton)	Can enjoy to play games by easier rules.
		15th	Class Evaluation	Can do self assessment and mutual evaluation about class. Can make a report on the relationship between fitness elements and selected sports.
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	30	0	0	10	60	0	100
Basic Ability	30	0	0	0	0	0	30
Technical Ability	0	0	0	0	50	0	50

Interdisciplinary Ability	0	0	0	10	10	0	20

Toyama College	Year	2020	Course Title	Cross-cultural Training For The English-Speaking World

Course Information

Course Code	0045	Course Category	General / Elective
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

（1）英語を正確に使うことの重要性を認識し努力することができる。
（2）英語の背景にある欧米文化の主語と動詞を明確にするコミュニケーションスタイルの構築することができる。
（3）規則、約束、期限を遵守でき、主体的に生活できるように努力をすること。

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
英語力	英語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。	英語を正確に使うことの重要性を認識し努力することができる。	英語を正確かつ積極的に使うための努力しない。
異文化コミュニケーション	英語の背景にある欧米文化、とくに主語と動詞を明確にする因果関係のコミュニケーションスタイルに気づき、これを新たに構築しようと努力することができる。	英語の背景にある欧米文化の主語と動詞を明確にするコミュニケーションスタイルの構築することができる。	主語と動詞を明確にするコミュニケーションスタイルを学ぼうとしない。
言語的コミュニケーション	規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。	規則、約束、期限を遵守でき、主体的に生活できるように努力をすること。	言語による主体的な生活を作ろうとしない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	（1）目標 ハワイのカウアイコミュニティカレッジにおいて工学系の学生と共に学び、活動することを通して、異文化理解を促進して視野を広げること，そして，英語の運用力を獲得するとともに正確に言葉を使う意識を高めること。 （2）概要 ハワイ・カウアイコミュニティカレッジで３週間の異文化体験研修を実施する。
Style	英語圏の国へ滞在し現地で語学研修等の実習を行う。
Notice	ハワイのカウアイコミュニティカレッジが提供する工学系英語コース（３週間）での授業（0900～1500）と当該大学の学生との交流及びホームステイを２泊３日実施する。通常の宿泊はコテッジでの共同合宿の形態をとる。 「研修改善策」 研修期間中には、教員が同行して，授業及びホームステイでの学生の様子を観察し，問題に対応する方法に換えた。帰国後のアンケート及びレポートから，参加学生は研修での体験に概ね満足している。 追認試験は実施しない。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	英語圏：ハワイ　カウアイコミュニティカレッジ	夏季休業中に実施する
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
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 (%)

	レポート・発表	出席・態度	Total
Subtotal	80	20	100
基礎的能力	0	0	0
専門的能力	40	10	50
分野横断的能力	40	10	50

Toyama College	Year	2020	Course Title	Cross-cultural Training For Japan Sea Rim

Course Information

Course Code	0046	Course Category	General / Elective
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

１．環日本諸国語圏（韓国のソウル市、ロシアのウラジオストク市、あるいは、台湾の台北市）での生活体験を通して、韓国語、ロシア語、あるいは、中国語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。
２．環日本諸国語圏での生活体験を通して、それらの言語の背景にある固有の文化的特徴に気づき、これを理解し自己の中に新たに構築しようと努力することができる。
３．本研修にかかる全ての準備、実施、事後報告の活動を通じて、規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。

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
環日本諸国語の理解力と運用力	韓国語、ロシア語、あるいは、中国語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。	韓国語、ロシア語、あるいは、中国語を正確に使うことの重要性を認識し努力することができる。	韓国語、ロシア語、あるいは、中国語を正確かつ積極的に使うことための努力しない。
異文化コミュニケーション	韓国語、ロシア語、あるいは、中国語の背景にある固有の文化的特徴に気づき、これを理解し自己の中に新たに構築しようと努力することができる。	韓国語、ロシア語、あるいは、中国語の背景にある固有の文化に関心を持つ。	韓国語、ロシア語、あるいは、中国語の背景にある固有の文化に関心も持とうともしない。
言語的コミュニケーション	規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。	規則、約束、期限を遵守でき、言語による主体的な生活を作ろうと努力することができる。	言語による主体的な生活を作ろうとしない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	環日本海諸国語圏異文化実習は、韓国のソウル市にある延世大学語学堂、ロシア・ウラジオストク市にあるウラジオストク連邦総合大学、あるいは、台湾の台北市にある台湾師範大学の各地において、毎夏実施している3~4週間の異文化体験実習である。この研修への参加者は、4月から8月の出発までに4~5回のガイダンスと7月中に実施する５時間程度の語学事前集中セミナーに参加することが義務付けられている。以上の物心両面における周到な準備を経て研修を迎えることにしている。現地では、午前中は語学の授業、午後は現地の自然や設備を使った様々な活動やフィールドトリップに参加する。生活の基盤は大学の学生寮であり、現地の日常生活と学生生活を通した異文化理解体験の場を提供する。帰国後は、所定のレポートと現地での学業成績や出席状況を提出して単位が付与される。
Style	事前ガイダンス、現地研修参加、及び、事後報告書と成績、出席証明の提出に基づいて委員会において承認され、「認」、「不認」で評価される。
Notice	この研修への参加条件として、学内で学生処分の経歴を有する者は参加することができないので注意のこと（詳細は研修担当者まで）。　引率者は出発から冒頭の1週間学生に随行して、諸問題の解決を支援する。世界情勢によって中止の場合がある。評価の方法は上記を参照のこと。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	出発前ガイダンス（１）	参加者の自己紹介、抱負の共有、リーダー・副リーダー決定、プログラム登録書類・ホームステイ関係書類の作成指導
		2nd	出発前ガイダンス（２）	携行品、生活全般における注意、旅行保険の加入等
		3rd	出発前ガイダンス（３）	保護者同伴ガイダンス、費用の納入
		4th	出発前ガイダンス（４）	携行品の確認
		5th	出発前ガイダンス（５）	緊急連絡体制の確認、出発時間･場所の確認
		6th	現地第1週目	午前：語学の授業、午後：アクティビティー、放課後：大学寮
		7th	現地第2週目	週末（土・日）は、大学寮で過ごす。
		8th	現地第3週目	
	2nd Quarter	9th	現地第4週目	
		10th	帰国後ガイダンス	研修中に遭遇した問題点の反省、単位認定に必要なものの確認
		11th	レポート作成、成績証明書、出席証明書	必要書類の期限内提出
		12th	単位認定	
		13th		
		14th		
		15th		
		16th		
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 (%)

	試験	レポート・発表	相互評価	出席・態度	ポートフォリオ	その他	Total
Subtotal	0	80	0	20	0	0	100
基礎的能力	0	0	0	0	0	0	0
専門的能力	0	40	0	10	0	0	50
分野横断的能力	0	40	0	10	0	0	50

Toyama College	Year	2020	Course Title	Comprehensive Japanese Ⅲ

Course Information

Course Code	0053	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Okabe Hiroko		

Course Objectives

At the completion of this course, students will be able to 1) Logical sentences and literary sentences can be logically understood.
2) It is possible to use the kanji and words of the compulsory education level.
3) Through the reading and understanding of the classics that Japanese have read, it will become possible to acquire basic education as Japanese and to view a variety of perspectives.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	It is possible to understand the difficult logic sentences and literary sentences accurately, and to explain them easily.	It is possible to understand the difficult logic sentences and literary sentences accurately.	It is impossible to understand the difficult logic sentences and literary sentences accurately.
Evaluation 2	Based on the issue sentence and the chart, it is possible to describe a small essay of about 800 characters in a logical description and describe it logically.	Based on the issue sentence and the chart, it is possible to describe a small essay of about 800 characters in a logical manner.	Based on the issue sentence and the chart, it is impossible to describe a small essay of about 800 characters in the form of a logical description in an accurate expression.
Evaluation 3	It is possible to read a typical Japanese classic work and understand the contents accurately, and to understand the position and significance in the history of the literature and explain it easily.	It is possible to read the typical classical Japanese classics, to understand the contents with a certain degree of accuracy, and to understand the position of the literary history and its significance in the present day.	It is impossible to understand the classical Japanese classics, understand the contents, and understand the position of the literary history and the meaning of the modern times.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	Logical sentences and literary sentences can be logically understood based on the rationale. You can review and use the kanji and phrases of the compulsory education level. By reading and understanding the classics that Japanese people have read in ancient times, they acquire the basic knowledge of Japanese people as Japanese and the views of various things.
Style	It is the center of lectures by teachers.
Notice	Message to all participants : I hope everyone's positive participation and comments are expected. In some cases, the contents of the syllabus are changed while confirming the degree of understanding. A person whose evaluation is less than 60 may receive an authorization examination by the request. A person who has been granted a unit of credit as a result of the approval examination shall have a rating of 60.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation　S H I K I　Kohi-mon Gate	Orientation. He understood the position of "Historical Records" in the history of the literature.Understand the history of the process.Read the "One man's Meeting" and re-write it into a written statement and interpret it.
		2nd	History　Ko-mon Meeting	Read the "HAIKO Crisis" and rewrite it into a written statement and interpret it.
		3rd	History　Ko-mon Meeting	Read "The arrival of the HANKAI" and re-read it and interpret it.
		4th	History　Ko-mon Meeting	Read "Magnificent H A N K A I " and changed his interpretation to a written statement.
		5th	Communication Culture (Criticism)	The entire body is read, and the entire configuration and the author's assertion are grasped.
		6th	Communication Culture (Criticism)	The entire body is read, and the entire configuration and the author's assertion are grasped.
		7th	Communication Culture (Criticism)	Understand the contents through detailed reading of details.
		8th	Prior midterm examination	To confirm and settle the matter. Check your own learning methods.

	2nd Quarter	9th	The Nose(Novel)	Read the entire text, consider the subject, write the impression, read the first and second paragraphs, and consider the figures and people around them.
		10th	The Nose(Novel)	The third and fourth paragraphs shall be read to understand the mind of NAIGU before the treatment of the nose.
		11th	The Nose(Novel)	The fifth and sixth paragraphs shall be read to understand the internal mind of the present.Consider the theme.
		12th	Tosa Nikki (Old Bun)	Read "Departure." and understand the contents.Understand the meaning of the opening.
		13th	Tosa Nikki (Old Bun)	Read "Return to Kyoto."The author understands his feelings when he returns to his home.
		14th	Tosa Nikki (Old Bun)	"Return to Kyoto.".
		15th	End period test	To confirm and secure learning matters
		16th	Return of a paper sheet	The discussion of the problem and the inspection of the learning are carried out.
2nd Semester	3rd Quarter	1st	Essay	Based on a small essay, he learned how to collect and construct a theme for writing a 800 character essay.
		2nd	Essay	Based on a small essay, he learned how to collect and construct a theme for writing a 800 character essay.
		3rd	Essay	Learn how to summarize a problem sentence based on a small essay.
		4th	Essay	Based on a small essay, it is possible to write a small essay with a composition of 800 characters.
		5th	Essay	I actually get a quiz test.
		6th	SANGETUKI (novel)	Reading "Yamatsuki ki" (The diary of the Moon), the figure of the character of the beginning of the book is grasped, and the scene of the meeting with ENSAN is read from the scene of the encounter with ENSAN.
		7th	SANGETUKI (novel)	Reading "Yamatsuki ki" (The diary of the Moon), the figure of the character of the beginning of the book is grasped, and the scene of the meeting with ENSAN is read from the scene of the encounter with ENSAN.
		8th	Prior midterm examination	To confirm and settle the matter. Check your own learning methods.
	4th Quarter	9th	SANGETUKI (novel)	RITYOU (Chinese poem), a self-Hakuju (Chinese poem), read the spirit of RITYOU, who gradually became a tiger.
		10th	SANGETUKI (novel)	Thinking about "cowardly pride and shame," thinking about the meaning of the illusion of a tiger becoming a tiger.
		11th	Meaning of supporting (criticism)	Read the entire thing and understand the entire configuration and the author's problem.
		12th	Meaning of supporting (criticism)	Read the second and third paragraphs to understand what the problem of a modernized society is.
		13th	Meaning of supporting (criticism)	The fourth and fifth paragraphs shall be read and considered why "support" means the meaning of self-existence.
		14th	Meaning of supporting (criticism)	We look back to summarize the issues of modern society and the way our citizens are "citizens.".
		15th	End period test	To confirm and secure learning matters
		16th	Answers to the end test	To confirm and settle the matter. Check your own learning methods.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	20	0	0	0	0	0	20
Basic Ability	5 5	0	0	1 0	0	1 5	0
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	20	0	0	0	0	0	20

Toyama College	Year	2020	Course Title	Politics & Economics

Course Information

Course Code	0054	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	『高等学校 新政治・経済 新訂版』清水書院		
Instructor	Yokota Kazuhiro		

Course Objectives

現代政治・経済の基本原理や制度を理解する。
新聞やニュースで伝えられる社会の諸事象について、自己の考えや意見を持つことができるようになる。

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	現代社会に関する政治的経済的知識を深め、市民としての資質を向上させることができた。	現代社会に関する政治的経済的知識を把握し、市民としての資質を向上させようとした。	現代社会に関する政治的経済的知識を獲得することが不十分であった。
評価項目2			
評価項目3			

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	国際関係論、政治学、法学、経済学など、関係する各分野を専門的に学習するわけではないが、これらの社会諸科学が積み重ねてきた成果や複眼的思考の態度を体得できるよう、配慮したい。
Style	内容面では、①民主政治、②日本国憲法、③近現代の経済社会、それぞれの原理や歴史的展開を学ぶことを中心課題とする。講義を中心とするが、授業時においても個別に作業課題を行ったり、グループワークを実施する。また、社会情勢の変化を受け、必要に応じてシラバスを変更し、討議や調査研究活動などを実施していきたい。１８歳選挙権実施に関わる特別講座も実施する予定である。
Notice	評価が６０点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス（シラバスの説明）	「政治・経済」をはじめるにあたって　政治とは何か
		2nd	民主政治の基本原理Ⅰ	人間と政治（政治と国家、民主政治と法）
		3rd	民主政治の基本原理Ⅱ	法と国家権力（人間と法）
		4th	民主政治の基本原理Ⅲ	近代民主政治の歴史①（民主政治へのあゆみ）
		5th	民主政治の基本原理Ⅳ	近代民主政治の歴史②（市民革命）
		6th	民主政治の基本原理Ⅴ	民主政治の基本原理
		7th	日本国憲法と民主政治Ⅰ	大日本帝国憲法制定の歴史的背景（近現代日本史①）
		8th	中間試験	これまでの学習の確認
	2nd Quarter	9th	日本国憲法と民主政治Ⅱ	大日本帝国憲法の制定と運用（近現代日本史②）
		10th	日本国憲法と民主政治Ⅲ	大正期・昭和期の大日本帝国憲法（近現代日本史③）
		11th	日本国憲法と民主政治Ⅳ	日本国憲法の成立（近現代日本史④）
		12th	基本的人権Ⅰ	法の下の平等
		13th	基本的人権Ⅱ	自由権的基本権①（基本理念・原理、人身の自由）
		14th	基本的人権Ⅲ	自由権的基本権②（精神の自由、経済の自由）
		15th	期末試験	中間試験以降の学習の確認
		16th	基本的人権Ⅳ	社会権的基本権
2nd Semester	3rd Quarter	1st	経済社会と経済体制Ⅰ	人間と経済（経済活動と意義、財と稀少性）
		2nd	経済社会と経済体制Ⅱ	経済社会の変容と経済思想①（経済社会の類型、産業資本主義とアダム・スミス、１９世紀の経済社会と経済思想）
		3rd	経済社会と経済体制Ⅲ	経済社会の変容と経済思想②（世界恐慌とケインズ、第二次世界大戦後の経済社会、社会主義経済の成立と崩壊）
		4th	経済社会と経済体制Ⅳ	経済社会の変容と経済思想③（現代の経済社会）
		5th	現代経済のしくみⅠ	経済主体と経済の循環
		6th	現代経済のしくみⅡ	市場の機能と限界
		7th	現代経済のしくみⅢ	現代企業の特色と社会的責任
		8th	後期中間試験	これまでの学習内容の確認
	4th Quarter	9th	現代経済のしくみⅣ	経済の成長と景気変動
		10th	現代経済のしくみⅤ	政府の経済的役割（税財政のしくみ、政府の失敗）
		11th	現代経済のしくみⅥ	資金の循環と金融機関のはたらき（金融と金融政策）
		12th	現代の日本経済と福祉の向上Ⅰ	日本経済の発展と産業構造の変化①（戦後の経済民主化と復興、高度経済成長、石油危機以降の日本経済）

		13th	現代の日本経済と福祉の向上Ⅱ	日本経済の発展と産業構造の変化②（バブル経済と平成不況、産業構造の変化と経済のソフト化）
		14th	現代の国際経済	現代の世界経済と日本（経済活動のグローバル化）
		15th	期末試験	中間試験以後の学習の確認
		16th	成績確認	成績の確認

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	70	0	0	0	30	0	100
基礎的能力	30	0	0	0	10	0	40
専門的能力	20	0	0	0	10	0	30
分野横断的能力	20	0	0	0	10	0	30

Toyama College	Year	2020	Course Title	Comprehensive English Ⅲ

Course Information

Course Code	0055	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials	Enjoyable Tourist Brochure for English Writing (南雲堂)		
Instructor	Shishido Kimiko		

Course Objectives

英文法の基本を理解・マスターすることで英語に対する苦手意識をなくし、自発的に英語でのアウトプット（作文やスピーキング）ができるようになる。

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
評価項目1　英文法の理解	テキストの基礎的な文法項目を理解している。従って文法項目を複合的に使用した英文の意味が理解できる	テキストの基礎的な文法項目を理解している。従って、これに関連した英文の意味が理解できる	テキストの基礎的な文法項目の理解が不十分である。従って例題等の英文であっても理解できない
評価項目2　読解力	キーワードや自身の持つ知識を駆使して英文の内容を十分に理解し、それに対する質問に英文で答えることができる	キーワードや自身の持つ知識を駆使して英文の内容を大まかに理解し、それに対する質問に英語（単語レベルも可）で答えることができる	キーワードや自身の持つ知識を駆使しても英文の内容を理解できないため、それに対する質問に答えられない、または間違った解答をする
評価項目3　アウトプット力	必要な語彙を使い、またテキストの例文を参考にして、身近な話題に関して正しい英文を書く（または話す）ことができる	テキストの例文を参考に必要最低限の語彙を使い、身近な話題に関して英文を書く（または話す）ことができる	使える語彙が少なくテキストの例文もあまり理解できないため、身近な話題でも間違った英文を書く（または話す）

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	一般教養科目の１つとして英語を学び、将来、（国際）社会に貢献するための基礎を形成する。基礎文法を再確認するとともに、練習を通して長文読解に慣れる。
Style	・教員単独による講義形式。・テキストの各ユニットは文法、新出単語、読解の３つのセクションがあるが、まず文法の理解を深める。・そのため、文法の基礎問題→発展問題へと進む。・新出語彙は各ユニットから一部を抜き出し単語テストも課す。・読解練習を通じて、「日本」を英文で紹介するための基本表現を学ぶ。・テキストの予習の他、文法練習や英作文等の課題も課す。・アウトプット練習の一ツとしてプレゼンを行う。
Notice	・テキストは必ず予習してくること（事前に指示）　・課題は提出期間を守ること ・グループワークの場合、全員が役割を分担すること　・評価が60点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を60点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス／Chapter 1　動詞の種類と文型	基本の５文型と自動詞・他動詞を確認する
		2nd	Chapter 2　文の種類	平叙文、疑問文、単文、複文、重文での語順を復習する
		3rd	読解①	Chapter1-2の単語テスト、「福岡県」と「新潟県」の読解
		4th	Chapter 3　動詞の時制	動詞の時制（現在・過去・未来、進行形、完了形）を理解する
		5th	Chapter 4　助動詞	助動詞の種類と意味を理解する
		6th	読解②	Chapter 3-4の単語テスト、「島根県」と「岩手県」の読解
		7th	プレゼンテーション①	グループでプレゼンテーションを行う
		8th	中間試験	Chapter1-4の文法、7週目までの読解の内容
	2nd Quarter	9th	Chapter 5　名詞・冠詞・数詞	名詞の種類（数えられる名詞と数えられない名詞など）と冠詞・数詞の関係を確認する
		10th	Chapter 6　代名詞	様々な代名詞の使い分けを知る、itを形式主語とした文を理解する
		11th	読解③	Chapter5-6の単語テスト、「鹿児島県」と「高知県」の読解
		12th	Chapter 7　接続詞	英文の意味に合わせた接続詞の使い方を学ぶ
		13th	Chapter 8　前置詞	前置詞の意味と使い分けを学ぶ
		14th	読解④	Chapter7-8の単語テスト、「大阪府」と「宮崎県」の読解
		15th	期末試験	中間試験以降の文法及び読解の内容
		16th	まとめ	前期の総復習、前期の成績評価／確認
2nd Semester	3rd Quarter	1st	Chapter 9　受動態と能動態	受動態と能動態の意味及び使い方の違いを理解する
		2nd	Chapter 10　形容詞と副詞	形容詞と副詞の違いと使い方を確認する
		3rd	読解⑤	Chapter9-10の単語テスト、「佐賀県」と「東京都」の読解

		4th	Chapter 11　比較表現	形容詞・副詞を使った比較表現を理解する
		5th	Chapter 12+14　不定詞と動名詞①	不定詞と動名詞の意味を理解する
		6th	Chapter 12+14　不定詞と動名詞②	不定詞と動名詞の使い分けを理解する
		7th	読解⑥	Chapter11, 12, 14の単語テスト、「広島県」と「京都府」の読解
		8th	中間試験	後期7週目までの内容（文法と読解）
	4th Quarter	9th	Chapter 13　分詞	現在分詞と過去分詞の意味と使い分けを理解する
		10th	Chapter 15　関係詞①	様々な関係詞を理解する
		11th	Chapter 15　関係詞②	分詞と関係詞の違いを理解する
		12th	プレゼンテーション②	グループでプレゼンテーションを行う
		13th	読解⑦	Chapter13と15の単語テスト、「愛知県」と「北海道」の読解
		14th	Chapter 16　仮定法	仮定法の意味と文法を理解する
		15th	期末試験	中間試験以降の文法及び読解の内容
		16th	まとめ	後期の総復習、通年の成績評価／確認

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	60	10	0	0	0	30	100
基礎的能力	60	10	0	0	0	30	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

Toyama College	Year	2020	Course Title	English Expression Ⅲ

Course Information

Course Code	0056	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	『TOEIC英文法ゼロからスコアが稼げるドリル』ほか教員が用意した教材		
Instructor	Yamamura Hiroto		

Course Objectives

By the end of the course, students will be better able to understand grammar and vocabulary used in the TOEIC test. Also, students will be able to achieve a score around 350 on the TOEIC test.

Rubric

	Ideal Level of Achievement (Very Good) 80%	Standard Level of Achievement (Good) 60%	Unacceptable Level of Achievement (Fail) <60%
Evaluation 1	The student are able to understand grammar and vocabulary used in the TOEIC test.	The student are partially able to understand grammar and vocabulary used in the TOEIC test.	The student cannot understand grammar and vocabulary used in the TOEIC test.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	This course aims to help students understand grammar and vocabulary used in the TOEIC test. By the end of the course, students will be able to achieve a score of 350-400 in the TOEIC test.
Style	The instructional emphasis will be on pair work as well as lectures. There will be a lot of interactions between the lecturer and the students, and therefore, active participation is strongly encouraged.
Notice	Grading will be based on exams. Students should mark more than 60 on average in order to pass the course. When they fail the course, students are eligible to retake the exam.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Introduction	Students are able to understand the goals of the course
		2nd	Chapter1: Parts of speech	Students are able to understand grammar and vocabulary covered in a class
		3rd	Chapter1: Parts of speech	Students are able to understand grammar and vocabulary covered in a class
		4th	Chapter1: Parts of speech	Students are able to understand grammar and vocabulary covered in a class
		5th	Chapter1: Parts of speech	Students are able to understand grammar and vocabulary covered in a class
		6th	Chapter1: Parts of speech	Students are able to understand grammar and vocabulary covered in a class
		7th	Chapter 2: Verb forms	Students are able to understand grammar and vocabulary covered in a class
		8th	Chapter 2: Verb forms	Students are able to understand grammar and vocabulary covered in a class
	2nd Quarter	9th	Midterm exam	
		10th	Review	
		11th	Chapter 2: Verb forms	Students are able to understand grammar and vocabulary covered in a class
		12th	Chapter 2: Verb forms	Students are able to understand grammar and vocabulary covered in a class
		13th	Chapter 2: Verb forms	Students are able to understand grammar and vocabulary covered in a class
		14th	Chapter 3: Pronouns	Chapter 3: Pronouns
		15th	Final exam	
		16th	Chapter 3: Pronouns	Students are able to understand grammar and vocabulary covered in a class
2nd Semester	3rd Quarter	1st	Chapter 3: Pronouns	Students are able to understand the goals of the course
		2nd	Chapter 3: Pronouns	Students are able to understand grammar and vocabulary covered in a class
		3rd	Chapter 4: Prepositions	Students are able to understand grammar and vocabulary covered in a class
		4th	Chapter 4: Prepositions	Students are able to understand grammar and vocabulary covered in a class
		5th	Chapter 4: Prepositions	Students are able to understand grammar and vocabulary covered in a class

		6th	Chapter 4: Prepositions	Students are able to understand grammar and vocabulary covered in a class
		7th	Chapter 5: Conjunctions	Students are able to understand grammar and vocabulary covered in a class
		8th	Chapter 5: Conjunctions	Students are able to understand grammar and vocabulary covered in a class
	4th Quarter	9th	Midterm exam	
		10th	Chapter 5: Conjunctions	Students are able to understand grammar and vocabulary covered in a class
		11th	Chapter 5: Conjunctions	Students are able to understand grammar and vocabulary covered in a class
		12th	Chapter 6: Relative pronouns	Students are able to understand grammar and vocabulary covered in a class
		13th	Chapter 6: Relative pronouns	Students are able to understand grammar and vocabulary covered in a class
		14th	Chapter 6: Relative pronouns	Students are able to understand grammar and vocabulary covered in a class
		15th	Final exam	
		16th	Review	

Evaluation Method and Weight (%)

	Midterm 1	Final 1	Midterm 2	Final 2	Presentation	Homework/Classwork	Total
Subtotal	25	25	25	25	0	0	100
Basic Ability	25	25	25	25	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Comprehensive Mathematics

Course Information

Course Code	0064	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Kawai Hitoshi		

Course Objectives

Students can treat literal expressions, Students can slove fundamental equations and enequalities.
Students can apply vectors to graphical problems.Students can understand the relationship between linear mapping and matrix.
Students can obtain derivativesindefinite integrals and of basic functions.Students can apply differential and integration to the problem of finding the behavior or area of a function.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can treat literal expressions, Students can slove fundamental equations and enequalities.	Students can treat literal expressions.	Students can't treat literal expressions.
Evaluation 2	Students can apply vectors to graphical problems.Students can understand the relationship between linear mapping and matrix.	Students can apply vectors to graphical problems.	Students can't apply vectors to graphical problems.
Evaluation 3	Students can obtain derivativesindefinite integrals and of basic functions.Students can apply differential and integration to the problem of finding the behavior or area of a function.	Students can obtain derivativesindefinite integrals and of basic functions.	Students can't obtain derivativesindefinite integrals and of basic functions.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	First of all, I will explain the items and then do exercises.
Style	Lectures and exercises by the teacher alone
Notice	Those who do not have a score of 60 can take the certification test upon request.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Number and expression	Students can perform polynomials and rational expressions.
		2nd	Number and expression	Students can use the factor theorem and the remainder theorem.
		3rd	Equations, inequalities, functions	Students can solve equations and inequalities using the properties of elementary functions.
		4th	Equations, inequalities, functions	Students can solve equations and inequalities using the properties of elementary functions.
		5th	Equations, inequalities, functions	Students can solve equations and inequalities using the properties of elementary functions.
		6th	Vector on plane	Students can understand the meaning of vector operation.
		7th	Vector on plane	Students can apply vectors to planar and spatial geometric problems.
		8th	Intermediate examination	We do the test to confirm the students' level of understanding.
	4th Quarter	9th	Differentiation and integration	Students can calculate basic differentiation and integration.
		10th	Applications of derrentation and integration	Students can use derivatives to examine the behavior of a function.
		11th	Applications of derrentation and integration	Students can use integration to determine area, volume, and length.
		12th	Matrix	Students can perform matrix operations.
		13th	Linear mapping	Students can understand the concept of linear mapping.
		14th	Linear mapping	Students can understand the translation of figures by linear mapping.
		15th	Final exam	We do the test to confirm the students' level of understanding.

		16th	Explanation of final exam	I will explain the items that are considered to be poorly understood by students in the final exam.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	0	30	100
Basic Ability	50	0	0	0	0	20	70
Technical Ability	20	0	0	0	0	10	30
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Mathematical Analysis Ⅰ

Course Information

Course Code	0065	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	4
Textbook and/or Teaching Materials			
Instructor	Sakurai Hideto		

Course Objectives

At the completion of this course, students will be able to
1) understand and carry out fundamental calculations on parametric equations correctly.
2) understand and carry out fundamental calculations on Maclaurin series correctly.
3) understand and carry out fundamental calculations on partial derivatives correctly.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Clearly understands, and is able to carry out fundamental calculations on parametric equations.	Ability to understand and carry out fundamental calculations on parametric equations.	Does not display understanding and is unable to carry out fundamental calculations on parametric equations.
Evaluation 2	Clearly understands, and is able to carry out fundamental calculations on Maclaurin series.	Ability to understand and carry out fundamental calculations on Maclaurin series.	Does not display understanding and is unable to carry out fundamental calculations on Maclaurin series.
Evaluation 3	Clearly understands, and is able to carry out fundamental calculations on partial derivatives.	Ability to understand and carry out fundamental calculations on partial derivatives.	Does not display understanding and is unable to carry out fundamental calculations on partial derivatives.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	In this course, students will learn about the basic analysis, specifically: parametric equations, Maclaurin series, and partial derivatives. And, students will make basics calculations of them.
Style	Lectures and exercises
Notice	This course uses mathematics learned in previous years. The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Guidance: Discuss the goals and structure of this course.
		2nd	Parametric equation -1-	Learn the definition of the parametric equation.
		3rd	Parametric equation -2-	Learn the basic property of the parametric equation. Learn the tangent line of parametric curves.
		4th	Parametric equation -3-	Learn the basic property of the parametric equation. Learn the length of parametric curves.
		5th	Improper integral	Learn the definition of the improper integral.
		6th	Higher order derivatives	Learn the definition of the higher order derivatives.
		7th	Power series and radius of convergence	Learn the definition and basic property of the power series and radius of convergence.
		8th	Midterm exam	Midterm examination.
	2nd Quarter	9th	Series expansion	Learn the definition and basic property of the series expansion.
		10th	Maclaurin series -1-	Learn the definition of the Maclaurin series.
		11th	Maclaurin series -2-	Learn the basic property of the Maclaurin series.
		12th	Maclaurin series -3-	Learn the polynomial approximation of functions.
		13th	Function of two variables and partial derivatives	Learn the definition and basic property of the function of two variables and partial derivatives.
		14th	Tangent plane	Learn the definition and basic property of the tangent plane.
		15th	Final exam	Final examination.
		16th	Summary	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	30	0	100

Basic Ability	70	0	0	0	30	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Mathematical Analysis Ⅱ

Course Information

Course Code	0066	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	4
Textbook and/or Teaching Materials			
Instructor	Sakurai Hideto		

Course Objectives

At the completion of this course, students will be able to
1) understand and carry out fundamental calculations on extreme values in two variable functions correctly.
2) understand and carry out fundamental calculations on double integrals correctly.
3) understand and carry out fundamental calculations on first order differential equations correctly.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Clearly understands, and is able to carry out fundamental calculations on extreme values in two variable functions.	Ability to understand and carry out fundamental calculations on extreme values in two variable functions.	Does not display understanding and is unable to carry out fundamental calculations on extreme values in two variable functions.
Evaluation 2	Clearly understands, and is able to carry out fundamental calculations on a double integral by writing it as an iterated integral.	Ability to understand and carry out fundamental calculations on a double integral by writing it as an iterated integral.	Does not display understanding and is unable to carry out fundamental calculations on a double integral by writing it as an iterated integral.
Evaluation 3	Clearly understands, and is able to carry out fundamental calculations on changing the order of integration in double integrals.	Ability to understand and carry out fundamental calculations on changing the order of integration in double integrals.	Does not display understanding and is unable to carry out fundamental calculations on changing the order of integration in double integrals.
Evaluation 4	Clearly understands, and is able to carry out fundamental calculations on first order differential equations.	Ability to understand and carry out fundamental calculations on first order differential equations.	Does not display understanding and is unable to carry out fundamental calculations on first order differential equations.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	In this course, students will learn about the basic analysis, specifically: extreme values in two variable functions, double integrals, and first order differential equations. And, students will make basics calculations of them.
Style	Lectures and exercises
Notice	This course uses mathematics learned in previous years. The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Extreme values in two variable functions	Guidance: Discuss the goals and structure of this course. Learn how to find extreme values in two variable functions.
		2nd	Implicit function and implicit differentiation	Learn the definition and basic property of the implicit functions and implicit differentiation.
		3rd	Conditional extrema	Learn how to find conditional extrema in two variable functions.
		4th	Double integrals	Learn the definition and basic property of the double integral.
		5th	Iterated integrals -1-	Learn how to compute a double integral over a rectangular region by writing it as an iterated integral.
		6th	Iterated integrals -2-	Learn how to compute a double integral over a general region by writing it as an iterated integral.
		7th	Changing the order of integration	Learn how to chang the order of integration in double integrals.
		8th	Midterm exam	Midterm examination.
	4th Quarter	9th	Change of variables -1-	Can calculate double integrals using change of variables.
		10th	Change of variables -2-	Can calculate the double integrals in the polar coordinate system.
		11th	Application of double integrals -1-	Learn the definition of improper integrals and will be able to calculate that of a given function.
		12th	Application of double integrals -2-	Students can calculate the volume of a solid and the centroid by using double integrals.

		13th	Differential equation -1-	Learn the meaning of differential equations and initial conditions. Can solve differential equations of variable separation type.
		14th	Differential equation -2-	Can solve a first-order linear differential equation.
		15th	Final exam	Final examination.
		16th	Summary	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	30	0	100
Basic Ability	70	0	0	0	30	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Probabtility and Statisics

Course Information

Course Code	0067	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	高遠節夫 他 著, 『新 確率統計』, 大日本図書, 2013年		
Instructor	Nakagawa Yoshihiko		

Course Objectives

Students understand the concept of probability and can calculate simple probabilities.
Students can treat descriptive statistics appropriately for given data.
Students understand the concepts of random variables and probability distributions and can be applied to simple statistical problems.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can understand how to calculate the probability of a trial event that can assume similar certainty.	Students can understand the basic nature of probability.	Students can't understand the basic nature of probability.
Evaluation 2	Students can understand and calculate the meaning of basic statistics.	Students can calculate the meaning of basic statistics.	Students can't calculate the meaning of basic statistics.
Evaluation 3	Students understand the concepts of random variables and their probability distributions and can apply them to basic statistical problems.	Students can understand the concepts of random variables.	Students can't understand the concepts of random variables.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	First, we give lectures on the definition of probability and its calculation method. Next, we will present the meaning and calculation of basic statistics. Finally, we give a lecture on the concept of probability distribution of random variables.
Style	Lectures and exercises by the teacher alone
Notice	Those who do not have a score of 60 can take the certification test upon request.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Probability	Students understand the definition of probabilities and their properties.
		2nd	Probability	Students can calculate elementary probabilities.
		3rd	Probability	Students can understand conditional probabilities and multiplication theorems and use them to calculate probabilities.
		4th	Probability	Students can understand Bayesian theorem and use them to calculate probabilities.
		5th	Deta reduction	Students can calculate the representative value and the scattering of one-dimensional data.
		6th	Deta reduction	Students can calculate the representative value and the scattering of one-dimensional data.
		7th	Deta reduction	Students can calculate covariance, correlation coefficient, etc. of two-dimensional data.
		8th	Intermediate examination	We do the test to confirm the students' level of understanding.
	2nd Quarter	9th	Random variables and probability distributions	Students can determine the probability distribution of given random variables and their mean and dispersion.
		10th	Random variables and probability distributions	Students can determine the probability, mean, dispersion etc. of a random variables according to the binomial distribution.
		11th	Random variables and probability distributions	Students can determine the probability, mean, dispersion etc. of a random variablse according to the poisson distribution.
		12th	Random variables and probability distributions	Students can determine the probability, mean, dispersion etc. of a continuous random variables.
		13th	Random variables and probability distributions	Students can find probabilities for random variables according to the standard normal distribution and can can convert the probability for a random variable following a normal distribution to that for a random variable following a standard normal distribution.

		14th	Random variables and probability distributions	Students can approximate the probability for a random variable according to the binomial distribution with that for a normally distributed random variable.
		15th	Final exam	We do the test to confirm the students' level of understanding.
		16th	Explanation of final exam	I will explain the items that are considered to be poorly understood by students in the final exam.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	0	30	100
Basic Ability	50	0	0	0	0	20	70
Technical Ability	20	0	0	0	0	10	30
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Physics Ⅲ

Course Information

Course Code	0068	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ohtake Yukiko		

Course Objectives

The course treats the basis kinematics and thermodynamics. On completion of the course the student shall be able to solve basic problems of:
1. uniform acceleration
2. equations of motion
3. work, energy, momentum and impulse
4. universal gravity, uniform circular motion, and simple harmonic motion
5. heat and energy conservation, ideal gas law, and first law of thermodynamics

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	One can solve advanced problems of uniform acceleration.	One can solve basic problems of uniform acceleration.	One cannot solve basic problems of uniform acceleration.
Evaluation 2	One can solve advanced problems of equations of motion.	One can solve basic problems of equations of motion.	One cannot solve basic problems of equations of motion.
Evaluation 3	One can solve advanced problems of work, energy, momentum and impulse.	One can solve basic problems of work, energy, momentum and impulse.	One cannot solve basic problems of work, energy, momentum and impulse.
Evaluation 4	One can solve advanced problems of universal gravity, uniform circular motion, and simple harmonic motion.	One can solve basic problems of universal gravity, uniform circular motion, and simple harmonic motion.	One cannot solve basic problems of universal gravity, uniform circular motion, and simple harmonic motion.
Evaluation 5	One can solve advanced problems of heat and energy conservation, ideal gas law, and first law of thermodynamics.	One can solve basic problems of heat and energy conservation, ideal gas law, and first law of thermodynamics.	One cannot solve basic problems of heat and energy conservation, ideal gas law, and first law of thermodynamics.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 3

Teaching Method

Outline	We review the contents of physics I and II and work related exercises to master the basis of kinematics and thermodynamics.
Style	The schedule of this lecture might be slightly changed so that students can easily follow. Student masters this course through lectures and seminar.
Notice	The final grade will be calculated according to the following process: reports(20%) and term-end examination(80%). The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Introduction Measurements and significant figures	guidance, accuracy and precision of measurements
		2nd	Units	conversion of units, dimensional analysis
		3rd	Position, velocity, and acceleration	position, velocity, acceleration, v-t graphs
		4th	Relative velocity Resultant velocity	relative velocity, resultant velocity
		5th	Uniform acceleration	equations in motion of uniform acceleration, projectile motion
		6th	Equilibrium of forces	typical forces, composition of forces, decomposition of force, equilibrium of forces
		7th	Equation of motion	solving the eqution of motion for some typical systems
		8th	Work and energy	work, energy and their relation, conservation of energy
	2nd Quarter	9th	Mid-term examination	
		10th	Statics of a rigid body	center of mass, moment of force
		11th	Impulse and momentum	impulse, momentum and their relation, conservation of momentum, coefficient of restitution
		12th	Uniform circular motion Simple harmonic motion	universal gravity, uniform circular motion, simple harmonic motion
		13th	Thermodynamics	ideal gas law, heat and energy conservation, heat capacity, first law of thermodynamics

		14th	Summary	trial examination
		15th	Term-end examination	
		16th	Checking the final grade	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	80	0	0	0	20	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Experiments on Electronic and Computer Engineering Ⅱ

Course Information

Course Code	0047	Course Category	Specialized / Compulsory
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Shinokawa Toshiyuki,Hayase Yoshikazu,Kadomura Hideki,Matoba Ryuichi,Tsukada Akira,Ito Nao,Aso Tsukasa,Yoshii Yotsumi,Furuyama Shoichi		

Course Objectives

Students can have the basic capacity for the experiments.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Experimental efforts.	Can perform the experiment almost perfectly.	Can perform the experiment correctly.	Can't perform the experiment.
Report : software	Can describe the report almost perfectly.	Can describe the report correctly.	Can't describe the report.
Report : hardware	Can describe the report almost perfectly.	Can describe the report correctly.	Can't describe the report.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 2

Teaching Method

Outline	The students conduct basic experiments on what they learned in class. The students conduct an application experiment based on the basic matter.
Style	
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Getting started with UNIX (1)	To explain the outline. Install the UNIX.
		2nd	Getting started with UNIX (1)	Install the UNIX.
		3rd	Getting started with UNIX (2)	Learn the basic command of the UNIX.
		4th	Getting started with UNIX (2)	Learn the basic command of the UNIX.
		5th	Practice: Database	Can describe SQL statements for relational databases simple operation.
		6th	Practice: Database	Can describe SQL statements for relational databases simple operation.
		7th	Getting started with UNIX (3)	Learn on the basis of the Shell.
		8th	Getting started with UNIX (3)	Learn on the basis of the Shell.
	2nd Quarter	9th	Confirmation of understanding.	Confirmation of the understanding.
		10th	Error in numerical computing	Understand the overflow/underflow and precisions of variables.
		11th	Error in numerical computing	Understand the errors depending on calculation algorithms.
		12th	Error in numerical computing	Write the report for summary and discussion.
		13th	Random number generation and Monte Carlo method.	Implements the Monte Carlo method.
		14th	Random number generation and Monte Carlo method.	Implements the Monte Carlo method.
		15th	Industrial Trend Research.	Investigate the industrial trend.
		16th		
2nd Semester	3rd Quarter	1st	Guidance	To explain the outline.
		2nd	Resonant circuit	Can measure resonance characteristics of serial and parallel resonance circuit, also calculate resistance R and selectivity Q, and compare them to theoretical value.
		3rd	Application of diode to rectifier circuit	Can understands the principle of the rectifier.
		4th	Experiment of transistor-based amplifier circuit	Can understands the principle of operation of the amplifier circuit.
		5th	Static characteristics of FET and experiment of amplification circuit.	Can understand the principle of operation of the FET.
		6th	Creation of experimental report	Create an experimental report.
		7th	Kirchhoff's law	Confirm Kirchhoff's law by calculation and experiment.

		8th	Experiment of amplifier circuit using op amp.	An op amp can be used to create an inverting amplifier circuit of any voltage amplification.
	4th Quarter	9th	Clipping circuit	Students can make clipping circuit using diode and voltage supply, and clip voltage waveform.
		10th	Voltage control experiment by PWM	The voltage can be controlled by PWM (Pulse Width Modulation).
		11th	Creation of experimental report	Create an experimental report.
		12th	Logic circuit (II)-Configuration of counter by flip flop-	Can use JK flip-flops to construct synchronous counters.
		13th	Logic circuit (III)-decoder and encoder-	Can configure encoders and decoders.
		14th	Can configure encoders and decoders.	Can explain the operation of the shift register.
		15th	Creation of experimental report	Create an experimental report.
		16th		

Evaluation Method and Weight (%)

	Report	Achievement	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	40	0	0	0	0	100
Basic Ability	40	30	0	0	0	0	70
Technical Ability	20	10	0	0	0	0	30
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electric Circuit Ⅰ

Course Information

Course Code	0048	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	電気回路を理解する[第2版]　小澤孝夫著　森北出版		
Instructor	Tsukada Akira		

Course Objectives

After learning this course the students should be able to:
1. Apply the fundamental theorems about DC circuits to the circuit analysis.
2. Calculate the voltage and/or current of elements in the sinusoidal steady state (AC) circuit with the phasors.
3. Understand the fundamental theorems about AC circuits and apply it to the circuit analysis.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Be able to understand the principle of fundamental theorems about DC circuits and apply to the circuit analysis.	Be able to apply the fundamental theorems about DC circuits to the circuit analysis.	Be not able to apply the fundamental theorems about DC circuits to the circuit analysis.
Evaluation 2	Be able to understand the meaning of the phasors and to calculate the voltage and/or current of elements in the sinusoidal steady state (AC) circuit with its.	Be able to calculate the voltage and/or current of elements in the sinusoidal steady state (AC) circuit with the phasors.	Be not able to calculate the voltage or current of elements in the sinusoidal steady state (AC) circuit with the phasors.
Evaluation 3	Be able to understand the fundamental theorems about AC circuits and apply its to the complex circuit analysis.	Be able to understand the fundamental theorems about AC circuits and apply its to the circuit analysis.	Be not able to understand the fundamental theorems about AC circuits.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	In modern society, various electrical and electronic circuits enrich our lives. The purpose of this course is to acquire a basic analysis method to understand the mechanism of the electric circuit and the electronic circuit which is used in these. This subject focuses on the fundamental theorems about DC circuits and the concept of phasors in AC circuits.
Style	Lectures led by teacher
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Fundamentals of electric circuits	Be able to describe Ohm's law and Kirchhoff's laws
		2nd	Voltage–current relationship for passive elements Kirchhoff's laws	Be able to apply Ohm's law and Kirchhoff's laws to find unknown values of DC circuits.
		3rd	Superposition theorem for DC circuits	Be able to describe superposition theorem and apply it to DC circuits.
		4th	Thevenin's theorem for DC circuits	Be able to describe Thevenin's theorem and transform DC circuits to Thevenin's equivalent circuit.
		5th	Norton's theorem for DC circuits	Be able to describe Norton's theorem and transform DC circuits to Norton's equivalent circuit.
		6th	Power in DC circuits	Be able to calculate the power of DC circuits.
		7th	Sinusoidal voltage and current	Be able to describe the properties of sinusoidal wave, such as frequency and phase.
		8th	Midterm exam	Midterm exam
	2nd Quarter	9th	Phasor representation of sinusoidal variables	Be able to describe the phasor representation of sinusoidal variables.
		10th	Phasor representation for I-V characteristics of R, L and C	Be able to describe the phasor representation for I-V characteristics of R, L and C.
		11th	Impedance and admittance	Be able to calculate the impedance and admittance of the circuits.
		12th	Sinusoidal steady-state circuit analysis (1)	Be able to calculate variables of AC circuits.
		13th	Sinusoidal steady-state circuit analysis (2)	Be able to calculate variables of AC circuits.
		14th	Sinusoidal steady-state circuit analysis (3)	Be able to calculate variables of AC circuits.
		15th	Final exam	Final exam
		16th	Summary	Summarize the study content and confirm grades

Evaluation Method and Weight (%)

	Exam	other	Total
Subtotal	80	20	100
Basic Ability	0	0	0
Technical Ability	80	20	100
Interdisciplinary Ability	0	0	0

Toyama College	Year	2020	Course Title	Electric Circuit Ⅱ

Course Information

Course Code	0049	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	電気回路を理解する[第2版]　小澤孝夫著　森北出版		
Instructor	Tsukada Akira		

Course Objectives

After learning this course the students should be able to:
1. Draw the phasor diagram and describe the resonance phenomenon, concept of band width and Q factor.
2. Calculate the power of AC circuits.
3. Understand the Thevenin's and Norton's theorems, delta-star transformation, bridged circuit and apply its to the circuit analysis.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Be able to draw the phasor diagram and describe the resonance phenomenon, concept of band width and Q factor.	Be able to draw the phasor diagram and describe the resonance phenomenon, concept of band width and Q factor.	Be not able to draw the phasor diagram and describe the resonance phenomenon.
Evaluation 2	Be able to calculate the real and reactive powers and power factor of AC circuits.	Be able to calculate the power of AC circuits.	Be not able to calculate the power of AC circuits.
Evaluation 3	Be able to understand the Thevenin's and Norton's theorems, delta-star transformation, bridged circuit and apply its to the circuit analysis.	Be able to understand the Thevenin's and Norton's theorems, delta-star transformation, bridged circuit.	Be not able to understand the Thevenin's and Norton's theorems, delta-star transformation, bridged circuit.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	In modern society, various electrical and electronic circuits enrich our lives. The purpose of this course is to acquire a basic analysis method to understand the mechanism of the electric circuit and the electronic circuit which is used in these. This subject focuses on phasor diagram, resonant circuit, power, Thevenin's and Norton's equivalent circuit, delta-star transformation, bridged circuit and matching.
Style	Lectures led by teacher
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Phasor diagram	Be able to draw the phasor diagram.
		2nd	Phasor locus (1)	Be able to draw the phasor locus.
		3rd	Phasor locus (2)	Be able to draw the phasor locus and describe the properties.
		4th	Series resonance circuit	Be able to describe the series resonance circuit, concept of band width and Q factor.
		5th	Parallel resonance circuit	Be able to describe the parallel resonance circuit, concept of band width and Q factor.
		6th	Sinusoidal power calculations (1)	Be able to describe the concept of power factor, real and reactive powers.
		7th	Sinusoidal power calculations (2)	Be able to calculate the power of AC circuits.
		8th	Midterm exam	Midterm exam
	4th Quarter	9th	Thevenin's and Norton's theorems for AC circuits	Be able to transform AC circuits to Thevenin's and Norton's equivalent circuit.
		10th	Delta-to-star transformation	Be able to describe delta-to-star transformation and transform some circuits.
		11th	Star-to-delta transformation	Be able to describe star-to-delta transformation and transform some circuits.
		12th	Bridged circuit	Be able to estimate the unknown impedance from the equilibrium condition of the bridged circuit.
		13th	Matching (1)	Be able to describe the matching for AC circuits.
		14th	Matching (2)	Be able to estimate the matching conditions for AC circuit.
		15th	Final exam	Final exam
		16th	Summary	Summarize the study content and confirm grades

Evaluation Method and Weight (%)

	Exam	other	Total

Subtotal	80	20	100
Basic Ability	0	0	0
Technical Ability	80	20	100
Interdisciplinary Ability	0	0	0

Toyama College	Year	2020	Course Title	Electronic Circuit Ⅰ

Course Information

Course Code	0050	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yamaguchi Akifumi		

Course Objectives

At the completion of this course, students will be able to
1. Understand the p-n junction correctly.
2. Understand the rectifier circuit using a diode correctly.
3. Understand the current amplification function of the transistor correctly.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can Understand the p-n junction almost perfectly.	Can Understand the p-n junction correctly.	Can't Understand the p-n junction correctly.
Evaluation 2	Can Understand the rectifier circuit using a diode almost perfectly.	Can Understand the rectifier circuit using a diode correctly.	Can't Understand the rectifier circuit using a diode correctly.
Evaluation 3	Can Understand the current amplification function of the transistor almost perfectly.	Can Understand the current amplification function of the transistor correctly.	Can't Understand the current amplification function of the transistor correctly.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	Students can understand the electrical characteristics of diodes and transistors. Students can understand the basic electronic circuits that are used by diodes and transistors.
Style	Students can easily learn electronic circuits by using a circuit simulator.
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Semiconductors	Understand the characteristics of semiconductors.
		2nd	P-type semiconductor and N-type semiconductor	Understand the types of semiconductors.
		3rd	Majority carriers and minority carriers	Understand the majority carriers and the minority carriers.
		4th	PN junction	Understand the depletion layer of the p-n junction.
		5th	Diode and rectification	Understand the characteristics and rectification of diodes.
		6th	Rectifier circuit	Understand the half-wave rectifier circuit or a full-wave rectifier circuit using a diode.
		7th	Structure and action of transistors	Understand the characteristics of transistors and current amplification action.
		8th	Mid-term exams	
	2nd Quarter	9th	Static characteristics of transistors	Understand the static characteristics and measurement methods of transistors.
		10th	Amplifier circuit	Understand the basic voltage amplification circuit
		11th	Structure of the voltage amplification circuit	Understand the Voltage amplification circuit using the current amplification function of the transistor.
		12th	Basic amplifier circuit	Understand the transistor emitter ground amplifier circuit.
		13th	Dynamic Characteristic 1	Understand the load line and the operating point of the transistor amplifier circuit.
		14th	Dynamic Characteristic 2	Understand a schematic of the transistor amplifier circuit.
		15th	Term examination	
		16th	Return and commentary of the term examination	

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	30	0	0	0	0	100
Basic Ability	70	30	0	0	0	0	100

Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electronic Circuit Ⅱ

Course Information

Course Code	0051	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yamaguchi Akifumi		

Course Objectives

At the completion of this course, students will be able to
1. Understand the equivalent circuit of the emitter grounding amplification circuit.
2. Understand the bias circuit of the transistor amplification circuit.
3. Understand the field effect transistor.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can understand the equivalent circuit of the emitter grounding amplification circuit correctly almost perfectly.	Can understand the equivalent circuit of the emitter grounding amplification circuit correctly.	Can't understand the equivalent circuit of the emitter grounding amplification circuit correctly.
Evaluation 2	Can understand the bias circuit of the transistor amplification circuit almost perfectly.	Can understand the bias circuit of the transistor amplification circuit correctly.	Can't understand the bias circuit of the transistor amplification circuit correctly.
Evaluation 3	Can understand the field effect transistor almost perfectly.	Can understand the field effect transistor correctly.	Can't understand the field effect transistor correctly.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	Students can calculate the degree of amplification using the h-parameter. Students can design an amplification circuit using bipolar transistors or field effect transistors.
Style	Students can easily learn electronic circuits by using a circuit simulator.
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Gain of the amplification circuit	Understand the degree of amplification by using dB
		2nd	H-parameter of the transistor	Understand the h-parameter derived from the static characteristics of the transistor.
		3rd	Equivalent conversion of the transistor amplification circuit by the h-parameter	Understand the amplification circuit using the h-parameter as an equivalent circuit.
		4th	Calculation of the degree of amplification using an equivalent circuit	Understand an equivalent circuit using an emitter grounding amplification circuit. Then calculate the voltage amplification degree.
		5th	Stability of the bias circuit	Understand 4 types of bias circuits. Then understand the stability of collector current due to temperature changes.
		6th	Features of a fixed bias circuit or a self-bias circuit	Understand the fixed bias circuit or the self-bias circuit.
		7th	Features of current feedback bias circuit	Understand the current feedback bias circuit.
		8th	Mid-term exams	
	4th Quarter	9th	Design of the current feedback bias circuit	Understand the design a current feedback bias circuit.
		10th	Recovery of the amplification by the bypass capacitor	Understand the difference of the amplification degree in a case that there is no it if there is a bypass condenser.
		11th	Design of transistor amplification circuit	Understand the design a transistor amplification circuit.
		12th	Frequency characteristics of transistor amplification circuit	Understand the frequency characteristics of the transistor amplification circuit.
		13th	Structure and action of field effect transistor	Understand the characteristics and mutual admittance of field effect transistors.
		14th	Amplification circuit by using field effect transistor	Understand a source grounding amplification circuit using a field effect transistor.
		15th	Term examination	
		16th	Return and commentary of the term examination	

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	30	0	0	0	0	100
Basic Ability	70	30	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Seminars in Engineering Ⅱ

Course Information

Course Code	0052	Course Category	Specialized / Elective
Class Format	Seminar	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ito Nao		

Course Objectives

At the completion of this course, students will be able to:
1) Apply the knowledge of mathematics to physics or electronic circuit.
2) Solve first and second order linear differential equation.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can apply mathematical knowledge to technical problems properly.	Can apply mathematical knowledge to technical problems.	Cannot apply mathematical knowledge to technical problems.
Evaluation 2	Can understand how to solve linear differential equation properly, and can solve applied problems.	Can understand how to solve linear differential equation, and can solve basic problems.	Cannot understand how to solve linear differential equation, and cannot solve basic problems.

Assigned Department Objectives

ディプロマポリシー 2

Teaching Method

Outline	The goal of this course is that students will be able to: 1) Understand mathematical knowledge and how to apply it to physics, electrical circuit and information technology, and acquire the ability to calculate them. 2) Understand how to solve linear differential equation, and can describe phenomena of physics and electrical circuit by using linear differential equation. One class lesson is divided into lecture part, exercise part and review part. In the lecture part, teacher explain the content and the mathematical and technical knowledge that are treated in the week. In the exercise part, students try to solve the problems related in the lecture part. In the review part, students challenge some problems that they have already learned in this course, and teacher explain how to solve them.
Style	Lectures by teachers alone are conducted.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance, exponetial function	1) Can explain the definition and features of exponetial function. 2) Can solve problems from physics and electric circuit, by using exponetial function.
		2nd	Logarithmic function	1) Can explain the definition and features of logrithmic function. 2) Can solve problems from physics and electric circuit, by using logarithmic function.
		3rd	Trigonometric function I	1) Can explain the bacis feature of trigonometric function and the representation for angular velocity. 2) Can draw an ondogram.
		4th	Trigonometric function II	Can derive various theorems from addition theorem.
		5th	Complex number	1) Can explain the definition and features of complex number. 2) Can calculate an impedance of an electric circuit, by using complex number.
		6th	Differentiation	1) Can solve basic problems reated with differentiation. 2) Can solve physical problems by using differentiation.
		7th	Integration	1) Can solve basic problems reated with integration. 2) Can solve physical problems by using integration.
		8th	Midterm exam	
	2nd Quarter	9th	1 order linear differential equation I	1) Can explain the definetion of differential equation. 2) Can solve basic problems of 1 order linear differential equation.

		10th	1 order linear differential equation II	1) Can solve 1 order homogeneous linear differential equation. 2) Can solve physical problems by using 1 order homogeneous linear differenntial equation.
		11th	1 order linear differential equation III	1) Can solve 1 order inhomogeneous linear differential equation. 2) Can solve physical problems by using 1 order inhomogeneous linear differenntial equation.
		12th	2 order linear differential equation I	Can solve basic problems of 2 order linear differential equation.
		13th	2 order linear differential equation II	Can solve physical problems by using 2 order homogeneous linear differenntial equation.
		14th	Problem exercise	
		15th	Final exam	
		16th	Grading confirmation, question evaluation questionnaire	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	40	40	10	0	10	0	100
Basic Ability	20	20	5	0	5	0	50
Technical Ability	20	20	5	0	5	0	50
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Programming Ⅲ

Course Information

Course Code	0058	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Aso Tsukasa		

Course Objectives

At the completion of this course, student will be able to:
1) Understand the basic syntax of JAVA language
2) Create the basic JAVA programs
3) Understand the concept of object oriented technology

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand the basic syntax of JAVA language almost perfectly.	Can understand the basic syntax of JAVA language correctly.	Can't understand the basic syntax of JAVA language correctly.
Evaluation 2	Can create the basic JAVA programs almost perfactly.	Can create the basic JAVA programs almost correctly.	Can't create the basic JAVA programs correctly.
Evaluation 3	Can understand the concept of object oriented technology almost perfectly.	Can understand the concept of object oriented technology correctly.	Can't Understand the concept of object oriented technology correctly.

Assigned Department Objectives

ディプロマポリシー 1

Teaching Method

Outline	C programing is based on a procedual language, while C++ and JAVA programing are based on the object oriented language. This lecture introduces the programing method in Object-oriented technology using JAVA language. The lecture consists from 1) learning about the basic syntax of JAVA language, 2) understanding about the difference between C language and JAVA language, and 3) creating basic JAVA programs with object-oriented technology.
Style	The lecture includes exercises and practice of programing, in order to check the students' understandings.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Installation of JAVA SDK	Can understand the lecture structure and the goals.
		2nd	Basic structure of JAVA program	Can understand the procudure about source code description, compiling and running program.
		3rd	Types, expression and cast	Can understand the syntax of types, expression and cast for developing a basic program.
		4th	Branches and loops	Can understand the syntax of branches and loops for developing a basic program.
		5th	Array	Can understand the syntax of array for developing a basic program.
		6th	Method	Can understand the syntax of static method for developing a basic program.
		7th	Exercise and practice	Can understand how to develop practical programing with the knowleges.
		8th	Midterm exam	Can create basic JAVA programs as well as explain the results of given programs.
	4th Quarter	9th	Comments to the intermediate test	Can understand and recover the weak points of study.
		10th	Program with multiple classes	Can understand how to develop a program with multiple classes.
		11th	Object-oriented technology	Can understand the advanteges of object-oriented technology.
		12th	Instances and classes	Can understand the class definition and its structure with the difference between instance and class.
		13th	Encapsulation	Can understant the visibility of field variables, constructures and methods.
		14th	Exercise and practice	Can understand how to develop practical programing with the classes.
		15th	Final exam	Can create basic JAVA programs with object-oriented technology.
		16th	Comments to the final exam, class questionnaire etc.	Can understand and recover the weak points of study.

Evaluation Method and Weight (%)							
	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	30	0	0	0	0	100
Basic Ability	40	20	0	0	0	0	60
Technical Ability	30	10	0	0	0	0	40
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer Structure Ⅰ

Course Information

Course Code	0059	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	相原恒博　他　「新版論理設計入門」　日新出版		
Instructor	Shinokawa Toshiyuki		

Course Objectives

At the completion of this course, students will be able to
1) Understand the design method of the combinational circuit, and design a specific circuit.
2) Understand the design method of the sequential circuit , and expresse by state transition diagram and state transition table.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Derivation of the logical function	Can derive the optimal logic function by using the Quine-McCluskey algorithm almost perfectly.	Can derive the optimal logic function by using the Quine-McCluskey algorithm correctly.	Can't derive the optimal logic function by using the Quine-McCluskey algorithm correctly.
Design of synchronous sequential circuits	Can understand A state transition table and a characteristic equation almost perfectly.	Can understand A state transition table and a characteristic equation correctly.	Can't understand A state transition table and a characteristic equation correctly.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	Students recheck logic circuits. Students learn about the optimization design of combinational circuits and order circuits.
Style	Lectures led by teacher.
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Syllabus description. Digital representation of information.	Can explain the digital representation of the information.
		2nd	Basic logic gates and logic circuits.	Can represent a logical function as a logical expression.
		3rd	Various theorems of Boolean algebra.	Can represent logical expressions as combinational logic circuits.
		4th	Standard system of logical functions.	Can be expressed in principal disjunctive canonical form or principal conjunctive canonical form.
		5th	Simplification by Kamaugh diagram.	Can simplify a logic function by Kamaugh diagram.
		6th	Simplification by Quine-McCluskey algorithm.	Can simplify a logic function by Kamaugh diagram.
		7th	Simplification when there is the presence of a combination inhibition term.	Can simplify a logic function by Quine-McCluskey algorithm.
		8th	Semester midterm exam.	Midterm examination.
	2nd Quarter	9th	Method of representation of the sequential circuit.	Can express sequential circuits by state transition and state transition tables.
		10th	Characteristic equation of a flip-flop.	Can explain the characteristic equation of a flip flop.
		11th	Input equation for the flip-flop.	Can explain the input equation of a flip flop.
		12th	Input equation for the flip-flop.	Can design other flip-flops using flip flops.
		13th	Design of a flip-flop.	Can explain the operation of basic sequential circuits.
		14th	Examples (1) of synchronous sequential circuitry.	Can explain how to design a synchronous sequential circuit.
		15th	Semester final exam.	Terminal examination.
		16th	Return and explanation of the final exam.	Return of the final exam.

Evaluation Method and Weight (%)

	Midterm exam	Final exam	Submissions.	Behavior	Portfolio	Other	Total
Subtotal	25	50	25	0	0	0	100
Basic Ability	25	50	25	0	0	0	100
Technical Ability	0	0	0	0	0	0	0

Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer Structure Ⅱ

Course Information

Course Code	0060	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	堀桂太郎：「図解コンピュータアーキテクチャ入門」（森北出版）		
Instructor	Shinokawa Toshiyuki		

Course Objectives

At the completion of this course, students will be able to
1) Explain how numerical data is expressed in a computer.
2) Explain the mechanism of an arithmetic operation circuit.
3) Explain the mechanism of execution control of an instruction.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Overview.	Can explain the concept of computer architecture almost perfectly.	Can explain the concept of computer architecture correctly.	Can't explain the concept of computer architecture correctly.
Instruction.	Can explain the execution control of an instruction almost perfectly.	Can explain the execution control of an instruction correctly.	Can't explain the execution control of an instruction correctly.
Memory.	Can explain the memory architecture almost perfectly.	Can explain the memory architecture correctly.	Can't explain the memory architecture correctly.

Assigned Department Objectives

MCCコア科目
ディプロマポリシー 1

Teaching Method

Outline	"Students learn about computer architecture with a focus on the following :. 1) Positioning of Computational principles for Neumann computers. 2) A method of configuring a processor of a computer and a memory thereof.
Style	Lectures led by teacher.
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Syllabus description. History of the computer.	Can explain the history of computers.
		2nd	Data Words Number representation : decimal digits.	Can explain how to represent a decimal digit.
		3rd	Number representation : binary digits.	Can explain how to represent a binary digit.
		4th	Arithmetic shift, code extension, and address calculation.	Can explain arithmetic shifts, code extensions, and address calculations.
		5th	Floating point number.	Can explain floating point numbers.
		6th	An instruction word configuration (1).	Can explain instructions and operands.
		7th	An instruction word configuration (2).	Can explain type of instruction and addressing format.
		8th	Semester mid-term exam.	Midterm examination.
	4th Quarter	9th	Arithmetic circuit configuration : summing circuits.	Can explain binary adder.
		10th	Arithmetic circuit configuration : multiplication circuit.	Can explain binary multiplier.
		11th	Arithmetic circuit configuration : pipelining.	Can explain the arithmetic pipeline process.
		12th	Execution control of instructions.	Can explain the execution control of an instruction.
		13th	Memory system configuration.	Can explain how to make memory systems faster.
		14th	Configuration of input / output system.	Can explain the control of the input / output device.
		15th	Semester final exam.	Terminal examination.
		16th	Return and explanation of the final exam.	Return of the final exam.

Evaluation Method and Weight (%)

	Midterm exam	Final exam	Submissions.	Behavior	Portfolio	Other	Total
Subtotal	25	50	25	0	0	0	100
Basic Ability	25	50	25	0	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Algorithm and Data Structure I

Course Information

Course Code	0061	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Kadomura Hideki,Aso Tsukasa		

Course Objectives

At the completion of this course, students will be able to

1) Explain the analysis method and the evaluation method of the algorithms correctly
2) Explain the characteristics of basic data structures and their usage correctly
3) Create an algorithms that use data structures appropriate for solving problems correctly

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain the analysis method and the evaluation method of the algorithms almost perfectly.	Can explain the analysis method and the evaluation method of the algorithms correctly.	Can't explain the analysis method and the evaluation method of the algorithms correctly.
Evaluation 2	Can explain the characteristics of basic data structures and their usages almost perfectly.	Can explain the characteristics of basic data structures and their usages correctly.	Can't explain the characteristics of basic data structures and their usages correctly.
Evaluation 3	Can create algorithms that use data structures appropriate for solving problems almost perfectly.	Can create algorithms that use data structures appropriate for solving problems correctly.	Can't create algorithms that use data structures appropriate for solving problems correctly.

Assigned Department Objectives

ディプロマポリシー 1

Teaching Method

Outline	Students understand the efficiency of algorithms and the practical use of data structures through basic algorithms.
Style	Lectures and exercises: Students use their own laptops.
Notice	A student whose evaluation is less than 60 scores is allowed to take the ratification exam. The student is evaluated by the ratification exam. The evaluation of the student who is allowed to acquire a credit because of the result of the ratification exam shall be 60 scores.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Basic concept of algorithms	Students can explain the concept of algorithms.
		2nd	Basic data structures	Students can explain the concept of basic data structures.
		3rd	Computational complexity of algorithms	Students can explain the computational complexity of algorithms.
		4th	Basic data structure (stack)	Students can explain the characteristics of stack and how to use it.
		5th	Exercise (stack)	Students can create the program of exercise.
		6th	Basic data structure (queue)	Students can explain the characteristics of queue and how to use it.
		7th	Exercise (queue)	Students can create the program of exercise.
		8th	Midterm exam	Midterm exam
	2nd Quarter	9th	Recursive algorithm	Students can explain recursive algorithm.
		10th	Exercise (recursive algorithm)	Students can create the program of exercise.
		11th	Basic data structure (list)	Students can explain the characteristics of list and how to use it.
		12th	Exercise (list)	Students can create the program of exercise.
		13th	Exercise (list)	Students can create the program of exercise.
		14th	Exercise (list)	Students can create the program of exercise.
		15th	Final exam	Final exam.
		16th	Interpretation of the final exam	Return of the final exam.

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	20	0	0	0	0	100
Basic Ability	40	10	0	0	0	0	50

Technical Ability	40	10	0	0	0	0	50
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Algorithm and Data Structure Ⅱ

Course Information

Course Code	0062	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	新・明解C言語で学ぶアルゴリズムとデータ構造		
Instructor	Kadomura Hideki,Furuyama Shoichi		

Course Objectives

At the completion of this course, students will be able to

1) Explain the characteristics and evaluation of sorting algorithms correctly
2) Explain the characteristics and evaluation of searching algorithms correctly
3) Explain the characteristics and evaluation of graph searching algorithms correctly

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain the characteristics and evaluation of sorting algorithms almost perfectly.	Can explain the characteristics and evaluation of sorting algorithms correctly.	Can't explain the characteristics and evaluation of sorting algorithms correctly.
Evaluation 2	Can explain the characteristics and evaluation of searching algorithms almost perfectly.	Can explain the characteristics and evaluation of searching algorithms correctly.	Can't explain the characteristics and evaluation of searching algorithms correctly.
Evaluation 3	Can explain the characteristics and evaluation of graph searching algorithms almost perfectly.	Can explain the characteristics and evaluation of graph searching algorithms correctly.	Can't explain the characteristics and evaluation of graph searching algorithms correctly.

Assigned Department Objectives

ディプロマポリシー 1

Teaching Method

Outline	Students understand the basic algorithms for sorting and searching.
Style	Lectures and exercises: Students use their own laptops.
Notice	A student whose evaluation is less than 60 scores is allowed to take the ratification exam. The student is evaluated by the ratification exam. The evaluation of the student who is allowed to acquire a credit because of the result of the ratification exam shall be 60 scores.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Search algorithm	Students can explain some search algorithms.
		2nd	Linear search algorithm	Students can explain and code the program of linear search algorithm.
		3rd	Binary tree	Students can explain and code the binary tree algorithm.
		4th	Hash algorithm	Students can explain and code the hash algorithm.
		5th	Exercise	Exercises for Search algorithms
		6th	Sorting	Students can explain sorting algorithms.
		7th	Bubble sort	Students can explain and code the bubble sort algorithm.
		8th	Midterm examination	Midterm examination for 1st half
	4th Quarter	9th	Simple selection sort, simple insert sort, shell sort	Students can explain and code simple selection sort, simple insert sort, shell sort.
		10th	Quick sort	Students can explain quick sort method.
		11th	Heap sort	Students can explain heap sort
		12th	Tree structure	Students can explain tree structure.
		13th	Binary tree and binary search tree	Students can explain binary tree and binary search tree.
		14th	Binary search tree	Students can explain the defference between depth-first search (DFS) and breadth-first search(BFS), also can code them.
		15th	Final examination	Final examination
		16th	Answer of final examination	Confirmation of final examination

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	40	0	0	0	10	0	50

Technical Ability	40	0	0	0	10	0	50
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Discrete Mathematics I

Course Information

Course Code	0063	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ito Nao		

Course Objectives

At the completion of this course, students will be able to:
1) Utilize the knowledge of basic mathematics to discrete mathematics.
2) Understand the basic concept of set, mapping and logic.
3) Utilize mathematical formula and diagram for discrete mathematics.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand the relation between discrete mathematics and basic mathematics, and utilize it.	Can utilize basic mathematics.	Cannot utilize basic mathematics.
Evaluation 2	Can explain the basic concept of set, finitary relation, mapping and logic.	Can understand the basic concept of set, finitary relation, mapping and logic.	Cannot under stand the basic concept of set, finitary relation, mapping and logic.
Evaluation 3	Can understand mathmatical formula and diagram for discrete mathematics, and can utlize it.	Can utilize mathematical formula and diagram for discrete mathematics.	Cannot utilize mathematical formula and diagram for discrete mathematics.

Assigned Department Objectives

ディプロマポリシー 1

Teaching Method

Outline	In information science, set, finitary relation and predicative logic are fundamental and important. In this course, we will treat the basic idea and concept of them.
Style	Lectures by teachers alone are conducted.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance	Can explain the target and idia of dsicrete mathematics.
		2nd	Numeral expression I	1) Ccan express a negative number with base n. 2) Can calculate addition and substraction with base n.
		3rd	Numeral expression II	1) Can express a decimal with base n. 2) Can explain approximation, rouding, effective digit and error.
		4th	Proposition and logical operation I	Can explain truth value and De Morgan's theorem.
		5th	Proposition and logical operation II	1) Can explain sufficient condition, necessary condition and necessary an sufficient condition. 2) Can express the converse, the inverse and the contraposition of a proposition.
		6th	Set I	Can express the basic idea and concept of set.
		7th	Set II	Can perform a set operation following De Morgan's theorem.
		8th	Midterm exam	
	4th Quarter	9th	Mapping I	1) Can explain the idea and concept of mapping. 2) Can explain the relation between mapping and function.
		10th	Mapping II	Can perform a set compositon and permutation.
		11th	Relation I	Can explain the idea and concept of relation, equality relationship, magnitude relationship and ordered pair.
		12th	Relation II	Can express the relation between objects with directed graph.
		13th	Predicate logic I	Can explain the relation between predicate and set.
		14th	Predicate logic II	Can perform a mathematical proof using mathematical induction
		15th	Terminal exam	

		16th	Grading confirmation, question evaluation questionnaire	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	40	0	0	0	10	0	50
Technical Ability	40	0	0	0	10	0	50
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Applied Physics I

Course Information

Course Code	0069	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yoshii Yotsumi		

Course Objectives

At the completion of this course, students will be able to
1) Perceive the displacement, velocity, and acceleration of an object as a variable of time and can solve basic problems related to constant-velocity motion and isokinetic motion by using calculus
2) Calculate moment of inertia on the basic shape of a rigid body
3) Solve fundamental problems related to rigid body motion described by the equation of motion of the center of gravity and rotation

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can perceive the displacement, velocity, and acceleration of an object as a variable of time and can solve basic problems related to constant-velocity motion and isokinetic motion by using calculus almost perfectly	Students can perceive the displacement, velocity, and acceleration of an object as a variable of time and can solve basic problems related to constant-velocity motion and isokinetic motion by using calculus correcty	Students can't perceive the displacement, velocity, and acceleration of an object as a variable of time and can solve basic problems related to constant-velocity motion and isokinetic motion by using calculus
Evaluation 2	Students can calculate moment of inertia on the basic shape of a rigid body almost perfectly	Students can calculate moment of inertia on the basic shape of a rigid body correcty	Students can't calculate moment of inertia on the basic shape of a rigid body
Evaluation 3	Students can solve fundamental problems related to rigid body motion described by the equation of motion of the center of gravity and rotation almost perfectly	Students can solve fundamental problems related to rigid body motion described by the equation of motion of the center of gravity and rotation correcty	Students can't solve fundamental problems related to rigid body motion described by the equation of motion of the center of gravity and rotation

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	Learning Objectives (Aim of Class) (Educational Objectives) A3, B1 Physical thinking is fostered by introducing a mathematical description of physical phenomena, taking into account the continuity of contents up to the second year. The purpose of the previous phase is to focus on dynamics and to deepen the theoretical and practical understanding and application of the phenomena in nature. To develop the ability to explain the phenomenon as a tool for mathematics, a problem exercise and a small test are carried out.
Style	Lectures by teachers alone are conducted.
Notice	The portfolio is evaluated as 20%, and the test is evaluated as 80%. The evaluation of the test is the average of the evaluation of the interim and the end of the study. A person who has a rating of less than 60 points may be subjected to an approval test by a request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Fundamentals of Dynamics : Speed and Acceleration	Can express the relationship between position vectors, velocity and acceleration by calculus, and estimate the force that works on the drop motion, and analyze the principle.
		2nd	Fundamentals of Dynamics : Law of motion	Can explain Newton's laws of motion. By a mathematical description of the force, it is possible to construct a motion equation.
		3rd	Fundamentals of Dynamics : Solution of the equation of motion	Can solve the equation of motion given by differential equations.
		4th	Fundamentals of Dynamics : Problem exercise	Can derive and solve equations of motion in dynamical problems.
		5th	Fundamentals of Dynamics : Energy	Can explain the relationship between work and kinetic energy and position energy.
		6th	Fundamentals of Dynamics : Energy conservation law	Can explain the relationship between conservation power and position energy, and energy conservation law.
		7th	Mechanics of a point system : Multi-system problem	Can describe the center of gravity and equation of motion in a multi-system problem and can derive momentum conservation law.
		8th	Midterm exam	Can solve the problem by focusing on the basic range of dynamics, focusing on the equation of motion and the conservation law of energy.
	2nd Quarter	9th	Mechanics of a point system : Momentum conservation law	Can solve collision problems by using the momentum conservation law on multi-system problems.

		10th	Mechanics of a point system : Equation of motion of rotation	Can derive an equation of motion for a rotational motion introducing angular momentum
		11th	Mechanics of a point system : Problem exercise	Can solve problems centered on the preservation of momentum.
		12th	Rigid Mechanics : Equation of motion of a rigid body	Can derive the equation of motion of the rotation when the rigid body rotates by extending the equation of motion of the rotation of the quality point system.
		13th	Rigid Mechanics : Moment of inertia	Can calculate the moment of inertia according to the shape of the rigid body.
		14th	Rigid Mechanics : Rigid body exercise	Can solve the problem of describing the motion equation of the center of mass and the equation of motion of the rotation.
		15th	Final exam	Can solve problems related to quality point system and rigid body.
		16th	Return of answer sheets, explanation, class questionnaire, etc.	Evaluation and confirmation

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	80	0	0	0	20	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Applied Physics Ⅱ

Course Information

Course Code	0070	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	3rd
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yoshii Yotsumi		

Course Objectives

At the completion of this course, students will be able to
1) Solve the fundamental problem by taking the motion of vibration as a differential equation
2) Describe a basic wave equation, and explain the relationship between wave equation and wave equation
3) Solve fundamental problems related to refraction, reflection, and interference of light

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can solve the fundamental problem by taking the motion of vibration as a differential equation almost perfectly.	Students can solve the fundamental problem by taking the motion of vibration as a differential equation correctly.	Students can't solve the fundamental problem by taking the motion of vibration as a differential equation.
Evaluation 2	Students can describe a basic wave function, and explain the relationship between wave function and wave equation almost perfectly.	Students can describe a basic wave function, and explain the relationship between wave function and wave equation correctly.	Students can't describe a basic wave function, and explain the relationship between wave function and wave equation.
Evaluation 3	Students can solve fundamental problems related to refraction, reflection, and interference of light almost perfectly.	Students can solve fundamental problems related to refraction, reflection, and interference of light correctly.	Students can't solve fundamental problems related to refraction, reflection, and interference of light

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	Learning Objectives (Aim of Class) (Educational Objectives) A3, B1 To develop physical thinking by mathematical description of physical phenomena, taking into account the continuity of contents up to 3rd year. It aims to deepen theoretical and practical understanding and application for physical phenomena. In the first half, we will study vibration and wave phenomena in order to promote cooperation with information engineering experiments and high grades of electromagnetism in high grades. In the second half, we learn about the basic interpretation of the interference phenomenon of light. To develop the ability to explain the phenomenon as a tool to explain the phenomenon, we will conduct a problem exercise.
Style	Lectures by teachers alone are conducted.
Notice	The portfolio is evaluated as 20%, and the test is evaluated as 80%. The evaluation of the test is the average of the evaluation of the interim and the end of the study. A person who has a rating of less than 60 points may be subjected to an approval test by a request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Vibrations : harmonic vibrations	Can explain and solve the equation of motion of harmonic vibrations.
		2nd	Vibration : vibrational energy	Can explain the energy of vibrations.
		3rd	Vibration : damped vibration	Can construct and solve equations of motion for damped oscillations.
		4th	Vibration : problem exercises	Can solve problems related to vibrations.
		5th	Waves : wave equations	Can explain the wave equation.
		6th	Waves : periodic waves	Can explain the nature of a wave.
		7th	Waves : problem exercises	Can solve problems related to waves.
		8th	Midterm exam	Can solve problems related to vibration and waves.
	4th Quarter	9th	Waves : steady waves	Can explain the superposition of waves and the initial beginning of the waves.
		10th	Optical : Speed and Wavelength of Light	Can explain the speed and wavelength of light and solve the problem.
		11th	Optical : Reflection and Refraction of Light	Students explain the reflection and refraction of light, and can solve the problem.
		12th	Optics : light interference	Can explain the interference of light and solve the problem.
		13th	Optical : Application of Light	Can explain light polarization and application of light such as spectroscope.
		14th	Optics : problem exercises	Can solve problems related to optics.
		15th	Final exam	Can solve problems related to optics.

		16th	Return of answer sheets, explanation, class questionnaire, etc.	Evaluation and confirmation

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	80	0	0	0	20	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Physical Education Ⅳ

Course Information

Course Code	0075	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	「Active Sports 総合版」 大修館書店		
Instructor	Ohashi Chisato,Hayashi Naoto		

Course Objectives

1. Promotion the interest in exercise and the ambition.
2. Carrying out own roles while cooperation with mates.
3. Keeping discipline and respecting persons while competing in accordance with fair play spirit.

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	We can estimate the data of fitness tests by ourselvs and plan activities to develop physical strength.	We can estimate the data of fitness tests by ourselvs and know own fitness level objectively.	We can't estimate the data of fitness tests by ourselvs and know own fitness level objectively.
評価項目2	We can understand own roles and contribute as a member of team for the goal.	We can understand own roles and make efforts to contribute for team's goal.	We can't understand own roles and methods to contribute for team's goal.
評価項目3	We can play games with spirits of respect and fairness.	We can understand the importance that we play games with spirits of respect and fairness.	We can't understand the importance that we play games with spirits of respect and fairness.

Assigned Department Objectives

ディプロマポリシー 2

Teaching Method

Outline	1. Learning the methods and attitudes to slove own tasks for improvement unhealthy lifestyles. 2. Acquiring the human resources like cooperation, communication and leadership for achievement of team's goals.
Style	In1st and 2nd classes, enforcing fitness tests for longitudinal and cross-section estimation of own fitness levels. Style of classes are adopted to select some sports in accordance with own fitness level, needs and ability for exercise by results of finess tests .
Notice	Promotion for safety counterplan. In 3rd to 15th classes, student selects 2 sports and pursue these in 12 times (1 sports 6 times * 2). As a result is under 60 points, student can make-up a resit by an application. If a result of resit is filled with established stanndard, an estimation becomes 60 points.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Orientation & Fitness test	We take an explanation of the syllabuse and take fitness tests.
		2nd	Fitness test	We take fitness tests and estimate own fitness level. We awake fitness factors that we should improve.
		3rd	Select Sports (Basketball, Beach Volleyball, Futsal, Table Tennis)	We select a sports fitting our own exercise needs.
		4th	Select Sports (Basketball, Beach Volleyball, Futsal, Table Tennis)	We prepare in coopration with teammates and practice in safety.
		5th	Select Sports (Basketball, Beach Volleyball, Futsal, Table Tennis)	We set a goal of the sports we selected with teammates.
		6th	Select Sports (Basketball, Beach Volleyball, Futsal, Table Tennis)	We understand skills of optional sports and practice to build up these.
		7th	Select Sports (Basketball, Beach Volleyball, Futsal, Table Tennis)	We learn and act together to get higher skills.
		8th	Select Sports (Basketball, Beach Volleyball, Futsal, Table Tennis)	We enjoy to play games together by easier rules.
	4th Quarter	9th	Select Sports (Beach Volleyball, Ultimet, Basketball, Badminton)	We select another sports fitting our own exercise needs.
		10th	Select Sports (Beach Volleyball, Ultimet, Basketball, Badminton)	We learn and act together to get higher skills.
		11th	Select Sports (Beach Volleyball, Ultimet, Basketball, Badminton)	We learn and act together to build up individual/ group tactics.

		12th	Select Sports (Beach Volleyball, Ultimet, Basketball, Badminton)	We play games in safety, fairly by rules.
		13th	Select Sports (Beach Volleyball, Ultimet, Basketball, Badminton)	We enjoy to play games together by easier rules.
		14th	Select Sports (Beach Volleyball, Ultimet, Basketball, Badminton)	We play games in safety, fairly by rules.
		15th	Class Evaluation	We pursue self-estimation and mutual-estimation. We make a report about the relation between longlife sports and sports we select.
		16th		

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	20	0	0	20	40	20	100
基礎的能力	20	0	0	0	0	0	20
専門的能力	0	0	0	0	40	20	60
分野横断的能力	0	0	0	20	0	0	20

Toyama College	Year	2020	Course Title	Cross-cultural Training For The English-Speaking World

Course Information

Course Code	0090	Course Category	General / Elective
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

（1）英語を正確に使うことの重要性を認識し努力することができる。
（2）英語の背景にある欧米文化の主語と動詞を明確にするコミュニケーションスタイルの構築することができる。
（3）規則、約束、期限を遵守でき、主体的に生活できるように努力をすること。

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
英語力	英語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。	英語を正確に使うことの重要性を認識し努力することができる。	英語を正確かつ積極的に使うための努力しない。
異文化コミュニケーション	英語の背景にある欧米文化、とくに主語と動詞を明確にする因果関係のコミュニケーションスタイルに気づき、これを新たに構築しようと努力することができる。	英語の背景にある欧米文化の主語と動詞を明確にするコミュニケーションスタイルの構築することができる。	主語と動詞を明確にするコミュニケーションスタイルを学ぼうとしない。
言語的コミュニケーション	規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。	規則、約束、期限を遵守でき、主体的に生活できるように努力をすること。	言語による主体的な生活を作ろうとしない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	（1）目標 ハワイのカウアイコミュニティカレッジにおいて工学系の学生と共に学び、活動することを通して、異文化理解を促進して視野を広げること，そして，英語の運用力を獲得するとともに正確に言葉を使う意識を高めること。 （2）概要 ハワイ・カウアイコミュニティカレッジで３週間の異文化体験研修を実施する。
Style	英語圏の国へ滞在し現地で語学研修等の実習を行う。
Notice	ハワイのカウアイコミュニティカレッジが提供する工学系英語コース（３週間）での授業（0900～1500）と当該大学の学生との交流及びホームステイを２泊３日実施する。通常の宿泊はコテッジでの共同合宿の形態をとる。 「研修改善策」 研修期間中には、教員が同行して，授業及びホームステイでの学生の様子を観察し，問題に対応する方法に換えた。帰国後のアンケート及びレポートから，参加学生は研修での体験に概ね満足している。 追認試験は実施しない。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	英語圏：ハワイ　カウアイコミュニティカレッジ	夏季休業中に実施する
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
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 (%)

	レポート・発表	出席・態度	Total
Subtotal	80	20	100
基礎的能力	0	0	0
専門的能力	40	10	50
分野横断的能力	40	10	50

Toyama College	Year	2020	Course Title	Cross-cultural Training For Japan Sea Rim

Course Information

Course Code	0091	Course Category	General / Elective
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

(1) Recognize and learn the importance of using Pacific rim languages correctly.
(2) Gain valuable experience and hands-on communication and immerse yourself in the culture of the target language.
(3) Be able to comply with the rules, promises, and deadlines and make an effort to live independently.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
General target language ability	The student clearly understands and recognizes the importance of using the target language correctly and positively.	The student is aware of the importance of using target language correctly and positively.	The student is unaware and is unable to use target language correctly and positively.
Cultural Understanding	The student clearly understands the importance of how culture connects with the target language, and is able to communicate in real-life situations.	The student is aware of the importance of how culture connects with the target language in real-life situations.	The student is unaware of the importance of how culture connects with the target language in real-life situations.
Communicative Competence	The student is able to comply with the rules, promises, and deadlines that are necessary to live independently in the target language country.	The student is aware of the rules, promises, and deadlines that are necessary to live independently in the target language country.	The student is unaware of the rules, promises, and deadlines and unable to live independently in the target language country.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	(1) Goal Promote cross-cultural understanding and broaden your experience by learning the target language within the corresponding country. (2) Overview Cross-cultural experience training at a language center for the target language.
Style	Approved by the committee based on prior guidance, participation in on-site training, and submission of follow-up reports and grades, attendance certificates. Evaluated as "Pass" or "Fail."
Notice	As conditions for participation in this training, students participation must be approved. The leader will accompany the student for the first week after departure to help solve problems. There may be cancellations due to world affairs. See above for the method of evaluation.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	To be decided in cooperation with the host instituion.	
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
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 (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	0	0	0
Basic Ability	0	0	0	0	0	0	0
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Historical Science Ⅱ

Course Information

Course Code	0092	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	None		
Instructor	Ichishima Akiyuki		

Course Objectives

To understand the formative process of the Hokuriku and Kanto regional communities from the Muromachi period to the early modern era. Develop research capabilities and logical thinking abilities by creating reports using materials regarding the regional history.

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
Evaluation Item 1	Understands the overall flow of Japanese history and acquires detailed knowledge relating to important figures, systems and incidents.	Generally understands the overall flow of Japanese history and acquires basic knowledge relating to important figures, systems and incidents.	Cannot understand the overall flow of Japanese history and lacks basic knowledge relating to important figures, systems and incidents.
Evaluation Item 2	Knows the detailed content of historical events, and can accurately understand their significance and explain them logically.	Knows the overview of historical events, and can generally understand their significance and explain them in simple terms.	Has vague knowledge of historical events and hardly understand their significance.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	Goal: To develop the ability to understand various social phenomena from various angles and in-depth through various examples of history. Overview: The course is centered around the Hokuriku region, particularly Toyama Prefecture, during the middlle ages and early modern era. By building up the regional history, reflect on the "overview of history" from a central point of view. We will also reconsider Japanese history from the perspective of the differences between East Japan and West Japan based on the political history during the Muromachi period, and develop a method to understand Japanese society pluralistically.
Style	Lectures conducted by individual professor
Notice	The main questions of the regular exams can be found on the blackboard and distributed resumes. The reports (implement at least once) will be a requirement to receive credit. Students whose scores are less than 60 points may request to take a make-up exam. Students whose acquisition of units is acknowledged as a result of the make-up test will receive a score of 60 points.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Sengoku upheaval in Hokuriku I	Formation of sengoku "regional states" in the Hokuriku region ①
		2nd	Sengoku upheaval in Hokuriku II	Formation of sengoku "regional states" in the Hokuriku region ②
		3rd	Sengoku upheaval in Hokuriku III	Uesugi Echigo's rule over Hokuriku and Oda Nobunaga's entry into Hokuriku
		4th	Sengoku upheaval in Hokuriku IV	The Ishiyama Hongan-ji War and Hokuriku forces
		5th	Modern history of Hokuriku I	Unification by the Shokuho government and Edo shogunate and the reorganization of the Hokuriku region
		6th	Modern history of Hokuriku II	Administration of a clan: Kaga Clan, Fukui Clan, Toyama Clan
		7th	Modern history of Hokuriku III	Kaga Clan's rule over Kaetsuno
		8th	Mid-term exam	Confirm course content from Week 1 to Wek 7
	4th Quarter	9th	Medieval history of East Japan I	Differences between the East and West in Japanese history
		10th	Medieval history of East Japan II	Expansion of the Kanto samurai society and the Kamakura shogunate
		11th	Medieval history of East Japan III	Rule of Kanto provinces by the Muromachi shogunate and the Kamakura bakufu system
		12th	Medieval history of East Japan IV	Kamakura shogunate and Kanto Kanrei, Eikyo incident
		13th	Medieval history of East Japan V	Kyotoku incident and establishment of the Furukawa shogunate
		14th	Medieval history of East Japan VI	Battle between Kanto Kanrei Uesugi Kenshin and Sengoku Daimyo Hojo Clan
		15th	Medieval history of East Japan VII	Oda administration's entry into Kanto, Kanto sobuji-rei by the Toyotomi administration, fall of the Hojo Clan (end of the Sengoku period)
		16th	Final exam	Confirmation of course content since the mid-term 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	210	0	0	0	0	90	300
基礎的能力	70	0	0	0	0	30	100
専門的能力	70	0	0	0	0	30	100
分野横断的能力	70	0	0	0	0	30	100

Toyama College	Year	2020	Course Title	Philosophy Ⅰ

Course Information

Course Code	0093	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	Gen Kida/Akira Suda "Basic Lectures on Philosophy" (Chikuma Gakugei Bunko)		
Instructor	Muranaka Tatsuya		

Course Objectives

To be able to explain (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy, and evaluate them critically.

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
Evaluation Item 1	Can properly explain (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy.	Can explain (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy.	Cannot explain (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy.
Evaluation Item 2	Can critically evaluate (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy extremely well.	Can critically evaluate (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy.	Cannot critically evaluate (a portion) of the discourses and ideas of philosophers who search for the possibilities, words and truth of philosophy properly.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	To understand and examine what philosophy means, whether the truth can be established and whether philosophy can be established as an academic field based on the descriptions contained in introductory books, general introductions to the subject and translated philosophy books, and aim to express your own ideas.
Style	Mainly lectures conducted by a single professor. When necessary, presentations and debates among the students will be incorporated into the lesson.
Notice	Make sure to save and arrange the lecture print-outs and materials. This course requires students to read, think and express their own ideas each time. Participation in the course will also be considered during student evaluations. The course plan may be changed appropriately according to the students' level of understanding and interest. Students whose scores are less than 60 points may request to take a make-up exam. Students whose acquisition of units is acknowledged as a result of the make-up test will receive a score of 60 points. It is recommended that students read the text and materials used during the course in advance when studying at home.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Significance of learning about the history of philosophy	Guidance of study and evaluation methods To understand the perspective of philosophy as human nature
		2nd	The history of the heart of humanity Animal behavior and human behavior	How did humans evolve from apes?
		3rd	Establishment of the magical world Three types of creation myths	Practical magical thinking and theoretical mythological thinking Compose/produce/create
		4th	Concept of Physis The birth of "philosophy" Philosophers before Socrates	What is Physis? Sophists and Socrates Physis and humans
		5th	Plato/Aristotle From ancient times to the Middle Ages From the Middle Ages to the modern period	Theory of forms/Potentiality and actuality Augustinus and Plato Thomas Aquinas and scholasticism
		6th	Descartes and rationalism Kant	Cartesian doubt Subjectivity and objectivity/Mind-body dualism Congenital comprehensive judgment
		7th	Hegel and the completion of modern philosophy Nietzsche	Spirit and self-consciousness/Labor and awareness Nihilism/Will to power
		8th	Pioneers of modern philosophy Appearance of modern philosophy	Søren Kierkegaard Existentialism/Logical positivism Phenomenology/Structuralism
	2nd Quarter	9th	Phenomenology/Umwelt/Lifeworld Husserl's phenomenology	Reinstatement of the perceptual world/Umwelt Development of phenomenology
		10th	Existentialism Kierkegaard and the three stages of life Development of existentialism Heidegger and others	What does existence mean? From atheistic existentialism to religious existentialism What is anxiety and existence?/Critical situations
		11th	Marxism Wage labor and alienation	Humans and labor/What are products? Division of labor and alienation

		12th	Pragmatism Theory of truth	Characteristics of pragmatism Religion and pragmatism
		13th	Structuralism Existentialism and structuralism/linguistics Cultural anthropology/phenomenology and structuralism	The concept of structuralism Saussure and structural linguistics Lévi-Strauss and structuralism
		14th	Logic and mathematics Truth function Logical positivism The Later Wittgenstein on Language	Truth function Verification theory Ordinary language philosophy
		15th	Final exam	
		16th	Grading assessment and confirmation	Outline the major flow of the history of philosophy

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	0	0	0	0	0	0	0
基礎的能力	８０	0	0	0	0	２０	0
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

Toyama College	Year	2020	Course Title	Philosophy Ⅱ

Course Information

Course Code	0094	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	Gen Kida/Akira Suda "Basic Lectures on Philosophy" (Chikuma Gakugei Bunko)		
Instructor	Muranaka Tatsuya		

Course Objectives

To become aware of various complicated questions and paradoxes by engaging with one end of the various philosophical thoughts that have formed the way of thinking of contemporary humans, and to be able to think about ways to view things from an angle that differs from common sense based on the idea of philosophy.

Rubric

	理想的な到達レベルの目安(優)	標準的な到達レベルの目安(良)	未到達レベルの目安(不可)
Evaluation Item 1	Can properly notice the various paradoxes that surround contemporary humans and think well about ways to view things from an angle that differs from common sense based on the idea of philosophy.	Can notice the various paradoxes that surround contemporary humans and think about ways to view things from an angle that differs from common sense based on the idea of philosophy.	Cannot notice the various paradoxes that surround contemporary humans and think about ways to view things from an angle that differs from common sense based on the idea of philosophy.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	Learn about the possibilities of the establishment of good and evil, beauty and ugliness and truth and falsehood. Use the words of popular philosophers to think about the overview of the history of philosophy. Deepen your understanding and examination of the themes listed above based on the descriptions contained in introductory books, general introductions to the subject and translated philosophy books, and aim to express your own ideas.
Style	Mainly lectures conducted by a single professor. When necessary, presentations and debates among the students will be incorporated into the lesson.
Notice	Make sure to save and arrange the lecture print-outs and materials. This course requires students to read, think and express their own ideas each time. Participation in the lesson will also be considered during student evaluations. The course plan may be changed appropriately according to the students' level of understanding and interest. Students whose scores are less than 60 points may request to take a make-up exam. Students whose acquisition of units is acknowledged as a result of the make-up test will receive a score of 60 points. It is recommended that students read the text and materials used during the course in advance when studying at home.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Significance of learning about the history of philosophy	
		2nd	What makes a human? The birth of humans Human behavior	Concept of human beings Animals that are born before their completion Animals that manipulate symbols
		3rd	Humans and language Robinson Crusoe-type humans and nature	Mentally deranged people/languages and perspectives on nature Reasonable labor/the environment and humans
		4th	Historical background of the mind-body problem Descartes' mind/body dualism	Soul/entity/human body Thoughts and extensions
		5th	Human will and the central nervous system Sensations and the central nervous system Body schema/Phenomenal body	Physical and psychological Revel Sensory and psychological state Merleau-Ponty's body theory
		6th	Death and humans Concept of metaphysical immortality	"Know thyself" Death and culture Survival of the individual soul
		7th	Existence and death	Present existence and death/Experience of nothingness Presence of tools/Presence of others
		8th	Social phenomenology	Interpersonal relationships of infants Jealousy
	4th Quarter	9th	Individuals and society Overall philosophy	Social animals Plato/Aristotle/Tetsuro Watsuji
		10th	Overall reality Advantage of others	Overall abandonment Advantage of others
		11th	Ontology and epistemology	Empiricism and rationalism Reason and perception
		12th	Criticism of Wittgenstein's language Question of philosophy through awareness	Question of philosophy "What is…" The Big Bang Theory
		13th	Philosophy and metalanguage	What is a "metalanguage"?

		14th	"Happiness" as a metalanguage "Myself" as a metalanguage	What does "happiness" mean? What does "ego" mean?
		15th	Final exam	
		16th	Summary Grading evaluation and confirmation	Outline the major subjects of philosophy

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	0	0	0	0	0	0	0
基礎的能力	８５	0	0	0	0	１５	0
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

Toyama College	Year	2020	Course Title	Economics Ⅰ

Course Information

Course Code	0095	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	N・グレゴリー・マンキュー（足立、石川ほか訳）『マンキュー入門経済学 (第3版)』 東洋経済新報社、2019年。5月から使用する。		
Instructor	Niisato Yasutaka		

Course Objectives

経済学・ミクロ経済学の基礎知識・理論の習得

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	授業で学ぶ経済学の専門用語を十分理解し、それを基に経済の動きを説明、考察できる。	授業で学ぶ経済学の専門用語をある程度理解し、それを基に経済の動きをある程度説明、考察できる。	授業で扱う経済学の専門用語の理解が足りず、経済の動きを説明、考察できない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	目標：経済諸事象の意味を理解できるようになること 概要：ミクロ経済学を中心として経済学の基礎知識・理論を学ぶ
Style	学生の理解度に応じて、授業計画を変更することがある。教員単独で、講義を実施する。
Notice	定期試験80点、ポートフォリオ（態度、発表、課題などの平常点）20点とし、合計６０点を合格とする。 評価が６０点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス	シラバスの内容を確認し、ガイダンスを行う。社会・経済問題について認識する。
		2nd	経済学とは（１）	社会・経済問題についての認識を深め、経済学のアプローチを学ぶ。
		3rd	経済学とは（２）	経済学のアプローチを学ぶに必要な、グラフ・数学の用法を学ぶ。
		4th	需要と供給（１）	需要曲線、供給曲線
		5th	需要と供給（２）	市場均衡
		6th	政府の政策（１）	価格規制、課税
		7th	政府の政策（２）	弾力性
		8th	中間試験	重要事項とその理解を確認する
	2nd Quarter	9th	市場の効率性（１）	消費者余剰、生産者余剰
		10th	市場の効率性（２）	市場の効率性と市場の失敗
		11th	外部性（１）	社会的費用
		12th	外部性（２）	外部性の内部化
		13th	貿易の利益（１）	絶対優位、比較優位
		14th	貿易の利益（２）	輸出、輸入
		15th	期末試験	前期の学習内容の理解を確認する。
		16th	期末試験の講評と学期のまとめ	成績評価･確認

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	80	0	0	0	20	0	100
基礎的能力	80	0	0	0	20	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

Toyama College	Year	2020	Course Title	Economics Ⅱ

Course Information

Course Code	0096	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	N・グレゴリー・マンキュー（足立、石川ほか訳）『マンキュー入門経済学 (第3版)』 東洋経済新報社、201版)』 東洋経済新報社、2019年。		
Instructor	Niisato Yasutaka		

Course Objectives

マクロ経済学の基礎知識と理論の習得

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	授業で学ぶ経済学の専門用語を十分理解し、それを基に日本経済や国際経済の動きを説明、考察できる。	授業で学ぶ経済学の専門用語をある程度理解し、それを基に日本経済や国際経済の動きをある程度説明、考察できる。	授業で学ぶ経済学の専門用語の理解が不十分で、日本経済や国際経済の動きを説明、考察できない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	目標：経済諸事象の意味を理解できるようになること 概要：マクロ経済学の基礎的な知識・理論を応用し、具体的な経済諸事象を読み解いていく。
Style	学生の理解度に応じて、授業計画を変更することがある。教員単独で、講義を実施する。
Notice	定期試験80点、ポートフォリオ（態度、発表、課題などの平常点）20点とし、合計６０点を合格とする。評価が６０点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者にあっては、その評価を６０点とする。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	ガイダンス	授業の進め方等のガイダンスを行う。社会・経済問題を認識する。
		2nd	国民所得の測定	GDP、実質と名目
		3rd	生活費の測定	消費者物価、GDPデフレーター
		4th	生産と成長（１）	生産性、生産関数
		5th	生産と成長（２）	経済成長
		6th	失業	労働力、失業率、労働力率
		7th	貯蓄、投資と金融システム	金融市場、債券、株式、国民貯蓄、民間貯蓄、政府貯蓄、投資
		8th	中間試験	重要事項の確認
	4th Quarter	9th	貨幣システム	貨幣、中央銀行
		10th	総需要と総供給（１）	景気循環、総需要曲線
		11th	総需要と総供給（２）	短期と長期の総供給曲線
		12th	総需要と総供給（３）	経済変動
		13th	開放マクロ経済学（１）	開放経済、貿易収支
		14th	開放マクロ経済学（２）	資本収支、為替相場
		15th	期末試験	後期の学習内容と理解の確認を行う。
		16th	期末試験の講評と学期のまとめ	成績評価・確認

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	80	0	0	0	20	0	100
基礎的能力	80	0	0	0	20	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

Toyama College	Year	2020	Course Title	Comprehensive English Ⅳ

Course Information

Course Code	0097	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	Successful keys to the TOEIC Listening and Reading Test (Goal 500), 4th edition		
Instructor	Moananu Charlton		

Course Objectives

1. Introduce the essential elements of the TOEIC test.
2. Introduce "Test-taking Strategies" for each section of the TOEIC test (8 parts).
3. Introduce useful words, collocations and expressions related to the TOEIC test.
4. Through in-class TOEIC explanations, strategies, activities, and TOEIC material-focused examinations, help students can the test with confidence.

Rubric

	Ideal Level of achievement (very good) 80%	Standard Level of achievement (good) 60%	Unacceptable Level of achievement (Fail) <60%
Achievement 1: Grammar	Student clearly understands grammar structures covered in the textbook.	Student partially understands grammar structures covered in the textbook.	Student is unable to understands grammar structures covered in the textbook.
Achievement 2 Reading	Student clearly understands readings covered in the textbook.	Student partially understands readings covered in the textbook.	Student is unable to understand readings covered in the textbook.
Achievement 3 Listening	Student clearly understands listening covered in the textbook.	Student partially understands listening covered in the textbook.	Student is unable to understand the listening covered in the textbook.
Achievement 4 Writing including: words, collocations, expressions	Student clearly understands writing, including: words, collocations, expressions covered in the textbook.	Student partially understands writing, including: words, collocations and expressions covered in the textbook.	Student unable to understand writing including: words, collocations, expressions covered in the textbook.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	To introduce the TOEIC test; the structure, contents and test-taking strategies. Through weekly practice tests, targeted word quizes and useful test taking strategies for each section, students will be able to take the TOEIC test with confidence.
Style	teacher-student lecture format, pair-work, group-work format, computer-assisted learning.
Notice	Homework must be submitted by the deadline. If you are absent on the day of a test (ALL tests included), please provide a doctor's note in order to do a make-up test. Make-up tests will be given only ONCE.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Syllabus. Pre-test	explanation of syllabus. Pre-Test.
		2nd	Unit 1-Daily Life	full coverage of unit including practice test. Word development activity. Homework
		3rd	Unit 1 word test. TOEIC test strategy section 1. Unit 2-Places	word test U.1. TOEIC test taking strategy 1 explanation. Unit 2 coverage. self study 1 check.
		4th	Unit 2-Places (cont.)	further coverage of Unit 2. HW. self-study 2.
		5th	Unit 2 test. TOEIC Unit 3-People	Word test Unit 2. full coverage of unit including practice test. Word development activity. Homework
		6th	TOEIC Unit 3-People (cont.) TOEIC strategies sec. 2.	Word test Unit 3. Writing activity. further expansion of Unit 3.
		7th	Unit 4 Travel	full coverage of unit including practice test. Word development activity. Homework
		8th	中間試験	Unit 1-4
	2nd Quarter	9th	Unit 4-Travel (cont.)	word test U.4. Further coverage of Unit 4. HW..
		10th	Unit 5 Business. TOEIC strategies sec. 3.	full coverage of unit including practice test. Word development activity. Homework
		11th	Unit 6 Office. Word test Unit 5.	full coverage of unit including practice test. Word development activity. Word test U. 5
		12th	Unit 6 Office. (cont.). Word test U. 6. Unit 7 technology	word test U.6.full coverage of unit 7 including practice test. Word development activity.
		13th	Unit 7 (cont.), word test Unit 7. Unit 8. TOEIC strategies sec.4.	word test Unit 7. full coverage of unit 8 including practice test. Word development activity.
		14th	Unit 8. (cont.). Word test unit 8	Word test U 8. finish Unit 8.
		15th	期末試験	Units 5 - 8
		16th	TOEIC strategies sec. 5.	explanation of strategies.

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	Comprehensive English V

Course Information

Course Code	0098	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	Successful Keys to the TOEIC test. Mizumoto-Stafford., Basic Skills for Reading. Andersen-Kawamata		
Instructor	Moananu Charlton		

Course Objectives

1. Introduce the essential elements of the TOEIC test
2. Introduce "TOEIC test-taking strategies for each section of the TOECI test (8 parts).
3. Introduce essential words, collocations, expressions related to the TOEIC test.
4. Through in-class TOEIC explanations, strategies, activities, and TOEIC material-focused examinations, students will be able to take the test with confidence.

Rubric

	理想的な到達レベルの目安 (very good) 80%	標準的な到達レベルの目安 (good) 60%	未到達レベルの目安 (Fail) <60%
評価項目1 Grammar	Student clearly understands grammar structures covered in the text book.	Student partially understands grammar structures covered in the text book.	Student is unable to understand grammar structures covered in the text book.
評価項目2 Reading	Student clearly understands readings covered in the textbook.	Student partially understands readings covered in the textbook.	Student is unable to understand the readings covered in the text book.
評価項目3 Listening	Student clearly understands listening covered in the textbook.	Student partially understands listening covered in the textbook.	Student is unable to understand Listening covered in the text book.
評価項目4 Writing, including: words: collocations, expressions	Student clearly understands writing, including: words; collocations, expressions covered in the textbook.	Student partially understands writing, including: words; collocations, expressions covered in the textbook.	Student is unable to understand writing, including: words; collocations, expressions covered in the textbook.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	To introduce the TOEIC test; the structure, contents and test-taking strategies. Through weekly practice tests and targeted word quizes and useful test taking tips for each section, students will be able to take the TOEIC test with confidence.
Style	The class will meet once a week for 90-minutes. The 90 minutes class will use a teacher-student lecture format, pair-work, group-work format as well as computer-assisted language learning (CALL).
Notice	(1) The teacher will introduce various online resources that help students attain higher TOEIC scores. Students are encouraged to use these resources. (2) Make-up examinations will ONLY be given to students who provide a doctor's note or has an "excused" absence. (3) Make-up tests will only be given once.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Unit 9 Management. TOEIC strategies 6	full coverage of unit including practice test. Word development activity. Homework
		2nd	Unit 9 word test. Unit 10-Purchasing	word test U.9. full coverage of unit 10 including practice test. Word development activity. Homework
		3rd	Unit 10 (cont.). Word test U.10	word test U.10. TOEIC strategies 6.
		4th	Unit 11 Finances	full coverage of unit including practice test. Word development activity. Homework
		5th	Unit 11 (cont.). Word test Unit 11.	Word test Unit 11. Unit 11 (cont.)
		6th	Unit 12 Media	full coverage of unit including practice test. Word development activity. Homework
		7th	Unit 12 (cont.). Word test Unit 12. Units 9~12 Review	word test U.12. Units 9~12 Review
		8th	Mid term exam	Units 9~12.
	4th Quarter	9th	TOEIC strategies 7 and 8	TOEIC strategies 7 and 8.
		10th	Unit 13 Entertainment.	full coverage of unit including practice test. Word development activity. Homework
		11th	Unit 13 (cont.). Word test Unit 13.	word test U.13. Unit 13 (cont.)
		12th	Unit 14 Health	full coverage of unit including practice test. Word development activity. Homework
		13th	Unit 14 (cont.) word test Unit 14. Unit 15 Restaurants.	word test U.14. Unit 14 (cont.).full coverage of unit 15 including practice test. Word development activity.
		14th	Unit 15 (cont.) word test Unit 15	word test U.15. Unit 15 (cont.)
		15th	期末試験	Unit 13~15

		16th	TOEIC practice test (post test).	Same test conducted on the first class will be taken again and results will be compared.

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	70	0	0	0	0	30	100
基礎的能力	70	0	0	0	0	30	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

Toyama College	Year	2020	Course Title	English Practicum Ⅰ

Course Information

Course Code	0101	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	TOEIC公式問題集、『TOEICL&Rテスト出る単特急金のフレーズ』		
Instructor	Yamamura Hiroto		

Course Objectives

By the end of the course, students will be better able to understand grammar and vocabulary in TOEIC test. Also, students will be able to achieve a score of around 500 on TOEIC.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students are able to understand more than 80% in part 5 of the TOEIC test.	Students are able to understand about 60% in part 5 of the TOEIC test.	Students are not able to understand part 5 of the TOEIC test.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	This course aims to help students to achieve a score of 500 on the TOEIC test. The course is particularly designed to provide students with a solid foundation in grammar and vocabulary that are necessary to be able to understand the reading section of the TOEIC test. By practising questions in part 5, students will be better able to read English used in a business setting. Also, students will have a vocabulary test every week. They are expected to learn new expressions before coming to every class.
Style	The instructional emphasis will be on pair work as well as lectures. In the class, students are asked to explain English sentence structures in Japanese.
Notice	80% of grading will be based on exams and 20% on vocabulary tests. Students should mark more than 60 on average in order to pass the course. When they fail the course, students are eligible to retake the exam.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Introduction	Students are able to understand the goals of the course
		2nd	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		3rd	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		4th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		5th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		6th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		7th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		8th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
	2nd Quarter	9th	Midterm exam	
		10th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		11th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		12th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		13th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		14th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		15th	Final exam	
		16th	Reflection and supplementary materials	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0

Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	English Practicum Ⅱ

Course Information

Course Code	0102	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	TOEIC公式問題集、『TOEICL&Rテスト出る単特急金のフレーズ』		
Instructor	Yamamura Hiroto		

Course Objectives

By the end of the course, students will be better able to understand grammar and vocabulary in TOEIC test. Also, students will be able to achieve a score of around 500 on TOEIC.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students are able to understand more than 80% in part 5 of the TOEIC test.	Students are able to understand about 60% in part 5 of the TOEIC test.	Students are not able to understand part 5 of the TOEIC test.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	This course aims to help students to achieve a score of 500 on the TOEIC test. The course is particularly designed to provide students with a solid foundation in grammar and vocabulary that are necessary to be able to understand the reading section of the TOEIC test. By practising questions in part 5, students will be better able to read English used in a business setting. Also, students will have a vocabulary test every week. They are expected to learn new expressions before coming to every class.
Style	The instructional emphasis will be on pair work as well as lectures. In the class, students are asked to explain English sentence structures in Japanese.
Notice	80% of grading will be based on exams and 20% on vocabulary tests. Students should mark more than 60 on average in order to pass the course. When they fail the course, students are eligible to retake the exam.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Introduction	Students are able to understand the goals of the course
		2nd	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		3rd	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		4th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		5th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		6th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		7th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		8th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
	4th Quarter	9th	Midterm exam	
		10th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		11th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		12th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		13th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		14th	Part 5 of the TOEIC test together with supplementary materials	Students are able to understand grammar and vocabulary covered in a class
		15th	Final exam	
		16th	Reflection and supplementary materials	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0

Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Chinese Ⅰ

Course Information

Course Code	0103	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	白水社「中国語はじめの一歩」		
Instructor	Hoshino Akemi		

Course Objectives

(1) Aim to be able to pronounce Chinese "pinyin" such as consonants, vowels and syllables.
(2)Aims to learn and understand simple grammars.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can pronounce almost perfectly while looking at “pinyin”.	Can pronounce correctly while looking at “pinyin”.	Can’t pronounce correctly while looking at “pinyin”.
Evaluation 2	Can read the textbook while looking at “pinyin” almost perfectly.	Can read the textbook while looking at “pinyin” correctly.	Can’t read the textbook while looking at “pinyin”.
Evaluation 3			

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	(1) Goal Aim to be able to pronounce Chinese "pinyin" such as consonants, vowels and syllables. Aims to learn and understand simple grammars. (2)Overview Learn pronunciation practice, simple grammar, kanji and pinyin while introducing Chinese culture, customs so as to be interested in Chinese language.
Style	Lectures and exercises by the teacher alone.
Notice	Those who do not have a score of 60 can take the back-up examination upon request. For those who have been awarded credits as a result of the back-up examination, the score is 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Explanation of syllabus Warm up 1	(1) Description of syllabus (2)Learn tone, single vowels and consonants.
		2nd	Warm up 2	Learn complex vowels and consonants. Quiz
		3rd	Warm up 3	Learn nasal sounds and numbers. Quiz
		4th	Warm up 4	Learning complex vowels Conversation practice
		5th	Unit 1	Practice of pronunciation ・ Learning personal pronouns
		6th	Unit 1	・ Learning of grammar
		7th	Unit 1	·Check the answer of homework Quiz
		8th	Mid-term Exam	A written examination will be conducted on the lecture content from 1st week to 7th week.
	2nd Quarter	9th	Grade evaluation and confirmation	
		10th	Unit 2	・ Learning of pronoun 1
		11th	Unit 2	Learning questions
		12th	Unit 2	·Check the answer of homework Quiz
		13th	Unit 3	・ Practice of pronunciation ・ Learning verb sentences and adverbs
		14th	Unit 3	・Practice of conversation
		15th	Unit 3	・ Learning verb sentences and adverbs
		16th	End-term Exam	A written examination will be conducted on the lecture content from 10st week to 15th week.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Quiz	Total
Subtotal	80	10	0	0	0	10	100
Basic Ability	80	10	0	0	0	10	100

Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Russian Ⅰ

Course Information

Course Code	0105	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	『初級ロシア語20課』及びプリント		
Instructor	Yamamoto Yuki		

Course Objectives

At the completion of this course, students will be able to
1)Answer questions about the gender of nouns and the present tense of verbs
2)Speak using the grammar they have already learned
3)Make more than 60 percent correct answers in word tests

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Answer questions about the gender of nouns and the present tense of verbs correctly	Answer questions about the gender of nouns and the present tense of verbs	Can't answer questions about the gender of nouns and the present tense of verbs
Evaluation 2	Speak using the grammar they have already learned correctly	Speak using the grammar they have already learned	Can't speak using the grammar they have already learned
Evaluation 3	Make more than 80 percent correct answers in word tests	Make more than 60 percent correct answers in word tests	Can't make more than 60 percent correct answers in word tests

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	You will learn the introductory Russian and will be ready to proceed to the next stage.
Style	Lecture and seminar
Notice	Students who fail to pass can apply for an approval test. If the approval test is passed, the evaluation is 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation. Lesson 1. The alphabet and pronunciation	Explanation of syllabus. Explanation of grammar structure. Introduction of new words and phrases.
		2nd	Lesson 1. Who is it?	Speaking, listening, reading and writing activities.
		3rd	Lesson 2. Are you a doctor? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		4th	Lesson 2. Are you a doctor? 2)	Speaking, listening, reading and writing activities.
		5th	Lesson 3. Where is the post office? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		6th	Lesson 3. Where is the post office? 2)	Speaking, listening, reading and writing activities.
		7th	Lesson 4. Whose photo is this? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		8th	The first term midterm exam	on content from class and the textbook.
	2nd Quarter	9th	Exam paper return and explanation	Explanation of test answers to students.
		10th	Lesson 4. Whose photo is this? 2)	Speaking, listening, reading and writing activities.
		11th	Lesson 5. Where are you working? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		12th	Lesson 5. Where are you working? 2)	Speaking, listening, reading and writing activities.
		13th	Lesson 6. He speaks Russian. 1)	Explanation of grammar structure. Introduction of new words and phrases.
		14th	Lesson 6. He speaks Russian. 2)	Speaking, listening, reading and writing activities.
		15th	Final exam	on content from class and the textbook.
		16th	Exam paper return and explanation	Explanation of test answers to students.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	0	30	100
Basic Ability	70	0	0	0	0	30	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Japanese Expression

Course Information

Course Code	0106	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Kubo Yoko		

Course Objectives

This course aims to develop students' writing skills. Learn various writing manners such as a letter, an email, abusiness documents, academic papers and so on.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Express your idea effectively using appropriate words.	Express your idea using appropriate words.	Can't express your idea using appropriate words.
Achievement 2	Understand the writing formats and write sentences fluently.	Understand the writing formats and write sentences properly.	Can't understand the writing formats and write sentences properly.
Achievement 3	Undrstand the manner of honorifics and use it correctly.	Use honorifics correctly.	Can't use honorifics correctly.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	This course aims to develop students' writing skills. Learn various writing manners practically.
Style	
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Orientation	Explanation of syllabus
		2nd	words	Understand how to use words basically
		3rd	keigo	Understand how to use honorifics
		4th	email	Understand how to write an email
		5th	letter	Understand how to write an official letter
		6th	logical sentence	Understand how to write sentences logically
		7th	academic writting1	Understand how to write a report
		8th	academic writting2	Understand how to write a report
	4th Quarter	9th	survey	Understand how to use OPAC
		10th	PR1	write your appeal points effectively
		11th	PR2	write your appeal points effectively
		12th	resume	Understand how to write a resume
		13th	presentation	Understand how to give a presentation
		14th	interview	Understand how to have an interview
		15th	Review	Understand how to write business documents
		16th		

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	Historical Science Ⅰ

Course Information

Course Code	0107	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	None		
Instructor	Ichishima Akiyuki		

Course Objectives

To understand the historical formative process of the Hokuriku community. Develop research capabilities, logical thinking abilities and expressive power by creating reports using materials regarding the regional history.

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
Evaluation Item 1	Understands the overall flow of Japanese history and acquires detailed knowledge relating to important figures, systems and incidents.	Generally understands the overall flow of Japanese history and acquires basic knowledge relating to important figures, systems and incidents.	Cannot understand the overall flow of Japanese history and lacks basic knowledge relating to important figures, systems and incidents.
Evaluation Item 2	Knows the detailed content of historical events, and can accurately understand their significance and explain them logically.	Knows the overview of historical events, and can generally understand their significance and explain them in simple terms.	Has vague knowledge of historical events and cannot understand them properly.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	Goal: To develop the ability to understand various social phenomena from various angles and in-depth through various examples of history. Overview: The course is centered around the medieval history of the Hokuriku region. By building up the regional history, reflect on the "overview of history" from a central point of view.
Style	Lectures conducted by a single professor
Notice	The main questions of the regular exams can be found on the blackboard and distributed resumes. The reports (implement at least once) will be a requirement to receive credit. Students whose scores are less than 60 points may request to take a make-up exam. Students whose acquisition of units is acknowledged as a result of the make-up test will receive a score of 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Explanation of the lesson goals and syllabus, introduction of the entire course
		2nd	Introduction to Japanese Medieval History I	Decline of the Japanese nation under the ritsuryo codes and establishment of the samurai government
		3rd	Introduction to Japanese Medieval History II	Conflicts of Northern and Southern Courts and the Muromachi shogunate
		4th	Introduction to Japanese Medieval History III	Decline of the Muromachi shogunate and the Sengoku period
		5th	Introduction to Japanese Medieval History IV	Development of Buddhist sects during the Middle Ages
		6th	Medieval history of Hokuriku (Etchu) I	Political system in the Hokuriku region during the Kamakura and Muromachi period
		7th	Medieval history of Hokuriku (Etchu) II	Onin War/Coup of Meio and Hokuriku
		8th	Mid-term exam	Confirmation of lesson content from Week 1 to Week 7
	2nd Quarter	9th	Medieval history of Hokuriku (Etchu) III	The movement of the regional state formation in Hokuriku
		10th	Jodo Shinshu Buddhist rebellion and Hokuriku I	Expansion of Jodo Shinshu Honganji-ha and appearance of the Jodo Shinshu Buddhist rebellion
		11th	Jodo Shinshu Buddhist rebellion and Hokuriku II	Kaga Rebellion: Reality of "the country owned by peasants"
		12th	Jodo Shinshu Buddhist rebellion and Hokuriku III	Expansion of the Kaga Rebellion and surrounding regions
		13th	Jodo Shinshu Buddhist rebellion and Hokuriku IV	Link between the Jodo Shinshu Buddhist rebellion and the central situation (Eisho war)
		14th	Jodo Shinshu Buddhist rebellion and Hokuriku V	Battle of Kaga and Etchu during the Sengoku period
		15th	Final exam	Confirmation of course content taught after the mid-term exam
		16th	Supplementary lesson/grading evaluation/confirmation	Grading evaluation and confirmation

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	210	0	0	0	0	90	300
基礎的能力	70	0	0	0	0	30	100
専門的能力	70	0	0	0	0	30	100
分野横断的能力	70	0	0	0	0	30	100

Toyama College	Year	2020	Course Title	Chinese Ⅱ

Course Information

Course Code	0108	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	白水社「中国語はじめの一歩」		
Instructor	Hoshino Akemi		

Course Objectives

(1)Acquire the ability to read kanji while looking at “pinyin”.
(2)To be able to master beginner level grammar.
(3)Students aim to be able to do simple Chinese-Japanese translation and Japanese-Chinese translation

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can pronounce almost perfectly while looking at simple words “pinyin”.	Can pronounce correctly while looking at simple words “pinyin”.	Can’t pronounce correctly while looking at simple words “pinyin”.
Evaluation 2	Can write simple sentences almost perfectly using words while understanding the grammar.	Can write simple sentences correctly using words while understanding the grammar.	Can’t write simple sentences correctly using words without understanding the grammar.
Evaluation 3			

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	(1) Goal Enable simple greetings in Chinese. Students aim to be able to do simple Chinese-Japanese translation and Japanese-Chinese translation. (2) Overview Learn pronunciation practice, simple grammar, kanji and pinyin while introducing Chinese culture, customs so as to be interested in Chinese language.
Style	Lectures and exercises by the teacher alone.
Notice	Those who do not have a score of 60 can take the back-up examination upon request. For those who have been awarded credits as a result of the back-up examination, the score is 60 points.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Description of syllabus Unit 4	Guidance Description of syllabus Classifier learning
		2nd	Unit 4	・ Practice of pronunciation ・ Learning of grammar
		3rd	Unit 4	・ Learning of words and grammar Quiz
		4th	Unit 5	Learning of prepositions
		5th	Unit 5	・ Practice of conversation ·Check the answer of homework
		6th	Unit 6	Learning of sentences of date and time
		7th	Unit 6	Learning of grammar
		8th	Mid-term Exam	A written examination will be conducted on the lecture content from 1st week to 7th week.
	4th Quarter	9th	Grade evaluation and confirmation	
		10th	Unit 6	answer of homework Quiz
		11th	Unit 7	・ Learning repetitive questions
		12th	Unit 7	·Check the answer of homework
		13th	Unit 8	How to use auxiliary verbs ・ Practice of conversation
		14th	Unit 8	·Check the answer of homework Quiz
		15th	End-term Exam	A written examination will be conducted on the lecture content from 10st week to 14th week.
		16th	Grade evaluation and confirmation	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Quiz	Total
Subtotal	80	10	0	0	0	10	100

Basic Ability	80	10	0	0	0	10	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Russian Ⅱ

Course Information

Course Code	0110	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials	『初級ロシア語20課』及びプリント		
Instructor	Yamamoto Yuki		

Course Objectives

At the completion of this course, students will be able to
1)Answer questions about the present tense of verbs and uses of the cases of nouns
2)Speak using the grammar they have already learned
3)Make more than 60 percent correct answers in word tests

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Answer questions about the present tense of verbs and uses of the cases of nouns correctly	Answer questions about the present tense of verbs and uses of the cases of nouns	Can't answer questions about the present tense of verbs and uses of the cases of nouns
Evaluation 2	Speak using the grammar they have already learned correctly	Speak using the grammar they have already learned	Can't speak using the grammar they have already learned
Evaluation 3	Make more than 80 percent correct answers in word tests	Make more than 60 percent correct answers in word tests	Can't make more than 60 percent correct answers in word tests

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	You will learn the introductory russian and will be ready to proceed to the next stage.
Style	Lecture and seminar
Notice	Students who fail to pass can apply for an approval test. If the approval test is passed, the evaluation is 60 points.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Lesson 7. Where do you live? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		2nd	Lesson 7. Where do you live? 2)	Speaking, listening, reading and writing activities.
		3rd	Lesson 8. Hello, Anna! 1)	Explanation of grammar structure. Introduction of new words and phrases.
		4th	Lesson 8. Hello, Anna! 2)	Speaking, listening, reading and writing activities.
		5th	Lesson 9. Where are you going? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		6th	Lesson 9. Where are you going? 2)	Speaking, listening, reading and writing activities.
		7th	Lesson 10. What are you going to do? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		8th	The second term midterm exam	on content from class and the textbook.
	4th Quarter	9th	Exam paper return and explanation	Explanation of test answers to students.
		10th	Lesson 10. What are you going to do? 2)	Speaking, listening, reading and writing activities.
		11th	Lesson 11. Have you finished reading books? 1)	Explanation of grammar structure. Introduction of new words and phrases.
		12th	Lesson 11. Have you finished reading books? 2)	Speaking, listening, reading and writing activities.
		13th	Lesson 12. I was busy. 1)	Explanation of grammar structure. Introduction of new words and phrases.
		14th	Lesson 12. I was busy. 2)	Speaking, listening, reading and writing activities.
		15th	Final exam	on content from class and the textbook.
		16th	Exam paper return and explanation	Explanation of test answers to students.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	0	30	100
Basic Ability	70	0	0	0	0	30	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Advanced Mathematics Ⅰ

Course Information

Course Code	0117	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Kawai Hitoshi		

Course Objectives

・関数の極限と連続性についてより深く学ぶ.
・テイラー，マクローリンの定理の基本的な概念を理解する.
・微分積分学の基本定理を理解し，応用する.
・陰関数定理の概念を理解する.

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	基本的な極限の計算ができる．基本的な関数の連続性について調べることができる.	基本的な極限の計算ができる.	基本的な極限の計算ができない.
評価項目2	テイラー展開，マクローリン展開を用いて関数の振る舞いに関する問題を解くことができる.	基本的な関数のマクローリン展開ができる.	基本的な関数のマクローリン展開ができない.
評価項目3	平面の有界閉領域で定義される連続微分可能な関数の最大値，最小値を導くことができる.	陰関数定理を理解し，応用することができる.	陰関数定理を理解できない.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	3年まで学んだ微分積分学を更に発展させ，応用力を身につける. テイラー・マクローリンの定理について学ぶ. 微分積分学の基本定理について学ぶ. 2変数関数の陰関数定理について学ぶ.
Style	教員単独による講義と演習
Notice	・教科書について 教科書を特に指定しないが、関連図書にあげた本の内容にそって講義を進める予定である。多く演習問題がのっているので、現時点で大学編入を目指している学生は購入して勉強することを薦める。 ・講義について 演習や課題を多く出し学生の自習を促しながら授業を進める。また、課題などで学生の理解度を把握しながらレベルを調整して講義を進める予定である。 ※追認試験について 評価が６０点を満たない者は、願い出により追認試験を受けることが出来る。追認試験の結果、単位の修得が認められた者にあっては、その評価を６０点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス	この講義の目的を理解し、基礎となる事項を復習する
		2nd	いろいろな極限	さまざまな関数の極限とその計算法を学ぶ
		3rd	関数の連続性	関数の連続性、微分可能性について学ぶ
		4th	平均値の定理 テイラー・マクローリンの定理	平均値の定理、テイラー・マクローリンの定理の応用を学ぶ
		5th	テイラー・マクローリンの定理	テイラーマクローリンの定理の応用を学ぶ
		6th	ライプニッツの公式	関数の積で表される関数の高次導関数について学ぶ
		7th	ライプニッツの公式	ライプニッツの公式の応用を学ぶ
		8th	中間試験	1回～7回までの内容について中間試験を行う。
	2nd Quarter	9th	微分積分学の基本定理	微分積分学の基本定理について学ぶ
		10th	微分積分学の基本定理	微分積分学の基本定理を用いて問題を解く
		11th	2重積分の計算	2重積分の変数変換について学ぶ
		12th	２変数関数の最大、最少	領域における２変数関数の極大極小の求め方に関して学ぶ
		13th	２変数関数の最大、最少	陰関数定理，ラグランジュの未定定数法について学ぶ
		14th	２変数関数の最大、最少	２変数関数の閉領域における最大・最少について学ぶ
		15th	期末試験	9回～14回までの内容について期末試験を行う。
		16th	総合問題演習 成績評価・確認	期末試験の解説を行う

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	70	0	0	0	0	30	100
基礎的能力	50	0	0	0	0	20	70
専門的能力	20	0	0	0	0	10	30
分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Advanced Mathematics Ⅱ

Course Information

Course Code	0118	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Kawai Hitoshi		

Course Objectives

Students can describe and solve the solvability of simultaneous linear equations.
Students can state linear independence of vectors.
Students can understand the concept of subspace and can find dimensions and bases.
Students can obtain matrix eigenvalues and eigenvectors. Eigenvalues and eigenvectors can be applied to problems such as quadratic normalization.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can discuss the solvability of simultaneous equations and solve them.	Students can solve simultaneous equations.	Students can't solve simultaneous equations.
Evaluation 2	Students can understand the concept of subspace and can find dimension bases.	Students can understand the concept of subspace.	Students can't understand the concept of subspace.
Evaluation 3	Students can obtain matrix eigenvalues and eigenvectors, and can apply them to problems concerned with matirx.	Students can obtain matrix eigenvalues and eigenvectors.	Students can't obtain matrix eigenvalues and eigenvectors.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	We first teach the theory of simultaneous linear equations and use it to describe the linear independence of vectors. Next, we define a subspace of the number vector space and lecture on its dimensions and bases.Furthermore, we consider linear mapping and prove the dimension theorem. Finally, we give lectures on matrix eigenvalues, eigenvectors and their applications.
Style	Lectures and exercises by the teacher alone
Notice	Those who do not have a score of 60 can take the certification test upon request.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Simultaneous linear equations	Students can use method of elimination to slove simultaneous equations.
		2nd	Linear independence linear dependence	Students can understand the simultaneous equations and the linear independence relationship, and can verify the linear independence.
		3rd	linear space and subspace	Students understand the concept of subspace and can determine if it is a subspace.
		4th	Dimension and bases	Students can determine the dimensions and bases of a given subspace.
		5th	Linear mapping	Students can determine the dimensions and bases of a given subspace.
		6th	Image and kernel	Students can understand definitions of the image and kernel of linear mapping, and can determine the dimension and base of the image and kfernel.
		7th	Simension theorem	Students can understand definitions of the image and kernel of linear mapping, and can determine the dimension and base of the image and kfernel.
		8th	Intermediate examination	We do the test to confirm the students' level of understanding.
	4th Quarter	9th	Eigenvalue and eigenvector	Students can obtain eigenvalues and eigenvectors for 2-dim square matrix and 3-dim square matrix.
		10th	Diagonalization	Students can determine whether a given square matrix can be diagonalized.
		11th	Orthogonal matrix	Students can understand the definition of the orthogonal matrix and the nature that it satisfies.
		12th	Diagonalization by orthogonal matrix of symmetric matrix	Students can diagonalize symmetric matrices using orthogonal matrices.
		13th	Schmidt's orthogonalization method	Students can create orthonormal bases from linearly independent vectors.
		14th	Application of diagonalization	Students can normalize quadratic forms using eigenvalues.

		15th	Final exam	We do the test to confirm the students' level of understanding.
		16th	Explanation of final exam	I will explain the items that are considered to be poorly understood by students in the final exam.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	140	0	0	0	0	60	200
Basic Ability	70	0	0	0	0	30	100
Technical Ability	50	0	0	0	0	20	70
Interdisciplinary Ability	20	0	0	0	0	10	30

Toyama College	Year	2020	Course Title	Internship

Course Information

Course Code	0076	Course Category	Specialized / Elective
Class Format	Seminar	Credits	School Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	4
Textbook and/or Teaching Materials			
Instructor	Oguma Hiroshi		

Course Objectives

Students (1) are solvable using the knowledge and technology about the speciality learned so far to the theme given at the training place, (2) can have a future career image in a company etc. concretely, (3)get to know the responsibility for the work which a company, or an engineer and a researcher should have.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Able to tie up own capability and consider matching with work. based on a career image.	Able to have a future career image in a company etc..	Not able to have a future career image in a company etc..
Evaluation 2	Able to evaluate own capability objective and can heighten it.	Able to carry out self-valuation about own capability.	Not able to carry out self-valuation about own capability.
Evaluation 3	Able to give an example and cut with explanation the responsibility for the work which a company, or an engineer and a researcher should have.	Able to consider the responsibility for the work which a company, or an engineer and a researcher should have.	Not able to consider the responsibility for the work which a company, or an engineer and a researcher should have.

Assigned Department Objectives

JABEE B5

Teaching Method

Outline	Study capability required for self in order to play an active part as an engineer's business and a corporate citizen, and the social responsibility in a company through training off the campus.
Style	According to the bookmark of internship, I choose a training organization, perform training of the 5th to 10th day or more off the campus, and make a word-of-mouth announcement about presentation of a report, and a training report after the end of training.
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Investigation of an internship company	Understand and explain the internship company
		2nd	Investigation of an internship company	Understand and explain the internship company
		3rd	Prior training	Based on the training company
		4th	Prior training	Based on the training company
		5th	Prior training	Based on the training company
		6th	Prior training	Based on the training company
		7th	Prior training	Based on the training company
		8th	On-site training	Based on the training company
	2nd Quarter	9th	On-site training	Based on the training company
		10th	On-site training	Based on the training company
		11th	On-site training	Based on the training company
		12th	On-site training	Based on the training company
		13th	Report making	
		14th	Powerpoint making	
		15th	Exhibition	
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	30	0	50	20	0	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	0	30	0	50	20	0	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Creative Engineering Design I

Course Information

Course Code	0077	Course Category	Specialized / Elective
Class Format	Seminar	Credits	Academic Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	Pythonプログラミング　金城俊哉　秀和システム		
Instructor	Furuyama Shoichi		

Course Objectives

・ We can apply the knowledge of physics, mathematics and information we have learned so far to programs (c2, c3, d)
・ You will be able to devise your own ideas and develop software. (d, e, h)
・ To reach the JABEE evaluation criteria, 60 or more points are required.

Rubric

	Ideal Level	Standard Level	Unacceptale Level
Programming Technique	Student can develop some software of their ideas in Python.	Student can develop some software in Python.	Student cannot understand Python.
Artificial Inteligence (AI) technique	Student can apply some AI method for their software.	Student can use some AI technique.	Student cannot use AI technique.
Application	With respect to the original application software, the contents of the lecture were sufficiently reflected, and the presentation could be made by appropriately grasping the main points.	Student can present their own software.	It was a presentation whose main points were not summarized.

Assigned Department Objectives

MCCコア科目
JABEE C2
ディプロマポリシー 2

Teaching Method

Outline	Learning objective (aim of class) (Learning objective) C2, D2, E1, (JABEE criterion 1 (1)) c2, c3, d, e, h We will develop software using artificial intelligence as the subject of lectures. Application that comprehensively uses basic technology including network technology
Style	・ You will be able to apply the knowledge of physics, mathematics, and information you have learned so far to a program, develop your own ideas, and develop software. (d, e, h) ・ To reach the JABEE evaluation criteria, 60 or more points are required.
Notice	<< Confirmation test >> Those who do not have a final rating of 60 can receive an accreditation evaluation by request. Evaluation method and evaluation criteria shall be the same as described in “Evaluation method”. For those who have been awarded credits as a result of accreditation evaluation, the evaluation will be 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	guidance	Explain the objective
		2nd	Construct the environment	Construct the environment for Python programming
		3rd	Basics of Python programming	Data type, Object variables
		4th	Basics of Python programming	calculation method
		5th	Basics of Python programming	Conditional Branch, Iteration, Function
		6th	Basics of Python programming	Conditional Branch, Iteration, Function
		7th	AI programming	Basic AI programming
		8th	midterm exam	Provide ideas about software using artificial intelligence. Also ask how to develop it, specifications, issues, prospects etc.
	2nd Quarter	9th	AI programming	Emotion Creation
		10th	AI programming	Emotion Creation
		11th	Machine Learning	Morphological analysis
		12th	Markov Chain	Markov dictionary
		13th	Internet Access	Internet connection with external device
		14th	Internet Access	Data collection from internet
		15th	Presentation, grade evaluation, confirmation	Presentation, demonstration
		16th	Presentation, grade evaluation, confirmation	Submit a report on the following matters. ・ Specification of created program, source code, execution form (as it is usable form), manual, presentation file

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	30	10	60	0	0	0	100

Basic ability	30	10	60	0	0	0	100
Specific ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Creative Engineering Design Ⅱ

Course Information

Course Code	0078	Course Category	Specialized / Elective
Class Format	Seminar	Credits	Academic Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	わかるVerilog-HDL 入門（CQ出版社）		
Instructor	Oguma Hiroshi		

Course Objectives

グローバル社会において, 多国間でプロジェクトを進めていく昨今，個々のエレクトロニクスエンジニアとして必須となる
1. 創造性,
2.期限内にまとめる能力,
3. 他者に伝える能力
を身につける.

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
エンジニアリングデザイン能力	構造化記述を理解して複雑なシステムを設計したり他のCPUボードと連携させてシステムを実現できる.課題がある場合には解決策を提案できる	与えられたボードにより創造的なシステムを実現できる.課題がある場合には解決策を提案できる	与えられたボードにより創造的なシステムを実現できない.課題がある場合には解決策を提案できない
スケジューリング能力	設定された期限にあわせて要求事項を実現できるとともに，問題点や拡張性を理解している	設定された期限にあわせて要求事項を実現できる.あるいは期限までに実現できた箇所を正確に表現できる	設定された期限にあわせて要求事項を実現できない. あわせて，できた範囲と出来なかった範囲を表現できない
プレゼンテーション能力	設計システムについて動画・実機動作など様々な表現法を使用して発表できる	設計システムについて論理的に発表できる	設計システムについて発表できない

Assigned Department Objectives

JABEE C2
ディプロマポリシー 2

Teaching Method

Outline	前半はFPGA設計に必須なHDL及び組み合わせ回路・順序回路・構造化設計を習得する. 中間発表時にシステム構想発表を行う.後半にシステム実装を行う. 第14週及び第15週目に成果発表会を行う.設計レポート，ソースファイル，プレゼンテーションにより評価する. この科目は試験研究機関でFPGAを活用したシステム設計を行っていた教員が、その経験を活かし、創造的なシステム開発を通して、エンジニアリングデザイン能力、スケジューリング能力、プレゼンテーション能力を養成する内容を講義・実習形式で授業を行うものである。
Style	書き換えることができるシステムデジタル素子であるFPGAが搭載されたボードを使い, 実習中心の授業を進める.
Notice	成果物は以下の4種類とする. (1)創造工学設計の開発報告書，(2)ソースコード，(3)開発成果の動画・画像，(4)中間及び成果発表会のプレゼン資料. 成果物を期限まで提出すること． 発表しなかった学生，成果物の未提出学生については単位を認めない. プレゼンテーション（中間発表、成果発表）、完成度・難易度、学生間の評価等から総合的に評価する. 特にチャレンジした取り組みが高い評価とする. 家庭学習の際に自らが調査し考えたこと，設計・実装したこと，本人として失敗したと考えたこと，構想時と設計実装時との仕様変更などはレポートに記述するとともに発表会の際に述べること. <追認試験> 評価が60点に満たない者に対して，願い出しかつ十分な学習が認められる場合追認試験を行う．追認試験の評価方法・評価基準はレポート,プレゼンテーション, 口頭試問により実施する。ただし認定をもって60点と評価する. <授業改善策> 実習中心の授業とし, 自ら選んだ課題に取り組みながら技能の向上を図る. 授業計画は，学生の進捗に応じて変更する場合がある。

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	FPGAツールの操作法	設計ツールの使用法を習得する.
		2nd	組み合わせ回路	組み合わせ回路設計に必須な記述法を習得する.
		3rd	順序回路	順序回路設計に必須な記述法を習得する.
		4th	構造化記述	構造化記述に必須な記述法を習得する.
		5th	システム構想検討のための調査（1）	FPGAボードのI/Oを調べ，ボード単体で実現できることを理解する.
		6th	システム構想検討のための調査（2）	制約条件・創造性・スケジューリングについて理解する.
		7th	システム構想検討のための調査（3）	システムを実現するための必要物品について理解する.
		8th	中間発表会（1）	ショートプレプレゼンテーション及び質疑応答を通して構想の利点・問題点を把握する
	4th Quarter	9th	中間発表会（2）	設計するシステムについて,自分及び他者のショートプレプレゼンテーション及び質疑応答を通して構想の利点・問題点を把握する
		10th	システム開発（1）	所定のFPGAボード上にシステムを実装を通して設計能力を養う.
		11th	システム開発（2）	所定のFPGAボード上にシステムを実装を通して設計能力を養う.

		12th	システム開発（３）	所定のFPGAボード上にシステムを実装を通して設計能力を養う.
		13th	システム開発（４）	所定のFPGAボード上にシステムを実装を通して創造的なシステムを実現する.
		14th	システム開発（５）	計画的にPJを進める能力を養う.
		15th	成果発表会（１）	自己・他己の発表を通して,創造性の追求とスケジューリング及び制約条件について理解する.
		16th	成果発表会（２）	自己・他己の発表を通して,創造性の追求とスケジューリング及び制約条件について理解する.

Evaluation Method and Weight (%)

	デザイン能力	発表	相互評価	態度	ポートフォリオ	その他	Total
Subtotal	60	10	5	10	15	0	100
基礎的能力	0	0	0	0	0	0	0
専門的能力	40	0	0	0	15	0	55
分野横断的能力	20	10	5	10	0	0	45

Toyama College	Year	2020	Course Title	Experiments on Electronic and Computer Engineering Ⅲ

Course Information

Course Code	0079	Course Category	Specialized / Compulsory
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Hayase Yoshikazu,Akiguchi Shunsuke,Oguma Hiroshi,Mizumoto Iwao,Aso Tsukasa,Yoshii Yotsumi,Furuyama Shoichi		

Course Objectives

Utilizing the knowledge studied by the up to now lesson, students can perform design and implementation of the given hardware software.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Hardware	Able to design and implement various circuitries.	Able to design and implement fundamental circuitries.	Not able to design and implement about various circuitries.
Software	Able to fully understand algorithm and program to each theme.	Able to program to each theme.	Not able to program to each theme.
Each laboratory activity	Able to fully explain to the theme given at each laboratory	Able to explain to the theme given at each laboratory	Not able to explain to the theme given at each laboratory

Assigned Department Objectives

MCCコア科目
JABEE B5
ディプロマポリシー 3

Teaching Method

Outline	Students heighten software hardware network-related practical skills, and develop independent problem-solving skills.
Style	Students carry out seven themes, spending a period of about four weeks for each theme.
Notice	○Students must submit the report within the set term for all the themes.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Operational amplifier (1)	Amplifier circuit
		2nd	Operational amplifier (2)	Arithmetic circuit
		3rd	Operational amplifier (3)	Analog filter
		4th	FPGA design (1)	Combinatorial circuit design by Verilog-HDL
		5th	FPGA design(2)	Sequential circuit design by Verilog-HDL
		6th	FPGA design(3)	Structured description design by Verilog-HDL
		7th	FPGA design(4)	Comprehensive exercise
		8th	Linux management operation training (1)	Basic command
	2nd Quarter	9th	Linux management operation training (2)	Hardware extension
		10th	Linux management operation training (3)	Management of a system, a user, and a group
		11th	Electronic circuit (1)	Oscillating circuit
		12th	Electronic circuit (2)	Low-frequency amplifier
		13th	Radio communications system (1)	Analog modulation circuit
		14th	Radio communications system (2)	ＡＭ transmittion / receiver circuit
		15th	Experiment report	Experiment report
		16th		
2nd Semester	3rd Quarter	1st	Control system（1）	Control programming on Lego mindstorm
		2nd	Control system（2）	Control programming on Lego mindstorm
		3rd	Control system（3）	Presentation
		4th	Numerical calculation （1）	Newton's method
		5th	Numerical calculation （2）	Gaussian elimination
		6th	Network construction (1)	network cable and interconnect equipment
		7th	Network construction (2)	Network settings
		8th	Natural-power-sources education （1）	Solar cell
	4th Quarter	9th	Natural-power-sources education （2）	Electrical power system
		10th	Pre-graduation research （1）	Each laboratory
		11th	Pre-graduation research（2）	Each laboratory
		12th	Pre-graduation research（3）	Each laboratory
		13th	Pre-graduation research（4）	Each laboratory

		14th	Pre-graduation research（5）	Each laboratory
		15th	Pre-graduation research report	
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	60	0	40	0	0	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	0	60	0	40	0	0	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electromagnetism Ⅰ

Course Information

Course Code	0080	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Shina Toru		

Course Objectives

At the completion of this course, students will be able to

(1) Explain the basic terms of static elecric field
(2) Calculate the Coulomb force and electric field and potential by charges
(3) Explain the electrostatic properties of dielectrics and conductors
(4) Calculate the capacitance and electrostatic energy

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain the basic terms of static elecric field alomost perfectly.	Can explain the basic terms of static elecric field correctly.	Can't explain the basic terms of static elecric field.
Evaluation 2	Can calculate the Coulomb force and electric field and potential by charges alomost perfectly.	Can calculate the Coulomb force and electric field and potential by charges correctly.	Can't calculate the Coulomb force and electric field and potential by charges.
Evaluation 3	Can explain the electrostatic properties of dielectrics and conductors almost perfectly.	Can explain the electrostatic properties of dielectrics and conductors correctly.	Can't explain the electrostatic properties of dielectrics and conductors.
Evaluation 4	Can calculate the capacitance and electrostatic energy almost perfectly.	Can calculate the capacitance and electrostatic energy correctly.	Can't calculate the capacitance and electrostatic energy.

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	In this course, you will learn about the principles, properties and fundamental physics of electric field.
Style	For the purpose of understanding the electric field, lectures and exercises faciliate the learning of principles and examples.
Notice	The recognition of credit requires 60 points or more rating. Based on the knowledge of basic electric field.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	To explain the outline.
		2nd	Charge and Coulomb law	To explain charge and Coulomb's law.
		3rd	Electric field and electric lines of force	To explain electric field and electric lines of force.
		4th	Gauss's law	To explain Gauss's law.
		5th	Potential difference and potential	To explain potential difference and potential.
		6th	Property of the electrostatic field	To explain property of the electrostatic field.
		7th	Distributed charges and charge density	To explain distributed charges and charge density.
		8th	Mid-term exam	Mid-term exam
	2nd Quarter	9th	Property of a conductor in a static electric field	To explain property of a conductor in a static electric field.
		10th	Capacitor and capacitance	To explain capacitor and capacitance.
		11th	Conductor and dielectric Part 1	To explain conductor and dielectric.
		12th	Conductor and dielectric Part 2	To explain conductor and dielectric.
		13th	Comprehensive exercise Part 1	Comprehensive exercise
		14th	Comprehensive exercise Part 2	Comprehensive exercise
		15th	Final exam	Final exam
		16th	Return and explanation of answer sheets, evaluation and confirmation of results	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total

Subtotal	60	0	0	0	0	40	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	60	0	0	0	0	40	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electromagnetism Ⅱ

Course Information

Course Code	0081	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Shina Toru		

Course Objectives

At the completion of this course, students will be able to

(1) Explain the basic terms of the current field
(2) Expalin the basic terms of static magnetic field
(3) Explain the magnetic properties of the magnetic material
(4) Calculate the magnetic fields and electromagnetic induction

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain the basic terms of the current field almost perfectly.	Can explain the basic terms of the current field correctly.	Can't explain the basic terms of the current field.
Evaluation 2	Can expalin the basic terms of static magnetic field alomost perfectly.	Can expalin the basic terms of static magnetic field correctly.	Can't expalin the basic terms of static magnetic field.
Evaluation 3	Can explain the magnetic properties of the magnetic material alomost perfectly.	Can explain the magnetic properties of the magnetic material correctly.	Can't explain the magnetic properties of the magnetic material.
Evaluation 4	Can calculate the magnetic fields and electromagnetic induction almost perfectly.	Can calculate the magnetic fields and electromagnetic induction correctly.	Can't calculate the magnetic fields and electromagnetic induction.

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	In this course, you will learn about the principles, properties and fundamental physics of magnetic field.
Style	For the purpose of understanding the magneticc field, lectures and exercises faciliate the learning of principles and examples.
Notice	The recognition of credit requires 60 points or more rating. Based on the knowledge of basic magnetic field.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Electrostatic energy	To explain electrostatic energy
		2nd	Current and current density	To explain current and current density
		3rd	Resistance and Ohm's law Continuity of current	To explain resistance and Ohm's law and continuity of current
		4th	Magnetic field and force, Biovar's law	To explain magnetic field and force, Biovar's law
		5th	Ampere's contour integral	To explain Ampere's contour integral
		6th	Magnetic field calculation and Gauss's law	To explain magnetic field calculation and Gauss's law
		7th	Force and torque by a current	To explain force and torque by a current
		8th	Mid-term exam	Mid-term exam
	4th Quarter	9th	Magnetic material	To explain magnetic material
		10th	Magnetic field	To explain magnetic field
		11th	Magnetic field of magnetic pole	To explain magnetic field of magnetic pole
		12th	Boundary conditions of flux density and magnetic field Magnetic circuit	To explain boundary conditions of flux density and magnetic field Magnetic circuit
		13th	Law of electromagnetic induction	To explain law of electromagnetic induction
		14th	Electromotive force of a moving conductor in a magnetic field	To explain electromotive force of a moving conductor in a magnetic field
		15th	Final exam	Final exam
		16th	Return and explanation of answer sheets, evaluation and confirmation of results	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total

Subtotal	60	0	0	0	0	40	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	60	0	0	0	0	40	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electric Circuit Ⅲ

Course Information

Course Code	0082	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	電気回路を理解する[第2版]　小澤孝夫著　森北出版		
Instructor	Tsukada Akira		

Course Objectives

After learning this course the students should be able to:
1. Make node-voltage equations and mesh-current equations.
2. Calculate the variables of mutual inductance circuits.
3. Calculate ABCD-parameters of AC circuits.
4. Calculate the time behavior of simple circuits.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Be able to make node-voltage equations and mesh-current equations from complex circuits.	Be able to make node-voltage equations and mesh-current equations.	Be not able to make node-voltage equations and mesh-current equations.
Evaluation 2	Be able to calculate the variables of mutual inductance circuits and ideal transformer.	Be able to calculate the variables of mutual inductance circuits.	Be not able to calculate the variables of mutual inductance circuits.
Evaluation 3	Be able to calculate ABCD-parameters of cascaded network.	Be able to calculate ABCD-parameters of AC circuits.	Be not able to calculate ABCD-parameters of AC circuits.
Evaluation 4	Be able to calculate the time behavior of various circuits.	Be able to calculate the time behavior of simple circuits.	Be not able to calculate the time behavior of simple circuits.

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	In modern society, various electrical and electronic circuits enrich our lives. The purpose of this course is to acquire a basic analysis method to understand the mechanism of the electric circuit and the electronic circuit which is used in these. This subject focuses on nodal and mesh analysis, mutual inductance, two-port network and transient analysis.
Style	Lectures led by teacher
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Nodal analysis	Be able to describe the nodal analysis.
		2nd	Node-voltage equations	Be able to make node-voltage equations.
		3rd	Mesh analysis	Be able to make mesh-current equations.
		4th	Mutual inductance	Be able to calculate the variables of mutual inductance circuits.
		5th	Ideal transformer	Be able to describe the ideal transformer.
		6th	ABCD-parameters	Be able to calculate ABCD-parameters of AC circuits.
		7th	ABCD-parameters	Be able to calculate ABCD-parameters of cascaded network.
		8th	Midterm exam	Midterm exam
	2nd Quarter	9th	Differential equations	Be able to solve first and secnd order differential equations.
		10th	Transient responses for RL circuits	Be able to calculate the time behavior of first order circuits containing resistors and inductor.
		11th	Transient responses for RC circuits	Be able to calculate the time behavior of first order circuits containing resistors and capacitor.
		12th	Transient responses for RLC circuits	Be able to calculate the time behavior of second order circuits.
		13th	Transient responses practice (1)	Be able to calculate the time behavior of first order circuit excited by sinusoidal voltage.
		14th	Transient responses practice (2)	Be able to calculate the time behavior of various circuits.
		15th	Final exam	Final exam
		16th	Summary	Summarize the study content and confirm grades

Evaluation Method and Weight (%)

	試験	課題・小テスト	相互評価	態度	ポートフォリオ	その他	Total

Subtotal	80	20	0	0	0	0	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	80	20	0	0	0	0	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Semiconductor Devices

Course Information

Course Code	0083	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yoshii Yotsumi		

Course Objectives

At the completion of this course, students will be able to
1) Qualitatively explain the carrier transport of semiconductors
2) Qualitatively explain the difference between semiconductors, metals, and insulators, in terms of energy band diagrams
3) Qualitatively explain the flow and behavior characteristics of carriers in semiconductor heterojunctions

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can quantitatively explain the carrier transport of semiconductors	Students can qualitatively explain the carrier transport of semiconductors correctly	Students can't qualitatively explain the carrier transport of semiconductors
Evaluation 2	Students can quantitatively explain the difference between semiconductors, metals, and insulators, in terms of energy band diagrams	Students can qualitatively explain the difference between semiconductors, metals, and insulators, in terms of energy band diagrams correctly	Students can't qualitatively explain the difference between semiconductors, metals, and insulators, in terms of energy band diagrams
Evaluation 3	Students can quantitatively explain the flow and behavior characteristics of carriers in semiconductor heterojunctions	Students can qualitatively explain the flow and behavior characteristics of carriers in semiconductor heterojunctions correctly	Students can't qualitatively explain the flow and behavior characteristics of carriers in semiconductor heterojunctions

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	Learning Objectives (Aim of Class) Almost all electrical appliances today use semiconductor devices. In this lesson, we will learn about the basics of understanding semiconductor devices.
Style	Lectures by teachers alone are conducted.
Notice	The portfolio is evaluated as 20%, and the test is evaluated as 80%. The evaluation of the test is the average of the evaluation of the interim and the end of the study. A person who has a rating of less than 60 points may be subjected to an approval test by a request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance Electrons in the electromagnetic field	Can explain the nature of electrons and their motion in the field of electromagnetism.
		2nd	Electrons in the electromagnetic field	Can explain the photoelectric effect, the matter wave, and the application of electrons in vacuum.
		3rd	Electrons in the atom	Can explain their nature and electronic configuration for electrons in atoms.
		4th	Electron in a solid	Can explain Schrodinger's equation and the Sommerfeld model.
		5th	Solid energy band	Can explain energy bands, electrons, and holes.
		6th	Solid energy band Carrier density and electrical conductivity	Can explain about semiconductor careers, carrier density and electrical conductivity.
		7th	Carrier density and electrical conductivity	Can explain the electron (hole) density and Fermi level.
		8th	Midterm exam	Can explain the nature of electrons and holes, and can perform related calculations.
	4th Quarter	9th	Effective mass and mobility	Can account for effective mass and carrier mobility.
		10th	Diffusion current and continuity equation	Can explain the diffusion current and the equation of a continuum of minority carriers.
		11th	Pn junction (1)	Can explain the diffusion potential and the characteristics of the pn junction diode.
		12th	Pn junction (2)	Can explain the depletion layer and capacitance of a pn junction diode.
		13th	Bipolar transistor	Can explain the structure and principle of bipolar transistors.
		14th	Metal-semiconductor junction	Can explain Schottky junctions and ohmic junctions.
		15th	Final exam	Can explain the operation of the semiconductor device and perform related calculations.

		16th	Return of answer sheets, explanation, class questionnaire, etc.	Evaluation and confirmation

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	80	0	0	0	20	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electronic Systems Ⅰ

Course Information

Course Code	0084	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yamaguchi Akifumi		

Course Objectives

At the completion of this course, students will be able to
1. Understand how to run the program of the microcontroller.
2. Understand how to create a program for the microcontroller.
3. Understand how to control the external electronic circuit by using the microcontroller.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can understand how to run the program of the microcontroller almost perfectly.	Can understand how to run the program of the microcontroller correctly.	Can't understand how to run the program of the microcontroller correctly.
Evaluation 2	Can understand how to create a program for a microcontroller almost perfectly.	Can understand how to create a program for a microcontroller correctly.	Can't understand how to create a program for a microcontroller correctly.
Evaluation 3	Can understand how to control the external electronic circuit by using a microcontroller almost perfectly.	Can understand how to control the external electronic circuit by using a microcontroller correctly.	Can't understand how to control the external electronic circuit by using a microcontroller correctly.

Assigned Department Objectives

JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	Students can create a circuit using a microcontroller and create a program for microcontroller.
Style	Students creates the microcontroller circuit and creates a program for a theme given by a teacher.
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	How to use the microcomputer	Understand how to use the microcontroller.
		2nd	Programming Technique 1	Understand how to create a microcontroller program and how to write the source code to the microcontroller ic chip.
		3rd	Programming Technique 2	Understand the input / output settings of the port of the microcontroller.
		4th	Programming Technique 3	Understand the simple external electronic circuits using the input / output of the microcontroller's ports.
		5th	Numerical counter	Understand the clock cycle and control the software loop timer.
		6th	LED flashing circuit 1	Understand the LED flashing circuit with a software loop timer.
		7th	LED flashing circuit 2	Understand the LED flashing circuit with a software loop timer.
		8th	Electric music box circuit	Understand how to create the Electric music box circuit using a microcontroller and an electronic buzzer.
	2nd Quarter	9th	Electric music box circuit 2	Understand how to create the Electric music box circuit using a microcontroller and an electronic buzzer.
		10th	Interrupt Control 1	Understand the interrupt control of the microcontroller.
		11th	Interrupt Control 2	Understand the interrupt control of the microcontroller.
		12th	Interrupt Control 3	Understand the interrupt control of the microcontroller.
		13th	Digital clocks 1	Understand the interrupt control of the built-in timer module of the microcontroller.
		14th	Digital clocks 2	Understand the interrupt control of the built-in timer module of the microcontroller.
		15th	Digital clocks 3	Understand the interrupt control of the built-in timer module of the microcontroller.
		16th		

Evaluation Method and Weight (%)

	Report	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electronic Systems Ⅱ

Course Information

Course Code	0085	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Yamaguchi Akifumi		

Course Objectives

At the completion of this course, students will be able to
1. Understand how to run the program of the microcontroller.
2. Understand how to create a program for the microcontroller.
3. Understand how to control the external electronic circuit by using the microcontroller.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can understand how to run the program of the microcontroller almost perfectly.	Can understand how to run the program of the microcontroller correctly.	Can't understand how to run the program of the microcontroller correctly.
Evaluation 2	Can understand how to create a program for a microcontroller almost perfectly.	Can understand how to create a program for a microcontroller correctly.	Can't understand how to create a program for a microcontroller correctly.
Evaluation 3	Can understand how to control the external electronic circuit by using a microcontroller almost perfectly.	Can understand how to control the external electronic circuit by using a microcontroller correctly.	Can't understand how to control the external electronic circuit by using a microcontroller correctly.

Assigned Department Objectives

MCCコア科目
JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	Students can create a circuit using a microcontroller and create a program for microcontroller.
Style	Students creates the microcontroller circuit and creates a program for a theme given by a teacher.
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	A / D converters 1	Understand the programs that control A / D converters that are embedded in the microcontroller.
		2nd	A / D converters 2	Understand the voltmeter program by using a built-in A / D converter in the microcontroller.
		3rd	Communications program 1	Understand how to create the communications program between the microcontroller and the PC
		4th	Communications program 2	Understand how to create the communications program between the microcontroller and the PC
		5th	Communications program 3	Understand how to create the communications program between the microcontroller and the PC
		6th	Communications program 4	Understand how to create the communications program between the microcontroller and the PC
		7th	Communications program 5	Understand how to create the communications program between the microcontroller and the PC
		8th	Communications program 6	Understand the communication program between the microcontroller and the PC.
	4th Quarter	9th	Communications program 7	Understand the communication program between the microcontroller and the PC using C# language.
		10th	Communications program 8	Understand the communication program between the microcontroller and the PC using C# language.
		11th	Communications program 9	Understand the communication program between the microcontroller and the PC using C# language.
		12th	Communications program 10	Understand the communication program between the microcontroller and the PC using Processing.
		13th	Communications program 11	Understand the communication program between the microcontroller and the PC using Processing.
		14th	Communications program 12	Understand the communication program between the microcontroller and the PC using Processing.
		15th	Communications program 13	Understand the communication program between the microcontroller and the PC using Processing.
		16th		

Evaluation Method and Weight (%)							
	Report	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electrical Communication Engineering Ⅰ

Course Information

Course Code	0086	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Mizumoto Iwao		

Course Objectives

We can study oscillation circuit, modulation circuit, demodulation circuit for electronic commnication.
We can understand the communication method using the Fourier transform

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	enough understanding of electric communication engineering	comentary of electric communication engineering	no commento of electric commnication engineering
Evaluation 2	enough understanding os oscillatin, modulation, dumodulation circuits	comentary of oscilattion, modulation, demodulation circuits	no comment of oscillation, modulation, demodulation circuits
Evaluation 3	enough understand the communication method using the Fourier transform	commentary of the communication method using the Fourier transform	no comment of the communication method using the Fourier transform

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	We can study oscillation circuit, modulation circuit, demodulation circuit for electronic commnication. We can understand the communication method using the Fourier transform
Style	The lectures with exercises
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Communication Engineering Literacy	Understand radio transmission and modulation
		2nd	simulation of AM and FM modulation	understand of AM and FM modulation
		3rd	Configuration of communication system	Understanding of the Configuration of communication system
		4th	AM Moduration	understanding of AM Moduration
		5th	FM Moduration	Understanding of FM Moduration
		6th	Configuration of communication system	Understanding of communication system
		7th	Principle of carrier oscillation circuit	Understanding of carrier oscillation circuits
		8th	Intermediate test	Intermediate test
	2nd Quarter	9th	Fundamentals of Fourier transform	Understanding of Fourier transform
		10th	The nature of the Fourier transform	Understanding nature of the Fourier transform
		11th	Fourier transform of special function	Understanding Fourier transform of special function
		12th	Modulation and Fourier Transform	Understanding of Modulation and Fourier Transform
		13th	De-Moduration and Fourier Transform	Understanding of and Fourier Transform
		14th	Bandwidth and modulation scheme	Understanding of Bandwidth and modulation scheme
		15th	Final exam	Final exam
		16th	Answer and commentary	Answer and commentary

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	200	0	0	0	0	0	200
Basic Ability	100	0	0	0	0	0	100
Technical Ability	50	0	0	0	0	0	50
Interdisciplinary Ability	50	0	0	0	0	0	50

Toyama College	Year	2020	Course Title	Electrical Communication Engineering Ⅱ

Course Information

Course Code	0087	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Mizumoto Iwao		

Course Objectives

Explain communication theory by using Fourier transform

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Fourier series expansion can be calculated.Evaluation 1	Fourier series expansion can be calculated. It can be applied to a filter circuit.	understanding of Fourier series expansion	non calicurating of Fourier series expansion
You can calculate the Fourier transform.	You can calculate the convolution integral. It can be applied to a filter circuit.	understanding of Fourier transform.	non calicurating of Fourier transform.
Applicable to system functions	It can be applied to system functions.	understanding of application system	not explain about application system

Assigned Department Objectives

JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	Explain communication theory by using Fourier transform
Style	Do lectures and exercises adequately.
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Foundation of Fourier series expansion	understanding of Foundation of Fourier series expansion
		2nd	calculating coefficients of Fourier series expansion	understand of calculating coefficients of Fourier series expansion
		3rd	Exercise of Fourier series expansion	Exercise of Fourier series expansion
		4th	Foundation of complex Fourier series expansion	understanding of Foundation of complex Fourier series expansion
		5th	Exercise of complex Fourier series expansion	Exercise of complex Fourier series expansion
		6th	Application of complex Fourier series expansion	understanding of application of complex Fourier series expansion
		7th	Intermediate test	Intermediate test
		8th	Convolution integral	understanding of Convolution integral
	4th Quarter	9th	Convolution integral and Fourier transform 1	Understanding convolution integral
		10th	Convolution integral and Fourier transform 2	Understanding convolution integral
		11th	Convolution integral and Fourier transform 3	Understanding convolution integral
		12th	Application to linear system	Application to linear system
		13th	Application to linear system	Application to linear system
		14th	Application to communication theory	Application to communication theory
		15th	final exsam	final exsam
		16th	Answers and summary	Answers and summary

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	200	0	0	0	0	0	200
Basic Ability	100	0	0	0	0	0	100
Technical Ability	50	0	0	0	0	0	50
Interdisciplinary Ability	50	0	0	0	0	0	50

Toyama College	Year	2020	Course Title	Control Engineering　I

Course Information

Course Code	0088	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	自動制御理論（樋口龍雄，森北出版社）		
Instructor	Oguma Hiroshi		

Course Objectives

自動制御理論は電気電子機器や機械をある目的に沿って動作させるのに必要な理論である．本授業では自動制御理論の最も基礎となる古典制御理論を学習することにより，システムの挙動を理解するとともに電気回路との関連性を理解することを目標としている．
1. 古典制御理論を解析するための数学であるラプラス変換・ラプラス逆変換を使いこなすことができる．
2. 与えられたブロック線図から伝達関数を導出することができる．
3. 基本的な電気回路とブロック線図との関係性を理解しシステムの挙動を導出することができる．

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	ラプラス変換及びラプラス逆変換を自在に計算することができる．	デルタ関数・ユニット関数・三角関数・指数関数などのラプラス変換及びラプラス逆変換を演算することができる．	ユニット関数・三角関数などの基礎的な関数のラプラス変換及びラプラス逆変換を計算することができない．
評価項目2	3種類以上のブロックから構成されるフィードバック及びフィードフォワードから構成されるブロック図を簡単化し,伝達関数を導出することができる．	フィードバック及びフィードフォワードのブロック図を簡単化し,伝達関数を導出することができる．	フィードバックのブロック図を簡単化し,伝達関数を導出することができない．
評価項目3	電気回路からブロック線図・伝達関数を導出し,ステップ応答を導出することができる	電気回路からブロック線図・伝達関数を導出することができる．	電気回路から伝達関数を導出することができない．

Assigned Department Objectives

JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	シラバスに記載されている授業内容を理解し，説明や計算ができる． この科目は企業等で無線通信分野等のシステム開発を行っていた教員が，その経験を活かし制御工学の内容を講義形式で授業を行うものである．
Style	座学に演習を加えながら，定着化を図る． 学生による「授業評価アンケート」の結果に対応して授業改善を進める．
Notice	＜追認試験について＞ 評価が60点に満たない者に対して，願い出しかつ十分な学習が認められる場合追認試験を行う．内容は中間・期末で60点に満たなかった範囲．その結果，単位の修得が認められた場合，総合の評価を60点とする．評価方法及び評価基準は本試験と同じにする．

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス,システムと制御	制御システムの性質が理解できる
		2nd	基礎数学	インパルス応答，畳み込み積分を理解できる
		3rd	基礎数学	ラプラス変換の定義を理解し導出できる
		4th	基礎数学	逆ラプラス変換の定義を理解し導出できる
		5th	基礎数学	部分分数展開を用いて逆ラプラス変換できる
		6th	伝達関数	時間応答と周波数応答を理解できる
		7th	伝達関数	伝達関数を導出できる
		8th	中間試験	1－7回の授業内容について試験を行う
	2nd Quarter	9th	システムと制御	フィードバックシステムのブロック線図を理解できる
		10th	システムと制御	ブロック線図の簡単化を図ることができる
		11th	過渡応答	RC直列回路,RL直列回路などの電気回路の過渡応答を導出できる
		12th	過渡応答	RCL回路, LC回路などの電気回路の過渡応答を導出できる
		13th	電気回路とブロック線図	電気回路から各要素のブロック図ならびにブロック線図を描き，伝達関数を導出できる
		14th	電気回路・ブロック線図・伝達関数・ステップ応答	電気回路より導出したブロック線図のステップ応答を求めることができる
		15th	期末試験	1~14週までの内容について試験により評価を行う
		16th	成績評価・確認	成績評価・確認を実施する

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	20	0	0	0	0	0	20
専門的能力	80	0	0	0	0	0	80

分野横断的能力	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Control Engineering Ⅱ

Course Information

Course Code	0089	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Oguma Hiroshi		

Course Objectives

Electronics and Compter Engineering students are provided with fundamentals in classical control theory. While understanding the action of a system, I aim at understanding relevance with an electric circuit. 1. Fequency response is utilizable. 2. Nyquist's discrimination-of-stability method is utilizable. 3. The method of distinguishing a Lowth and Hurwitz's method of distinguishing are utilizable.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Frequency response	Able to deduce a transfer function, a Nyquist diagram, and a Bode diagram unrestrictedly.	Able to deduce a transfer function, a Nyquist diagram, and a Bode diagram from the electric diagram given to the differentiation circuit and the integration circuit.	Not able to deduce a transfer function, a Nyquist diagram, and a Bode diagram from the electric diagram given to the differentiation circuit and the integration circuit.
Distinction of stability: Nyquist's method	Able to master Nyquist's method of distinguishing unrestrictedly.	Able to eplane the feature of Nyquist's method of distinguishing	Not able to eplane the feature of Nyquist's method of distinguishing
Distinction of stability: Lowth-FulVitz method	Able to master the feature of the method of distinguishing Lowth-FulVitz method unrestrictedly.	Able to explane the feature of the method of distinguishing Lowth-FulVitz method.	Not able to explane the feature of the method of distinguishing Lowth-FulVitz method.

Assigned Department Objectives

JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	Electronics and Compter Engineering students understands the contents of a lesson indicated to the syllabus, and they can perform explanation and calculation.
Style	I aim at mastering of the contents of this course by lectures and drills.
Notice	<Confirmation examination> I will carry out the confirmation examination, when evaluation requests and carries out to those who are less than 60 points and sufficient study is accepted.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance and frequency response (1)	Frequency transfer function
		2nd	Frequency response (2)	Overview of Nyquist diagram and Bode diagram
		3rd	Characteristic of basic transfer function (1)	Nyquist diagram and Bode diagram of proportionality element, differentiation, and an integration element
		4th	Characteristic of basic transfer function (2)	Nyquist diagram and Bode diagram of 1st delay elements and 1st progress elements
		5th	Characteristic of basic transfer function (3)	Nyquist diagram and Bode diagram of 2nd delay elements and a useless time factor
		6th	Characteristic of basic transfer function (4)	Drills
		7th	Distinction of stability (1)	Nyquist diagram on s foctor of the 2nd or 3rd transfer function
		8th	Midterm exam.	
	4th Quarter	9th	Distinction of stability (2)	Characteristic equation and stability condition
		10th	Distinction of stability (3)	The method of distinguishing Lowth, and Hurwitz's method of distinguishing
		11th	Distinction of stability (4)	Nyquist's method of distinguishing
		12th	Distinction of stability (5)	Evaluation of stability
		13th	Stationary response (1)	Stationary error
		14th	Stationary response (1)	Stationary error under disturbance
		15th	Term-end examination	
		16th	Scholastic evaluation and check	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Ability	10	0	0	0	0	0	10

Technical Ability	90	0	0	0	0	0	90
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Communication Systems I

Course Information

Course Code	0111	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Aso Tsukasa		

Course Objectives

At the completion of this course, students will be able to:
1)Explain the netowrok communication system and the protocol.
2)Explain the TCP/IP technology used in LAN and WAN communications.
3)Explain the overview of netoworking based on TCP/IP.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain the network communication system and the protocol almost perfectly.	Can explain the network communication system and the protocol correctly.	Can't explain the network communication system and the protocol correctly.
Evaluation 2	Can explain the TCP/IP technology used in LAN and WAN communications almost perfectly.	Can explain the TCP/IP technology used in LAN and WAN communications correctly.	Can't explain the TCP/IP technology used in LAN and WAN communications correctly.
Evaluation 3	Can explain the overview of networking based on TCP/IP perfectly.	Can explain the overview of networking based on TCP/IP correctly.	Can't explain the overview of networking based on TCP/IP correctly.

Assigned Department Objectives

JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	TCP/IP is the common technology in internetworking and the understanding of it is inevitable to operate network systems. This lecture provides the basic knowlege about TCP/IP networking, which includes network topology, network devices, transmission control procedures, and protocols in terms of hardware and software.
Style	The lecture includes exercises and practice of programing, in order to check the students' understanding.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Can understand the lecture structure and the goals.
		2nd	Basis of networking (1)	Can understant the basis of networking in terms of network topology and data transfer.
		3rd	Basis of networking (2)	Can understant the basis of digital networking in terms of packet, connection/connectionl less data transfer.
		4th	Basis of networking (3)	Can understant the basis of networking in terms of protocl architecture of OSI referenced model.
		5th	Internet protocol and ethernet technology(1)	Can understant the roles of layers in OSI reference model.
		6th	Internet protocol and ethernet technology(2)	Can understand the Ethernet technology and the CSMA/CD media access method.
		7th	Network layer in TCP/IP (1)	Can understand the role and procedure of network layer.
		8th	Network layer in TCP/IP (2)	Can understand the IP version 4 addressing.
	2nd Quarter	9th	Midterm exam	Can explain the OSI reference model from physicsl layer to network layer.
		10th	Network layer in TCP/IP (3)	Can understand the role of network layer in terms of IP routing.
		11th	Network layer in TCP/IP (4)	Can understan the routing table in netowrk layer.
		12th	Transport and application layers in TCP/IP (1)	Can understand the role of transport layer and interface to application protocols.
		13th	Transport and application layers in TCP/IP (2)	Can understant the application protocol and its well known services.
		14th	Exercise and practice	Can explain the OSI reference model from physicsl layer to application layer.
		15th	Final exam	Can explain the OSI reference model and TCP/IP in the practical netowk system.
		16th	Comments to the final exam, class questionnaire etc.	Can understand and recover the weak points of study.

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	30	0	0	0	0	100
Basic Ability	30	20	0	0	0	0	50
Technical Ability	30	10	0	0	0	0	40
Interdisciplinary Ability	10	0	0	0	0	0	10

Toyama College	Year	2020	Course Title	Communication Systems Ⅱ

Course Information

Course Code	0112	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Aso Tsukasa		

Course Objectives

At the completion of this course, students will be able to:
1) Understand the procdure of data transfer and protocls in application program.
2) Understand the web servlet application.
3) Create the basic servlet application.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain the procedure of data transfer and protocols in application program perfectly.	Can explain the procdure of data transfer and protocols in application program correctly.	Can't explain the procdure of data transfer and protocls in application program correctly.
Evaluation 2	Can explain the web servlet application perfectly.	Can explain the web servlet application correctly.	Can't explain the web servlet application correctly.
Evaluation 3	Can create the basic servlet application almost perfectly.	Can create the basic servlet application correctly.	Can't create the basic servlet application correctly.

Assigned Department Objectives

MCCコア科目
JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	This lecture aims to understand the practical network protocols and the implementation of network applications. As a practical example application including socket, stream, multitasking, etc., the subject is focused on developing Web applications consisting of HTML, JSP and servlets.
Style	The lecture includes exercises and practice of programing, in order to check the students' understanding.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance	Can understand the lecture structure and the goals.
		2nd	Basis of networking(1)	Can understant the basis of networking in terms of network topology and data transfer.
		3rd	Basis of networking(2)	Can understant the basis of digital networking in terms of packet, connection/connectionl less data transfer.
		4th	Basis of networking(3)	Can understant the basis of networking in terms of protocl architecture of OSI referenced model.
		5th	Internet protocol and ethernet technology(1)	Can understant the roles of layers in OSI reference model.
		6th	Internet protocol and ethernet technology(2)	Can understand the Ethernet technology and the CSMA/CD media access method.
		7th	Network layer in TCP/IP (1)	Can understand the role and procedure of network layer.
		8th	Network layer in TCP/IP (2)	Can understand the IP version 4 addressing.
	4th Quarter	9th	Midterm exam	Can explain the OSI reference model from physicsl layer to network layer.
		10th	Network layer in TCP/IP (3)	Can understand the role of network layer in terms of IP routing.
		11th	Network layer in TCP/IP (4)	Can understan the routing table in netowrk layer.
		12th	Transport and application layers in TCP/IP (1)	Can understand the role of transport layer and interface to application protocols.
		13th	Transport and application layers in TCP/IP (2)	Can understant the application protocol and its well known services.
		14th	Exercise and practice	Can explain the OSI reference model from physicsl layer to application layer.
		15th	Final exam	Can explain the OSI reference model and TCP/IP in the practical netowk system.
		16th	Comments to the final exam, class questionnaire etc.	Can understand and recover the weak points of study.

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	30	0	0	0	0	100
Basic Ability	30	10	0	0	0	0	40
Technical Ability	30	20	0	0	0	0	50
Interdisciplinary Ability	10	0	0	0	0	0	10

Toyama College	Year	2020	Course Title	Operating System Ⅰ

Course Information

Course Code	0113	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Akiguchi Shunsuke		

Course Objectives

Through this course, understanding of the following will be facilitated.
(1) The roles of operating system and user interface
(2) The function of programming interface and kernel
(3) The mechanism of input / output device and file system

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Clearly understands the roles of operating system and user interface.	Understands the roles of operating system and user interface.	Lack of understanding of the roles of operating system and user interface.
Evaluation 2	Clearly understands the function of programming interface and kernel.	Understands the function of programming interface and kernel.	Lack of understanding of the function of programming interface and kernel.
Evaluation 3	Clearly understands the mechanism of input / output device and file system.	Understands the mechanism of input / output device and file system.	Lack of understanding of the mechanism of input / output device and file system.

Assigned Department Objectives

JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	To understand basic matters for key concepts of interfaces and operating principles.
Style	For the purpose of understanding the operating system, lectures and exercises facilitate the learning of principles and examples.
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Guidance: Discuss the goals and structure of this course.
		2nd	Roles of operating system -1-	Learn about the details of the Operating system.
		3rd	Roles of operating system -2-	Explain the functions managed by the operating system, usage form, and types of main operating systems.
		4th	User interface -1-	You can explain the history and type of user interface.
		5th	User interface -2-	Explain the difference between GUI and CUI.
		6th	Programing interface -1-	Explain the purpose and implementation method of the programming interface.
		7th	Programing interface -2-	You can explain the workings of the specific OS API, compatibility and portability.
		8th	Midterm exam	Midterm
	2nd Quarter	9th	Operating system configuration -1-	Explain the execution mode and interrupt mechanism.
		10th	Operating system configuration -2-	You can explain the roles of the kernel and the flow of processing.
		11th	I / O control -1-	You can explain the type of input / output device and the connection method.
		12th	I / O control -2-	You can explain the input / output request and its control and input / output efficiency method.
		13th	File management -1-	Explain file organization and operation.
		14th	File management -2-	You can explain the directory structure and file system.
		15th	Final exam	Final examination
		16th	Summary	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	30	0	100
Basic Ability	0	0	0	0	0	0	0

Technical Ability	70	0	0	0	30	0	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Operating System Ⅱ

Course Information

Course Code	0114	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Akiguchi Shunsuke		

Course Objectives

Through this course, understanding of the following will be facilitated.
(1) The roles of process scheduling and Inter-process synchronization function
(2) The overview of memory allocation algorithms and virtual memory
(3) The mechanism of network control and security system

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Clearly understands the roles of process scheduling and Inter-process synchronization function.	Understands the roles of process scheduling and Inter-process synchronization function.	Lack of understanding of the roles of process scheduling and Inter-process synchronization function.
Evaluation 2	Clearly understands the overview of memory allocation algorithms and virtual memory.	Understands the overview of memory allocation algorithms and virtual memory.	Lack of understanding of the overview of memory allocation algorithms and virtual memory.
Evaluation 3	Clearly understands the mechanism of network control and security system.	Understands the mechanism of network control and security system.	Lack of understanding of the mechanism of network control and security system.

Assigned Department Objectives

MCCコア科目
JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	To understand basic matters for key concepts of interfaces and operating principles.
Style	For the purpose of understanding the operating system, lectures and exercises facilitate the learning of principles and examples.
Notice	The recognition of credit requires 60 points or more rating.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Guidance: Discuss the goals and structure of this course.
		2nd	Process management -1-	Learn about the details of process scheduler and process scheduling algorithm.
		3rd	Process management -2-	Explain threads and multiprocessors.
		4th	Multiple process -1-	You can explain the generation and annihilation of multiple processes, multiple threads, processes.
		5th	Multiple process -2-	You can explain the synchronization function, communication, deadlock between processes.
		6th	Memory management -1-	Explain the outline of memory management.
		7th	Memory management -2-	Explain the memory allocation algorithms.
		8th	Midterm exam	Midterm
	2nd Quarter	9th	Virtual memory -1-	Explain the outline of virtual memory.
		10th	Virtual memory -2-	You can explain address translation, paging, memory scheduling.
		11th	Network control -1-	Explain the outline of the communication interface.
		12th	Network control -2-	You can explain client / server method, distributed OS.
		13th	Security and trust -1-	You can explain OS safety.
		14th	Security and trust -2-	Explain the outline of network security.
		15th	Final exam	Final examination
		16th	Summary	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	30	0	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	70	0	0	0	30	0	100

Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Numerical Computation

Course Information

Course Code	0115	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	Cによる数値計算法入門、第２版、新装版（堀之内、酒井、榎園）森北出版		
Instructor	Furuyama Shoichi		

Course Objectives

Understandings of numerical algorithm for equations and simultaneous equations(c3)
Understandings for programming technique of numerical method(d)
60 or more socore is required for JABEE certification

Rubric

	Ideal level	Standard level	Unacceptable level
Programming technique for numerical calculation	Student can solve numerical solution by reasonable method.	Student can get solution by computer programming.	Student cannot get solution by computer programming.
Theory and application of numerical calculation	Student can understand interpolation theory and achieve the code on computer in some programming language.	Student can calculate interpolation method.	Student cannot calculate interpolation method.

Assigned Department Objectives

MCCコア科目
JABEE B5
ディプロマポリシー 1

Teaching Method

Outline	Learning objective (aim of class) (Learning and educational goal) C1 (JABEE criteria (1) 1) c3, d Computer numerical calculations are used in a wide range of natural sciences, engineering, social sciences and other fields. In this subject, students learn about various algorithms necessary for numerical calculation (c3). Also, learn how to create a numerical calculation program in C language (d).
Style	Deepen your understanding by focusing on specific calculation methods. Those who do not have a score of 60 can take the certification test upon request. Evaluation criteria for the certification test conform to this test. Those who earn credits in the Persuasion Test score 60 points.
Notice	Comprehensive evaluation with average (70%) of mid-term exam and final exam, programming exercises and reports (30%).

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Solution of Equations	Bisection Method
		2nd	Roots of Equation	Newton Method
		3rd	Simultaneous Linear Equations	Matrix expression for simultaneous linear equations
		4th	Simultaneous Linear Equations	Upper triangular matrix for simultaneous linear equation
		5th	Simultaneous Linear Equations	Gauss elimination for simultaneous linear equation
		6th	Simultaneous Linear Equations	Gauss Jordan method and inverse matrix
		7th	Simultaneous Linear Equations	Types of simultaneous linear equations
		8th	Simultaneous Linear Equations	Application for Linear Programming (LP)
	4th Quarter	9th	Mid term exam	Roots of equation, simultaneous linear equation
		10th	Simultaneous Linear Equations	LU decomposition method for simultaneous linear equation
		11th	Interpolation Method	Lagrange interpolation
		12th	Interpolation Method	divided differences
		13th	Interpolation Method	Difference, and difference tabular
		14th	Interpolation Method	Newton's forward interpolation
		15th	Final Exam	Interpolation Method
		16th	Confirm	feedback of 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	70	30	0	0	0	0	100
Basic Abirity	35	0	0	0	0	0	35
Specific Abirity	35	30	0	0	0	0	65

Toyama College	Year	2020	Course Title	Discrete Mathematics Ⅱ

Course Information

Course Code	0116	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Hayase Yoshikazu		

Course Objectives

The lecture aims to understand the basic graph theory.
1. Understand the basic concepts of graphs.
2. basic techniques in graph processing.
3. Understand that graph can be adapted to familiar problems.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Understand the basic concepts of graphs correctly.	Understand the basic concepts of graphs.	Does not understand the basic concepts of graphs.
Evaluation 2	Understand basic techniques in graph processing correctly.	Understand basic techniques in graph processing.	Does not understand basic techniques in graph processing.
Evaluation 3	Can adapt graphs to familiar problems.	Understand that graphs can be adapted to familiar problems.	Does not understand that graphs can be adapted to familiar problems.

Assigned Department Objectives

JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	Lecture on the basic graph theory concepts and the basic methods in graph processing. There are many problems that formulate relationships between objects and their relationships. The graph is an effective mathematical tool for modeling such problems.
Style	Lecture and exercise
Notice	Require the score points of 60 or more to reach the evaluation standard of JABEE. Those whose evaluation is less than 60 points can receive a follow-up program by submitting the approval test application. As a result of the follow-up program, the score will be 60 points if certified. Follow-up program will differ depending on contents that have not been certified, so please check in advance.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Understand subjects of Information Mathematics II, basic concepts of graphs, and definitions of graphs.
		2nd	Basics of graphs	Understand the transformation operation of subgraphs and graphs.
		3rd	Basics of graphs	Understand connected graphs and connected components.
		4th	Exercise	Can make programs on graph representation and processing.
		5th	Bipartite graph	Understand bipartite graphs.
		6th	Trees and spanning trees	Understand trees and spanning trees.
		7th	Exercise	Can make programs related to bipartite graph and tree representation and processing.
		8th	Midterm exam	Confirm the degree of comprehension on the basis of graph theory.
	2nd Quarter	9th	The roundness of the graph	Explanation of answer example and returning the midterm exam. Students understand Hamilton Graph and Euler graph.
		10th	Exercise	Consider salesman problems and postal delivery problems.
		11th	Flat graph	Understand plane graphs and convex polyhedra.
		12th	Flat graph	Understand the degree of connection.
		13th	Directed graph	Understand connection, strong connection, and orientation of the graph.
		14th	Directed graph	Understand Hamilton directed graph and Euler directed graph.
		15th	Final exam	Confirm the degree of understanding basic graph theory concepts, and basic methods of graph processing.
		16th	Evaluation / confirmation	Explanation of answer example and returning the final exam.

Evaluation Method and Weight (%)

	Examination	Exercise	Total
Subtotal	80	20	100
Basic Ability	80	20	100

Toyama College	Year	2020	Course Title	Applied Mathematics Ⅰ

Course Information

Course Code	0119	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	基礎解析学　改定版		
Instructor	Matoba Ryuichi		

Course Objectives

The primary objective of the course is to acquire the following skills:
- To be able to solve basic level problems which are related to set up differential equations from group of curves.
- To be able to solve basic level first-order differential equations.
- To be able to solve basic level linear differential equations.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	To be able to solve advanced level problems which are related to set up differential equations from group of curves.	To be able to solve basic level problems which are related to set up differential equations from group of curves.	To be unable to solve problems which are related to set up differential equations from group of curves.
Evaluation 2	To be able to solve advanced level first-order differential equations.	To be able to solve basic level first-order differential equations.	To be unable to solve first-order differential equations.
Evaluation 3	To be able to solve advanced level linear differential equations.	To be able to solve basic level linear differential equations.	To be unable to solve linear differential equations.

Assigned Department Objectives

JABEE B1
ディプロマポリシー 3

Teaching Method

Outline	Separable equations, exact differential equations, homogeneous differential equations, constant coefficient linear differential equations
Style	Class style: Lectures and drills Evaluation: Homework, quiz, midterm exam, and final exam
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance and introduction of differential equation. (lecture and drill)	Students can set up differential equations from group of curves.
		2nd	First-order differential equations 1 (lecture)	Students understand methods to solve separable equations and homogeneous differential equations.
		3rd	First-order differential equations 2 (drill)	Students can solve separable equations and homogeneous differential equations.
		4th	First-order differential equations 3 (lecture)	Students understand methods to solve exact differential equation and linear differential equation.
		5th	First-order differential equations 4 (drill)	Students can solve exact differential equation and linear differential equation.
		6th	First-order differential equations 5 (lecture and drill)	Students can apply differential equations to problems in mechanics, electric circuit, and so on.
		7th	Review of 1st week to 6th week (drill)	Review topics of 1st week to 6th week.
		8th	Midterm exam	Midterm exam
	2nd Quarter	9th	Linear differential equations 1 (lecture and drill)	Students understand methods to solve linear differential equations and can solve them.
		10th	Linear differential equations 2 (lecture and drill)	Students understand differential operator.
		11th	Linear differential equations 3 (lecture and drill)	Students understand methods to solve constant coefficient linear homogeneous differential equations and can solve them.
		12th	Linear differential equations 4 (lecture and drill)	Students understand integration operator.
		13th	Linear differential equations 5 (lecture and drill)	Students understand methods to solve constant coefficient linear differential equations and can solve them.
		14th	Review of 9th week to 13th week (drill)	Review topics of 9th week to 13th week.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the 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 Ability	50	0	0	0	0	20	70
Technical Ability	10	0	0	0	0	0	10
Interdisciplinary Ability	20	0	0	0	0	0	20

Toyama College	Year	2020	Course Title	Applied Mathematics Ⅱ

Course Information

Course Code	0120	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	基礎解析学　改定版		
Instructor	Matoba Ryuichi		

Course Objectives

The primary objective of the course is to acquire the following skills:
- To be able to solve basic vector four arithmetic operations.
- To be able to solve basic vector calculus.
- To be able to solve basic problems in scalar field and vector field.
- To be able to apply integral formula to solve basic problems in vector field.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	To be able to solve advanced vector four arithmetic operations.	To be able to solve basic vector four arithmetic operations.	To be unable to solve vector four arithmetic operations.
Evaluation 2	To be able to solve advanced vector calculus.	To be able to solve basic vector calculus.	To be unable to solve vector calculus.
Evaluation 3	To be able to solve advanced problems in scalar field and vector field.	To be able to solve basic problems in scalar field and vector field.	To be unable to solve problems in scalar field and vector field.
Evaluation 4	To be able to apply integral formula to solve advanced problems in vector field.	To be able to apply integral formula to solve basic problems in vector field.	To be unable to apply integral formula to solve problems in vector field.

Assigned Department Objectives

JABEE B1
ディプロマポリシー 3

Teaching Method

Outline	Basic vector arithmetic (scalar product, cross product), calculus of vector functions, gradient, divergence, rotation, divergence theorem, and Stoles' theorem
Style	Class style:Llecture and drills Evaluation: Homework, quiz, midterm exam, and final exam
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance and vector algebra (lecture and drill)	Students can solve basic problems of vector algebra.
		2nd	Differential of vector functions (lecture and drill)	Students can differentiate vector functions.
		3rd	Integration of vector functions (lecture and drill)	Students can integrate vector functions.
		4th	Scalar field and vector fields 1 (lecture and drill)	Students understand directional derivative and gradient, and can apply them to given problems.
		5th	Scalar field and vector fields 2 (lecture and drill)	Students understand divergence and rotation.
		6th	Scalar field and vector fields 3 (lecture and drill)	Student can apply divergence and rotation to given problems.
		7th	Review of 1st week to 6th week (drill)	Review topics of 1st week to 6th week.
		8th	Midterm exam	Midterm exam
	4th Quarter	9th	Scalar field and vector fields 4 (lecture and drill)	Students understand space curve, tangent vector, arc length, and apply them to given problems.
		10th	Scalar field and vector fields 5 (lecture and drill)	Students understand curvilinear integral in scalar and vector field, and can apply them to givem problems.
		11th	Scalar field and vector fields 6 (lecture and drill)	Students understand surface integral in scalar and vector field, and can apply them to givem problems.
		12th	Integral formula 1 (lecture and drill)	Students understand divergence theorem, and can apply it to givem problems.
		13th	Integral formula 2 (lecture and drill)	Students understand Stokes' theorem, and can apply it to givem problems.
		14th	Review of 9th week to 13th week	Review topics of 9th week to 13th week.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the 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 Ability	50	0	0	0	0	20	70
Technical Ability	10	0	0	0	0	0	10
Interdisciplinary Ability	20	0	0	0	0	0	20

Toyama College	Year	2020	Course Title	Applied Physics Ⅲ

Course Information

Course Code	0121	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ito Nao		

Course Objectives

At the completion of this course, students will be able to:
1) Uunderstand the dynamics and solve problems using differential equation
2) Understand thermodynamics and find a cycle efficiency, a change of the entropy, the mean speed of gas molecules

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand dynamics properly and can solve applied problems about dynamics.	Can understand dynamics and can solve basic problems about dynamics.	Cannot understand dynamics and cannot solve problems about dynamics.
Evaluation 2	Can understand thermodynamics properly and can solve applied problems about thermodynamics.	Can understand thermodynamics and can solve basic problems about thermodynamics.	Cannot understand thermodynamics and cannot solve problems about thermodynamics.

Assigned Department Objectives

JABEE B1
ディプロマポリシー 3

Teaching Method

Outline	This course deals with developing the applied physical knowledge to the engineering field based on the knowledge of mathematics nad physics that students learned so far. At the first, we treat dynamics problems that students learned and introduce the solution by using knowledge of the mathematics that students learn newly. Next, we make explanations about the consept and example on thermodyanamic first and second laws. At the end, we make explanations about the consept of thermodynamical functions such as entorpy, and deepen thermodynamic systematic understanding.
Style	Lectures by teachers alone are conducted.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	First order liner differential equation	1) Can solve fisrt order liner equation. 2) Can build equation of motion on dynamics problem.
		2nd	Equation of motion on circular motion	1) Can explain the equation of motion on circular motion. 2) Can build equation of motion on circular motion.
		3rd	Conservation law of momentum	1) Can explain the deffinition and the conservation law of momentum. 2) Can build a equation on dynamic problems.
		4th	Center of gravity	1) Can explain the definition and the characteristic of center of gravity. 2) Can find center of gravity on a discrete body and a rigid body.
		5th	Moment of inertia	1) Can explain a property of the moment of inertia. 2) Can find the moment of inertia for various rigid bodies. 3) can describe a equation of motion rotational motion for a rigid body.
		6th	Damped oscillation	1) Can build equation of motion in problems of the dynamics. 2) Can solve a equation of motion as second order linear differential equation.
		7th	Problem exercise	Can build and solve a differential equation for problems of the dynamics so far.
		8th	Midterm exam	
	2nd Quarter	9th	Temperature and movement of heat	1) Can explain difference between temperature and heat. 2) Can solve the differential equation using the cooling law of Newton in thermodynamic problems.
		10th	Equation of state and phase of substance	1) Can explain three phases of substance and property of supercritical fluids. 2) Can find critical point and the Fan Dell Waals constant of a substance using Fan Dell Waals's state equation.

		11th	Molecular motion of gas	1) Can find the mean free path of gas molecules. 2) Can find average rate of motion of gas molecules using velocity distribution law of Maxwell Boltzmann.
		12th	Thermodynamic first law, isochoric change, isobaric change, isothermal change and adiabatic change of gas	Can find the amount of change of internal energy, heat capacity and work in various state changes of gas using the thermodynamic first law.
		13th	State change of gas, adiabatic process of an ideal gas and carneau cycle	1) Can explain the state change of gas in each process of Carnot cycle. 2) Can find cycle efficiency of various thermomotors.
		14th	Thermodynamic second law and entropy	1) Can explain second law of thermodynamics, principle of Thompson and principle of Clausius. 2) Can explain Carnot's theorem using second law of thermodynamic. 3) Can explain the definition and the property of the entropy. 4) Can find the amount of change of the entropy in a reversible process and an irreversible process.
		15th	Final exam	
		16th	Grading confirmation, question evaluation questionnaire	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	40	0	0	0	10	0	50
Technical Ability	40	0	0	0	10	0	50

Toyama College	Year	2020	Course Title	Applied Physics Ⅳ

Course Information

Course Code	0122	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	4th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Ito Nao		

Course Objectives

At the completion of this course, students will be able to:
1) Understand the relation about photon among energy, wavelength and momentum.
2) Understand Schrodinger equation and handling of the wave function.
3) Understand Pauli's exclusion principle and Fermi - Dirac's distribution function.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand the properties of the photon properly and can solve an applied problem.	Can understand the properties of the photon and can solve a basic problem.	Cannot understand the properties of the photon and cannot solve a basic problem.
Evaluation 2	Can understand Schrodinger equation and a wave function properly and can solve an applied problem.	Can understand Schrodinger equation and a wave function and can solve a basic problem.	Cannot understand Schrodinger equation and a wave function and cannot solve a basic problem.
Evaluation 3	Can understand Pauli's exclusion principle and Fermi-Dirac's distribution function properly and can solve an applied problem.	Can understand Pauli's exclusion principle and Fermi-Dirac's distribution function and can solve a basic problem.	Cannot understand Pauli's exclusion principle and Fermi-Dirac's distribution function and cannot solve a basic problem.

Assigned Department Objectives

JABEE B1
ディプロマポリシー 3

Teaching Method

Outline	Engineering is based on physics. It is important to understand essence of engineering based on physics because engineers should be able to adapt it to unknown fields of study, and today's technological change and diversity. In this course of lectures, we will study about basics quantum mechanics which supports modern physics. Quantum mechanics supports today's high-technique science in many fields. It's a professional study, and the concept may be necessary for engineers. The purpose of this course of lectures is to understand the basic of quantum mechanics, and structure and property of an atom and a material related to quantum mechanics.
Style	Lectures by teachers alone are conducted.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Property of the light, black body radiation and Planck's quantum hypothesis	1) Can explain wavelength, frequency and speed of light. 2) Can derive Planck's formula. 3) Can explain Planck's quantum hypothesis.
		2nd	Photoelectric effect, Compton effect and particle characteristics of light	1) Can explain photoelectric effect and Compton effect. 2) Can explain that a photon has energy and a momentum. 3) Can solve problems about photoelectric effect and Compton effect.
		3rd	Atomic spectrum, Rydberg's formula and quantum condition of Bohr	1) Can explain atomic spectrum and Rydberg's formula. 2) Can explain a quantum condition of Bohr. 3) Can derive Rydberg's formula using a quantum condition of Bohr.
		4th	Waviness of electron, de Broglie wabe and Schrodinger equation	1) Can explain waviness of electron and de Broglie wabe. 2) Can derive Schrodinger equation using classic wave equation and de Broglie's formula.
		5th	One-dimensional well potential problem	Can find the wave function and the probability density function on one-dimensional well potential problem using boudary condition and normalization condition.
		6th	Expected value and fluctuation of position	Can find expected value and fluctuation of position on one-dimensinal well potential problem.
		7th	Midterm exam	

		8th	Expected value, fluctuation of momentum and uncertainty principle of Heisenberg	1) Can find expected value and fluctuation of momentum on one-dimensinal well potential problem. 2) Can explain uncertainty principle of Heisenberg. 3) Can prove uncertainty relation on one-dimensional well potential problem.
	4th Quarter	9th	Schrodinger equation for applying to hydrogen atom	1) Can apply Schrodinger equation to hydrogen atom. 2) Can solve Schrodinger equation on hydrogen atom.
		10th	Four quantum numbers and Pauli's exclusion principle	1) Can explain four quantum numbers and their propaties. 2) Can explain Pauli's exlcusion principle.
		11th	Energy level being divided and an energy band being formed in gas molecules and solid molecules, according to Pauli's exlusion principle	1) Can explain division of energy level. 2) Can explain each level and its characteristics in energy band.
		12th	Distinction of conductor, semiconductor and insulator Sate density, Fermi-Dirac distribution and electron density	1) Can expain the distinction of conductor, semiconductor and insulator from the viewpoint of energy band. 2) Can understand state density and Fermi-Dirac distribution and can derive electron density.
		13th	Intrinsic semiconductor and impurity semiconductor Constitution and property of n-type semiconductor and the p-type semiconductor	Can explain constitution and a property of n-type semiconductor and the p-type semiconductor.
		14th	Problem exercise	
		15th	Final exam	
		16th	Grading confirmation, question evaluation questionnaire	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	40	0	0	0	10	0	50
Technical Ability	40	0	0	0	10	0	50

Toyama College	Year	2020	Course Title	Physical Education V

Course Information

Course Code	0233	Course Category	General / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials	「Active Sports 総合版」 大修館書店		
Instructor	Hayashi Naoto		

Course Objectives

1. Objectively valuation own fitness levels and exercise for development of own fitness.
2. Problem-solving for building up own skills and abilities of various sports.
3.Playing advanced games while considerration safe and cooperation.

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	We can select sports to build up fitness factors we target from selt-estimation of fitness tests, and devise practice methods.	We can select sports to build up fitness factors we target from self-estimation of fitness tests.	We can't make out fitness factors we have to build up from self-estimation of fitness tests.
評価項目2	We can acquire technical skills while basic drills, and exert these during games.	We can plan basic drills to acquire technical skills and make effors to use these.	We can't plan basic drills to acquire technical skills.
評価項目3	We can play games using advanced tactics while working hard with teammates' cooperation.	We can play games while working hard with teammates' cooperation.	We can't play games while working hard with teammates' cooperation.

Assigned Department Objectives

ディプロマポリシー 2

Teaching Method

Outline	1. Selecting some sports, and building up abilities to improve a lack of exercise situation and enjoy sports and exercise during own lifetime. 2. Training communication skill, understanding spiritual happiness and physicaly health during physical activities. And learing about roles for groups to grow up as engineer who administer community.
Style	In1st and 2nd classes, enforcing fitness tests for longitudinal and cross-section estimation of own fitness levels. Style of classes are adopted to select some sports in accordance with own fitness level, needs and ability for exercise by results of finess tests .
Notice	Promotion for safety counterplan. In 3rd to 15th classes, student selects 2 sports and pursue these in 12 times (1 sports 6 times * 2). As a result is under 60 points, student can make-up a resit by an application. If a result of resit is filled with established stanndard, an estimation becomes 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation & Fitness test	We take an explanation of the syllabuse and take fitness tests.
		2nd	Fitness test	We take fitness tests and estimate own fitness level. We awake fitness factors that we should improve.
		3rd	Select Sports (Softball, Beach volleyball, Futsal, Tennis)	We select a sports fitting our own fitness level or exercise needs.
		4th	Select Sports (Softball, Beach volleyball, Futsal, Tennis)	We prepare in coopration with teammates and practice in safety.
		5th	Select Sports (Softball, Beach volleyball, Futsal, Tennis)	We set a goal of the sports we selected with teammates.
		6th	Select Sports (Softball, Beach volleyball, Futsal, Tennis)	We understand skills of optional sports and practice to build up these.
		7th	Select Sports (Softball, Beach volleyball, Futsal, Tennis)	We learn and act with teammates to get higher skills.
		8th	Select Sports (Softball, Beach volleyball, Futsal, Tennis)	We enjoy to play games by easier rules.
	2nd Quarter	9th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	We understand skills of optional sports and devise practices to build up these more.
		10th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	We play games in safety, fairly by rules.
		11th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	We devise basic drills with teammates to build up individual/ group tactics.

		12th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	We devise basic drills with teammates to build up team tactics.
		13th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	We play games in accordance with fair referee.
		14th	Select Sports (Beach volleyball, Futsal, Tennis, Badminton)	We challenge high level tactics with advices from teammates or external feedbacks.
		15th	Class Evaluation	We pursue self-estimation and mutual-estimation.
		16th		

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	10	0	0	20	70	0	100
基礎的能力	10	0	0	0	0	0	10
専門的能力	0	0	0	0	50	0	50
分野横断的能力	0	0	0	20	20	0	40

Toyama College	Year	2020	Course Title	Overseas Program in English Speaking Countries

Course Information

Course Code	0235	Course Category	General / Elective
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

（1）英語を正確に使うことの重要性を認識し努力することができる。
（2）英語の背景にある欧米文化の主語と動詞を明確にするコミュニケーションスタイルの構築することができる。
（3）規則、約束、期限を遵守でき、主体的に生活できるように努力をすること。

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
英語力	英語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。	英語を正確に使うことの重要性を認識し努力することができる。	英語を正確かつ積極的に使うための努力しない。
異文化コミュニケーション	英語の背景にある欧米文化、とくに主語と動詞を明確にする因果関係のコミュニケーションスタイルに気づき、これを新たに構築しようと努力することができる。	英語の背景にある欧米文化の主語と動詞を明確にするコミュニケーションスタイルの構築することができる。	主語と動詞を明確にするコミュニケーションスタイルを学ぼうとしない。
言語的コミュニケーション	規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。	規則、約束、期限を遵守でき、主体的に生活できるように努力をすること。	言語による主体的な生活を作ろうとしない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	（1）目標 ハワイのカウアイコミュニティカレッジにおいて工学系の学生と共に学び、活動することを通して、異文化理解を促進して視野を広げること，そして，英語の運用力を獲得するとともに正確に言葉を使う意識を高めること。 （2）概要 ハワイ・カウアイコミュニティカレッジで３週間の異文化体験研修を実施する。
Style	英語圏の国へ滞在し現地で語学研修等の実習を行う。
Notice	ハワイのカウアイコミュニティカレッジが提供する工学系英語コース（３週間）での授業（0900～1500）と当該大学の学生との交流及びホームステイを２泊３日実施する。通常の宿泊はコテッジでの共同合宿の形態をとる。 「研修改善策」 研修期間中には、教員が同行して，授業及びホームステイでの学生の様子を観察し，問題に対応する方法に換えた。帰国後のアンケート及びレポートから，参加学生は研修での体験に概ね満足している。 追認試験は実施しない。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	英語圏：ハワイ　カウアイコミュニティカレッジ	夏季休業中に実施する
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
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 (%)

	レポート・発表	出席・態度	Total
Subtotal	80	20	100
基礎的能力	0	0	0
専門的能力	40	10	50
分野横断的能力	40	10	50

Toyama College	Year	2020	Course Title	Overseas Program in the Japan Sea Rim

Course Information

Course Code	0241	Course Category	General / Elective
Class Format	Experiment / Practical training	Credits	School Credit: 3
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Year-round	Classes per Week	3
Textbook and/or Teaching Materials			
Instructor	Terasaki Yukiko		

Course Objectives

１．環日本諸国語圏（韓国のソウル市、ロシアのウラジオストク市、あるいは、台湾の台北市）での生活体験を通して、韓国語、ロシア語、あるいは、中国語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。
２．環日本諸国語圏での生活体験を通して、それらの言語の背景にある固有の文化的特徴に気づき、これを理解し自己の中に新たに構築しようと努力することができる。
３．本研修にかかる全ての準備、実施、事後報告の活動を通じて、規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。

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
環日本諸国語の理解力と運用力	韓国語、ロシア語、あるいは、中国語を正確にかつ積極的に使うことの重要性を認識するとともに、その達成に努力することができる。	韓国語、ロシア語、あるいは、中国語を正確に使うことの重要性を認識し努力することができる。	韓国語、ロシア語、あるいは、中国語を正確かつ積極的に使うことための努力しない。
異文化コミュニケーション	韓国語、ロシア語、あるいは、中国語の背景にある固有の文化的特徴に気づき、これを理解し自己の中に新たに構築しようと努力することができる。	韓国語、ロシア語、あるいは、中国語の背景にある固有の文化に関心を持つ。	韓国語、ロシア語、あるいは、中国語の背景にある固有の文化に関心も持とうともしない。
言語的コミュニケーション	規則、約束、期限を遵守でき、言語的コミュニケーションを軸にして主体的に生活できるようになること。	規則、約束、期限を遵守でき、言語による主体的な生活を作ろうと努力することができる。	言語による主体的な生活を作ろうとしない。

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	環日本海諸国語圏異文化実習は、韓国のソウル市にある延世大学語学堂、ロシア・ウラジオストク市にあるウラジオストク連邦総合大学、あるいは、台湾の台北市にある台湾師範大学の各地において、毎夏実施している3~4週間の異文化体験実習である。この研修への参加者は、4月から8月の出発までに4~5回のガイダンスと7月中に実施する５時間程度の語学事前集中セミナーに参加することが義務付けられている。以上の物心両面における周到な準備を経て研修を迎えることにしている。現地では、午前中は語学の授業、午後は現地の自然や設備を使った様々な活動やフィールドトリップに参加する。生活の基盤は大学の学生寮であり、現地の日常生活と学生生活を通した異文化理解体験の場を提供する。帰国後は、所定のレポートと現地での学業成績や出席状況を提出して単位が付与される。
Style	事前ガイダンス、現地研修参加、及び、事後報告書と成績、出席証明の提出に基づいて委員会において承認され、「認」、「不認」で評価される。
Notice	この研修への参加条件として、学内で学生処分の経歴を有する者は参加することができないので注意のこと（詳細は研修担当者まで）。　引率者は出発から冒頭の1週間学生に随行して、諸問題の解決を支援する。世界情勢によって中止の場合がある。評価の方法は上記を参照のこと。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	出発前ガイダンス（１）	参加者の自己紹介、抱負の共有、リーダー・副リーダー決定、プログラム登録書類・ホームステイ関係書類の作成指導
		2nd	出発前ガイダンス（２）	携行品、生活全般における注意、旅行保険の加入等
		3rd	出発前ガイダンス（３）	保護者同伴ガイダンス、費用の納入
		4th	出発前ガイダンス（４）	携行品の確認
		5th	出発前ガイダンス（５）	緊急連絡体制の確認、出発時間･場所の確認
		6th	現地第1週目	午前：語学の授業、午後：アクティビティー、放課後：大学寮
		7th	現地第2週目	週末（土・日）は、大学寮で過ごす。
		8th	現地第3週目	
	2nd Quarter	9th	現地第4週目	
		10th	帰国後ガイダンス	研修中に遭遇した問題点の反省、単位認定に必要なものの確認
		11th	レポート作成、成績証明書、出席証明書	必要書類の期限内提出
		12th	単位認定	
		13th		
		14th		
		15th		
		16th		
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 (%)

	試験	レポート・発表	相互評価	出席・態度	ポートフォリオ	その他	Total
Subtotal	0	80	0	20	0	0	100
基礎的能力	0	0	0	0	0	0	0
専門的能力	0	40	0	10	0	0	50
分野横断的能力	0	40	0	10	0	0	50

Toyama College	Year	2020	Course Title	Japanese Language and Culture

Course Information

Course Code	0244	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Kubo Yoko		

Course Objectives

This course aims to develop students' basic knowledge about Japanese theater through watching various works.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Acquire knowledge of performing arts.	Acquire basic knowledge of performing arts.	Can't acquire basic knowledge of performing arts.
Achievement 2	Analyze and survey of the work deeply.	Analyze and survey of the work.	Can't analyze and survey of the work.
Achievement 3	Express your idea about Japanese theater and culture fluently.	Express your idea about Japanese theater and culture.	Can' t express your idea about Japanese theater and culture.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	This course aims to develop students' basic knowledge about Japanese theater through watching various works. Join the class activity and express your idea about Japanese literature and culture.
Style	
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation	Explanation of syllabus
		2nd	Performing arts	Outline of performing arts in Japan
		3rd	Performing arts	Outline of performing arts in Japan
		4th	Performing arts	Outline of performing arts in Japan
		5th	Rakugo	Watch the work and write a paper.
		6th	Rakugo	Deeply understand the idea of the work and enrich knowledge of Japanese theater and culture.
		7th	Modern theatre	Watch the work and write a paper.
		8th	Modern theatre	Deeply understand the idea of the work and enrich knowledge of Japanese theater and culture.
	2nd Quarter	9th	Kabuki	Watch the work and write a paper.
		10th	Kabuki	Deeply understand the idea of the work and enrich knowledge of Japanese theater and culture.
		11th	Takarazuka Revue	Watch the work and write a paper.
		12th	Takarazuka Revue	Deeply understand the idea of the work and enrich knowledge of Japanese theater and culture.
		13th	No	Watch the work and write a paper.
		14th	No	Deeply understand the idea of the work and enrich knowledge of Japanese theater and culture.
		15th	Review	
		16th		

Evaluation Method and Weight (%)

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

Toyama College	Year	2020	Course Title	Law

Course Information

Course Code	0245	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	落合誠一著『会社法要説　第2版』（有斐閣、2016年）		
Instructor	Takakura Fumito		

Course Objectives

1．会社法の基礎知識が習得できる。
2．経済活動における会社の位置づけが理解できる。
3．会社法に関するコーポレートガバナンスの意味や関係が理解できる。

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	会社法の基礎知識をよく知っており、コーポレートガバナンスもよく理解している。	会社法の基礎知識を知っており、コーポレートガバナンスも理解している。	会社法の基礎知識を知っておらず、コーポレートガバナンスも理解していない。
評価項目2			
評価項目3			

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	学生の皆さんが会社法の基礎知識を身に付け、コーポレートガバナンス等を理解することを目標とする。
Style	会社法の基礎知識の解説を判例や図表をまじえながら行う。また、コーポレートガバナンスと会社法の関係などにも触れる。
Notice	定期試験80点、平常点（宿題等）20点とし合計60点以上合格とする。評価が60点に満たない者は、願い出により追認試験を受けることができる。追認試験の結果、単位の修得が認められた者でにあっては、その評価を60点とする。

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	ガイダンス 会社法の沿革	会社法の歴史
		2nd	商法における会社法の位置	商法の意義 商法と会社法
		3rd	企業をめぐるステークホルダーと企業形態（1）	企業の現状 個人企業をめぐるステークホルダー
		4th	企業をめぐるステークホルダーと企業形態（2）	団体企業をめぐるステークホルダー 会社の種類
		5th	株式会社の存在意義と会社の目的	会社の目的 利害調整の指導原則法ルール
		6th	株式会社の基本原則	株主有限責任の原則 株式自由譲渡の原則 株式会社法の重要課題
		7th	コーポレートガバナンス（1）	総説 株式会社の経営機関
		8th	コーポレートガバナンス（2）	善管注意義務 経営判断の原則
	2nd Quarter	9th	コーポレートガバナンス（3）	競業取引避止義務 利益相反取引 取締役の責任
		10th	コーポレートガバナンス（4）	経営監督 監査役の役割と責任
		11th	コーポレートガバナンス（5）	株主の権利 株主総会の役割 株主代表訴訟
		12th	会社の資金調達	株式発行 社債発行
		13th	会社の財務・剰余金の配当	会社の財務 剰余金配当
		14th	会社組織の誕生と変動	設立 組織再編・変更 企業買収
		15th	期末試験	実施する 前期の学習内容の確認
		16th	成績評価・確認	期末試験及びレポートの成績評価・確認

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	80	0	0	0	0	20	100
基礎的能力	80	0	0	0	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

Toyama College	Year	2020	Course Title	English Practicum Ⅲ

Course Information

Course Code	0246	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	Materials will be provided by an instructor.		
Instructor	Yamamura Hiroto		

Course Objectives

By the end of this course, students will be better able to express themselves clearly and concisely in English.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students are able to express ideas clearly and concisely in English.	Students are able to express ideas in English.	Students cannot express ideas in English.

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	This course provides students with practical writing practices in English. In each class, students are required to translate Japanese sentences into English.
Style	The instructional emphasis will be on pair work as well as lectures. Assessment is based on mini tests conducted each week.
Notice	Students should mark more than 60 on average in order to pass the course. When they fail the course, students are eligible to retake the exam.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Introduction	Students are able to understand the goals of the course
		2nd	Translation practices	Students are able to express ideas clearly in English.
		3rd	Translation practices	Students are able to express ideas clearly in English.
		4th	Translation practices	Students are able to express ideas clearly in English.
		5th	Translation practices	Students are able to express ideas clearly in English.
		6th	Translation practices	Students are able to express ideas clearly in English.
		7th	Translation practices	Students are able to express ideas clearly in English.
		8th	Translation practices	Students are able to express ideas clearly in English.
	2nd Quarter	9th	Translation practices	Students are able to express ideas clearly in English.
		10th	Translation practices	Students are able to express ideas clearly in English.
		11th	Translation practices	Students are able to express ideas clearly in English.
		12th	Translation practices	Students are able to express ideas clearly in English.
		13th	Translation practices	Students are able to express ideas clearly in English.
		14th	Translation practices	Students are able to express ideas clearly in English.
		15th	Translation practices	Students are able to express ideas clearly in English.
		16th	Translation practices	Students are able to express ideas clearly in English.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0

Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Chinese Ⅲ

Course Information

Course Code	0247	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	白水社「中国語はじめの一歩」		
Instructor	Hoshino Akemi		

Course Objectives

(1) Acquire the ability to read kanji while looking at “pinyin”.
(2)To be able to master beginner level grammar.
(3) Students aim to be able to do simple Chinese-Japanese translation and Japanese-Chinese translation.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Can pronounce almost perfectly while looking at kanji “pinyin”.	Can pronounce correctly while looking at kanji “pinyin”.	Can’t pronounce correctly while looking at kanji “pinyin”.
Evaluation 2	Can write beginner level Japanese-Chinese translation and Japanese-Japanese translation, almost perfectly using words while understanding the grammar.	Can write beginner level Japanese-Chinese translation and Japanese-Japanese translation, correctly using words while understanding the grammar.	Can’t impossible to write correctly beginner level Japanese-Chinese translation and Japanese-Japanese translation, using words without understanding the grammar.
Evaluation 3			

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	(1) Aims to be able to acquire basic Chinese skills. (2) Learn pronunciation practice, simple grammar, kanji and pinyin while introducing Chinese culture, customs so as to be interested in Chinese language.
Style	Lectures and exercises by the teacher alone.
Notice	Those who do not have a score of 60 can take the back-up examination upon request. For those who have been awarded credits as a result of the back-up examination, the score is 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Unit 9	Description of syllabus Complete form learning
		2nd	Unit 9	grammar Practice of conversation
		3rd	Unit 9	Check the answer of homework Quiz
		4th	Unit 10	Practice of pronunciation
		5th	Unit 10	Learning of grammar Learning of prepositions
		6th	Unit 10	Check the answer of homework Quiz
		7th	Unit 11	Practice of pronunciation Practice of conversation
		8th	Unit 11	Learning of grammar
	2nd Quarter	9th	Unit 11	Choice question form Check the answer of homework Quiz
		10th	Unit 12	pronunciation Practice of conversation
		11th	Unit 12	grammar
		12th	Unit 12	Practice of conversation Check the answer of homework
		13th	self-introduction	Learning of self-introduction
		14th	Comprehensive review	
		15th	End-term Exam	A written examination will be conducted on the lecture content from 1st week to 14th week.
		16th	Grade evaluation and confirmation	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Quiz	Total
Subtotal	90	0	0	0	0	10	100

Basic Ability	90	0	0	0	0	10	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Russian Ⅲ

Course Information

Course Code	0249	Course Category	General / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	『初級ロシア語20課』及びプリント		
Instructor	Yamamoto Yuki		

Course Objectives

At the completion of this course, students will be able to
1)Answer questions about adjectives and uses of the cases of nouns
2)Speak using the grammar they have already learned
3)Make more than 60 percent correct answers in word tests

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Answer questions about adjectives and uses of the cases of nouns correctly	Answer questions about adjectives and uses of the cases of nouns	Can't answer questions about adjectives and uses of the cases of nouns
Evaluation 2	Speak using the grammar they have already learned correctly	Speak using the grammar they have already learned	Can't speak using the grammar they have already learned
Evaluation 3	Make more than 80 percent correct answers in word tests	Make more than 60 percent correct answers in word tests	Can't make more than 60 percent correct answers in word tests

Assigned Department Objectives

ディプロマポリシー 3

Teaching Method

Outline	You will learn and understand the introductory Russian.
Style	Lecture and seminar
Notice	Students who fail to pass can apply for an approval test. If the approval test is passed, the evaluation is 60 points.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Orientation.	Students are able to understand the goals of the course
		2nd	Lesson 12. I was busy. 1)	Students are able to understand grammar and vocabulary covered in a class
		3rd	Lesson 12. I was busy. 2)	Students are able to understand grammar and vocabulary covered in a class
		4th	Lesson 13. What is the recommended soup? 1)	Students are able to understand grammar and vocabulary covered in a class
		5th	Lesson 13. What is the recommended soup? 2)	Students are able to understand grammar and vocabulary covered in a class
		6th	Lesson 14. How are you feeling? 1)	Students are able to understand grammar and vocabulary covered in a class
		7th	Lesson 14. How are you feeling? 2)	Students are able to understand grammar and vocabulary covered in a class
		8th	The first term midterm	
	2nd Quarter	9th	Examination paper return and explanation	
		10th	Lesson 15. When are you going out? 1)	Students are able to understand grammar and vocabulary covered in a class
		11th	Lesson 15. When are you going out? 2)	Students are able to understand grammar and vocabulary covered in a class
		12th	Lesson 16. Excuse me, please ... 1)	Students are able to understand grammar and vocabulary covered in a class
		13th	Lesson 16. Excuse me, please ... 2)	Students are able to understand grammar and vocabulary covered in a class
		14th	Lesson 17. How much is this dictionary? 1)	Students are able to understand grammar and vocabulary covered in a class
		15th	Lesson 17. How much is this dictionary? 2)	Students are able to understand grammar and vocabulary covered in a class
		16th	Examination paper return and explanation	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	0	30	100
Basic Ability	70	0	0	0	0	30	100

Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Graduation Research

Course Information

Course Code	0234	Course Category	Specialized / Compulsory
Class Format	Experiment / Practical training	Credits	School Credit: 12
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Year-round	Classes per Week	12
Textbook and/or Teaching Materials			
Instructor	Oguma Hiroshi		

Course Objectives

1. Learn independently and continuously 2. Advance and summarize research intentionally 3. Explain the background of a subject of research, and the purpose 4. Investigate related literature 5. Examine the experiment method and can construct an experimental device and a calculation program 6. Analyze an experimental result 7. Summarize the result of research as a paper 8. Summarize the result of research briefly and make oral presentation.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Foundation degree thesis	The validity of the enforcement is shown appropriately.	The validity of the enforcement is explained to some extent.	The validity of the enforcement is not explained to some extent.
Presentation	Able to arrange the main point as the purpose and aconclusion	Able to have described the purpose and the conclusion	Not able to have described the purpose and the conclusion
The effort for research	Able to find a subject myself and tackle research positively	Able to tackle research for the given research solution	Not able to tackle research for the given research solution

Assigned Department Objectives

JABEE C3
ディプロマポリシー 2

Teaching Method

Outline	Students carry out research through the verification consideration including craftsmanship and simulations, such as investigation, an analysis and a experiment, or a program development.
Style	Students learn communications skills through poster presentation and oral presentation.
Notice	Credit is authorized by poster presentation and oral presentation.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Research meeting	The rule for research
		2nd	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		3rd	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		4th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		5th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		6th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		7th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		8th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
	2nd Quarter	9th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		10th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		11th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		12th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		13th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		14th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		15th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		16th	Term-end examination	Poster presentation
2nd Semester	3rd Quarter	1st	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		2nd	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		3rd	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)

		4th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		5th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		6th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		7th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		8th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
	4th Quarter	9th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		10th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		11th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		12th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		13th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		14th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		15th	Research	Learning of research field (Investigation, Seminar, Theme set, Planning, Implementation, Report)
		16th	Term-end examination	Oral presentation

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	100	0	0	0	0	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	0	50	0	0	0	0	50
Interdisciplinary Ability	0	50	0	0	0	0	50

Toyama College	Year	2020	Course Title	Digital Signal Processing Ⅰ

Course Information

Course Code	0236	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Oguma Hiroshi		

Course Objectives

Electronics and Compter Engineering students are provided with fundamentals in digital signal processing: FIR filter, IIR filter, Digtal Fourier-Transform

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
FIR filter	Able to deduce the frequency characteristic of the second transfer function	Able to deduce the frequency characteristic of the first transfer function	Not able to deduce the frequency characteristic of the first transfer function
IIR filter	Able to deduce the frequency characteristic of the second transfer function	Able to deduce the frequency characteristic of the first transfer function	Not able to deduce the frequency characteristic of the first transfer function
Digtal Fourier-Transform	Able to understand fast Fourier-Transform	Able to understand digtal Fourier-Transform	Not able to understand digtal Fourier-Transform

Assigned Department Objectives

JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	Electronics and Compter Engineering students understands the contents of a lesson indicated to the syllabus, and they can perform explanation and calculation.
Style	I aim at mastering of the contents of this course by lectures and drills.
Notice	60 or more points need to be conferred for unit authorization.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	80	0	0	0	20	0	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Electronic Circuits Ⅲ

Course Information

Course Code	0237	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Ito Nao		

Course Objectives

At the completion of this course, students will be able to:
1) Understand the architecture of the microcomputer.
2) Connect outside parts to an electronic development board with microcomputer and perform control and signal processing by the C language.
3) Understand the concept and the characteristic of interruption and make a program including interruption prosessing.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand the architecture of the microcomputer properly and can explain it in detail.	Can understand the architecture of the microcomputer and can explain it.	Cannot understand the architecture of the microcomputer and cannot explain it.
Evaluation 2	Can connect outside parts to an electronic development board with microcomputer and can process control and signal by the C language appropriately.	Can connect outside parts to an electronic development board with microcomputer and can process control and signal by the C language.	Cannot connect outside parts to an electronic development board with microcomputer and cannot process control and signal by the C language.
Evaluation 3	Can understand the concept and the characteristic of the interruption properly and can make a programu including interruption prossesing appropriately.	Can understand the concept and the characteristic of the interruption and can make a programu including interruption prossesing.	Cannot understand the concept and the characteristic of the interruption and cannot make a programu including interruption prossesing.

Assigned Department Objectives

MCCコア科目
JABEE B5
ディプロマポリシー 1

Teaching Method

Outline	This course deals with the basic of microcomputer programming that includes the handling method of data inside and outside the microcomputer, signal processing technique and its utilization, through microcomputer programming by the C language. It also enhances the development of student's skill in I/O interface technique and interaption prossesing through excerceises about connect electronic parts (LED, switch and LCD etc.) to the electronic development board with micro computer. Students must read and understand the distributed lecter document by themselvs, and work on problems and excercises in the class lesson. Students must submit the problems and exercises as a report, and it will be evaluated by teacher.
Style	Lectures by teachers alone are conducted.
Notice	Students need the basic knowledge and technique of the microcomputer and the C language. In addition, the knowledge and techniqet of I/O interface and hardware are needed. The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Basic architecture register of microcomputer implemented by an electronic development board, memory and I/O	1) Can understand the architecture of the microcomputer and can explain it. 2) Can explain the difference between microcomputer and CPU.
		2nd	Confirmation the parformance on the electronic development board	Can develop a brief system using the LED on the electronic development board.
		3rd	Serial communication between PC and an electronic development board	Can perform a serial commnunicaton beween the PC and the electronic development borad.
		4th	Basic I/O processing and chattering	1) Can perform basic I/O processing using a push button switch and LED. 2) Can understand chattering and can explain the chattering removal method on hardware software both sides.
		5th	AD/DA conversion	Can understand a principle of the AD/DA conversion and can implement it on an electronic development board.
		6th	PWM control	1) Can understand the theory of PWM control and can explain it. 2) Can control brightness of the LED by PWM control.

		7th	LCD character liquid crystal module	1) Can understand the usage of the LCD character liquid crystal module and can implement it using an electronic development board.
		8th	7 segment LED indicater with dynamic lighting method	1) Can understand the principle of the dynamic lighting method and can explain it. 2) Can understand the control method of four columns of 7 segment LED indicater and can implement it using an electronic development board.
	4th Quarter	9th	Problem exercise: production of digital tester	1) Can make a system with AD/DA conversion. can make a system measuring the voltage more than the input voltage to the electronic development board using partical pressure circuit.
		10th	Interruption processing	1) Can understand processing and can give an explanation about I interruption. 2) Can understand the usage of the interruption on the electronic development board and can implement basic interruption processing.
		11th	Motor control with motor driver I	1) Can understand the principle of the H bridge circuit and can explain it. 2) Can understand the constitution of the H bridge circuit using the transistor and can explain it.
		12th	Motor control with motor driver II	1) Can understand the usage of the motor driver and can explain it. 2) Can control a motor using an electronic development board and motor driver.
		13th	Free study	Can set a problem by oneself and make it.
		14th	Free study	Can set a problem by oneself and make it.
		15th	Free study	Can set a problem by oneself and make it.
		16th	Grading confirmation, question evaluation questionnaire	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	100	0	100
Basic Ability	0	0	0	0	50	0	50
Technical Ability	0	0	0	0	50	0	50

Toyama College	Year	2020	Course Title	Electronic Circuits Ⅳ

Course Information

Course Code	0238	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Ito Nao		

Course Objectives

At the completion of this course, students will be able to:
1) Utilize the knowledge on software and hardware both sides to build a system.
2) Share a plan, a design and production in a group to perform it.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can utilize the knowledge on software and hardware both sides appropriately to build a system premeditatedly.	Can utilize the knowledge on software and hardware both sides to build a system.	cannot utilize the knowledge on software and hardware both sides to build a system.
Evaluation 2	Can share a plan, a design and production equally in a group.	Can share a plan, a design and production in a group.	Cannot share a plan, a design and production in a group.

Assigned Department Objectives

MCCコア科目
JABEE B5
ディプロマポリシー 1

Teaching Method

Outline	This course enhances the development of student's skill in building a system premeditatedly that includes the knowledge of software and hardware both sides to make form of own idea, through the design and production using the electronic development board. Students must perform design and production in a group, and must make a plan for own production, and must make a presentation about it at the end of this course.
Style	Lectures by teachers alone are conducted.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Idea of a product	Can work out an idea of a production.
		2nd	Plan for the product	Can make a plan for the production.
		3rd	Presentation about the idea and its plan	Can make a presentation about the idea and its plan.
		4th	Concrete specifications of the product	Can decide the concrete specifications of the production.
		5th	Concrete specifications of the product	Can decide the concrete specifications of the production.
		6th	Production based on specifications	Can produce the product based on specifications.
		7th	Production based on specifications	Can produce the product based on specifications.
		8th	Production based on specifications	Can produce the product based on specifications.
	4th Quarter	9th	Preparing a presentation document for next week	Can make a presentation document.
		10th	Presentation about the progress so far	Can make a presentation.
		11th	Production based on specifications	Can produce the product based on specifications.
		12th	Production based on specifications	Can produce the product based on specifications.
		13th	Production based on specifications	Can produce the product based on specifications.
		14th	Preparing a presentation document for next week	Can make a presentation document.
		15th	Presentation about the progress so far	Can make a presentation with a demonstration about own product.
		16th	Grading confirmation, question evaluation questionnaire	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	10	10	0	80	0	100
Basic Ability	0	5	5	0	40	0	50
Technical Ability	0	5	5	0	40	0	50

Toyama College	Year	2020	Course Title	Electromagnetic Wave Engineering

Course Information

Course Code	0239	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Shina Toru		

Course Objectives

At the completion of this course, students will be able to

(1) Calculate the inductance and magnetic energy
(2) Expalin the basic terms of electromagnetic plane waves and polarization
(3) Explain the Maxwell equations

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can calculate the inductance and magnetic energy almost perfectly.	Can calculate the inductance and magnetic energy correctly.	Can't calculate the inductance and magnetic energy.
Evaluation 2	Can explain the basic terms of electromagnetic plane waves and polarization alomost perfectly.	Can explain the basic terms of electromagnetic plane waves and polarization correctly.	Can't explain the basic terms of electromagnetic plane waves and polarization.
Evaluation 3	Can explain the Maxwell equations almost perfectly.	Can explain the Maxwell equations correctly.	Can't explain the Maxwell equations.

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	In this course, you will learn about the principles, properties and fundamental physics of electromagnetic waves.
Style	For the purpose of understanding the Electromagnetic waves, lectures and exercises faciliate the learning of principles and examples.
Notice	The recognition of credit requires 60 points or more rating. Based on the knowledge of basic electromagnetics and wave.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Inductance	To explain inductance
		2nd	Calculation of inductance	To calculation of inductance
		3rd	Magnetic energy	To explain magnetic energy
		4th	Displacement current and Maxwell's law	To explain displacement current and Maxwell's law
		5th	Maxwell's law	To explain Maxwell's law
		6th	Differential Maxwell equation	To explain differential Maxwell equation
		7th	Integral Maxwell equation	To explain integral Maxwell equation
		8th	Boundary conditions	To explain boundary conditions
	2nd Quarter	9th	Generation of electromagnetic waves	To explain generation of electromagnetic waves
		10th	Wave equations	To explain wave equations
		11th	Wave functions	To explain wave functions
		12th	Plane electromagnetic waves Reflection and refraction	To explain plane electromagnetic wave, reflection and refraction
		13th	Polarization Energy of the electromagnetic waves	To explain polarization and energy of the electromagnetic waves
		14th	Comprehensive exercise	Comprehensive exercise
		15th	Final exam	Final exam
		16th	Return and explanation of answer sheets, evaluation and confirmation of results	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	0	0	0	0	40	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	60	0	0	0	0	40	100

Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Applied Electromagnetic Systems

Course Information

Course Code	0240	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	Distributed constant line, Smith chart,		
Instructor	Mizumoto Iwao		

Course Objectives

Distributed constant line, Smith chart,Learn impedance matching method using immittance chart

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1Understand the distributed constant line	Derivation of distributed constant line equation using differential equation	The differential constant line equation can be described using differential equations.	I can not understand the distributed constant line equation using differential equations.
Evaluation 2 You can use the Smith chart and the immittance chart.	You can use the Smith chart and the immittance chart.	Explain the Smith chart and the immittance chart.	I can not explain the Smith chart and the immittance chart.
Evaluation 3 Matching values can be determined from calculations and charts	Matching values can be determined from calculations and charts	Explaining how to find matching values from calculations and charts	It can not be explained that finding the value of matching from calculation and chart

Assigned Department Objectives

JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	Distributed constant line, Smith chart,Learn impedance matching method using immittance chart
Style	Do exercises
Notice	

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance and the basis of distributed constant lines	Solve a differential equation
		2nd	Reflection coefficient	Calculation of reflection coefficient
		3rd	Standing wave ratio	calucuration of standing wave ratio
		4th	Line impedance 1	Line impedance 1
		5th	Line impedance 2	Line impedance 2
		6th	Line impedance 3	Line impedance 3
		7th	Smith chart basics	Smith chart basics
		8th	Smith chart exercises	Smith chart exercises
	4th Quarter	9th	basic of immittance chart	basic of immittance chart
		10th	Exercise of immittance chart	Exercise of immittance chart
		11th	Impedance matching exercises 1	Impedance matching exercises
		12th	Impedance matching exercises 2	Impedance matching exercises
		13th	Basics of matching using immittance chart	Basics of matching using immittance chart
		14th	Matching exercises using immittance charts	Matching exercises using immittance charts
		15th	final exam	final exam
		16th	Answer and commentary	Answer and commentary

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	200	0	0	0	0	0	200
Basic Ability	100	0	0	0	0	0	100
Technical Ability	50	0	0	0	0	0	50
Interdisciplinary Ability	50	0	0	0	0	0	50

Toyama College	Year	2020	Course Title	Sensor Engineering

Course Information

Course Code	0242	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	Know how various sensors work. Learn how to detect signals using electronic circuits. Applied senspr.		
Instructor	Mizumoto Iwao		

Course Objectives

The temperature is actually measured using a sensor. Create a circuit to extract the electrical signal from the sensor. Manufacture an actuator drive circuit.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1Operating principle of sensor	I can fully explain the principle of the sensor	I explain the principle of the sensor	I can't explain principle of sensor
Evaluation 2Acquisition of sensor signal	Enough to explain the signal acquisition circuit	explain the signal acquisition circuit	I can't explain the signal acquisition circuits.
Evaluation 3System construction	Sensor application system can be built freely.	Sensor application system can be built	Sensor application system can not be built freely.

Assigned Department Objectives

MCCコア科目
JABEE B2
ディプロマポリシー 1

Teaching Method

Outline	The temperature is actually measured using a sensor. Create a circuit to extract the electrical signal from the sensor. Manufacture an actuator drive circuit
Style	Lecture and experimental training
Notice	

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Basic and Overview of Sensor System	Basic and Overview of Sensor System
		2nd	Fundamentals of electrical circuits	set up a voltage equation
		3rd	Perform temperature measurement using a thermistor	Perform temperature measurement using a thermistor
		4th	Fundamentals of op amps	Fundamentals of op amps
		5th	Basics of actuator drive circuit	Basics of actuator drive circuit
		6th	System construction of temperature detection blower 1	System construction of temperature detection blower 1
		7th	System construction of temperature detection blower 2	System construction of temperature detection blower 2
		8th	Turn on 3 types of LED by temperature detection	Turn on 3 types of LED by temperature detection
	2nd Quarter	9th	Temperature measurement using a microcomputer	Temperature measurement using a microcomputer
		10th	Actuator drive circuit using microcomputer	Actuator drive circuit using microcomputer
		11th	Fundamentals of instrumentation amplifier	Fundamentals of instrumentation amplifier
		12th	Application of instrumentation amplifier	Application of instrumentation amplifier
		13th	Basics of optical sensor	Basics of light sensor
		14th	Application of optical sensor	Application of optical sensor
		15th	Final exam	Final exam
		16th	Answer and commentary	Answer and commentary

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	200	0	0	0	0	0	200
Basic Ability	100	0	0	0	0	0	100
Technical Ability	50	0	0	0	0	0	50
Interdisciplinary Ability	50	0	0	0	0	0	50

Toyama College	Year	2020	Course Title	Digital Signal Processing Ⅰ

Course Information

Course Code	0243	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Oguma Hiroshi		

Course Objectives

ディジタル信号処理の基礎（フーリエ級数展開、フーリエ変換、ラプラス変換、サンプリング定理、 z 変換、畳み込み積分）を理解し、数式の上で示された事柄を処理できる。

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
サンプリング定理/AD変換	AD変換を行うにあたりサンプリング定理および量子化と量子化雑音について理解している.	サンプリング定理について理解している.	サンプリング定理について理解していない.
z変換	ブロック線図と伝達関数の関係を理解し, 差分方程式からz変換によりz領域に変換できる.	差分方程式からz変換によりz領域に変換できる.	差分方程式からz変換によりz領域に変換できない.
畳み込み	インパルス応答について理解し, ディジタル領域における畳み込み積分に展開できる.	ディジタル領域における畳み込み積分に展開できる.	ディジタル領域における畳み込み積分ができない.

Assigned Department Objectives

JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	現代のマルチメディア社会では、音声、映像や各種センサ信号などの情報がディジタル化され、その通信、加工、処理、蓄積はコンピュータを使ったディジタル処理により行われ、必須のディジタル信号処理技術となっている。ディジタル信号処理の基礎（サンプリング、 z 変換、離散フーリエ変換、ディジタルフィルタ）を理解する。この科目は企業等で無線通信システム開発を行っていた教員が、その経験を活かしディジタル信号処理の内容を講義形式で授業を行うものである。
Style	授業改善策：アナログからディジタルへとシームレスにつながるように講義する． 授業計画は，学生の理解度に応じて変更する場合がある。学生による「授業評価アンケート」の結果に対応して授業改善を進める。
Notice	追認試験について：評価が60点に満たない者に対して，願い出しかつ十分な学習が認められる場合追認試験を行う．内容は中間・期末で60点に満たなかった範囲．その結果，単位の修得が認められた場合，総合の評価を60点とする．評価方法及び評価基準は本試験と同じにする.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	学習ガイダンス、信号とシステム：信号・システムの表現	信号とシステムの工学的表現を理解できる。
		2nd	信号とシステム：線形システム	線形システムでは入出力関係に重ね合わせが成り立つ。分解のための基本的な信号としてインパルス波（δ関数）を考えることができる。
		3rd	信号とｼｽﾃﾑ：ｲﾝﾊﾟﾙｽ応答、連続時間ｼｽﾃﾑのｺﾝﾎﾞﾘｭｰｼｮﾝ	インパルス応答とコンボリューション（畳込み積分）の関係を説明できる
		4th	信号とシステム：周波数応答と連続時間システムの伝達関数	フーリエ級数展開を説明できる。
		5th	信号とｼｽﾃﾑ：ﾌｰﾘｴ変換、ﾌｰﾘｴ変換対の定義、ﾌｰﾘｴ変換の解釈	フーリエ変換の特徴を説明できる。
		6th	信号とシステム：フーリエ変換の諸定理、周波数領域での考え方	線形な信号処理における強力な道具であるフーリエ変換について、幾つかの重要な性質を表すことができる。
		7th	演習問題	演習を通じて1回～6回の内容の理解する。
		8th	アナログからディジタルへ：サンプリングとサンプリング定理	アナログ信号にサンプリングによる時間的な離散化を施してディジタル信号へ変換する過程を設営説明できる。
	2nd Quarter	9th	ｱﾅﾛｸﾞからﾃﾞｨｼﾞﾀﾙへ：信号の復元、帯域信号のｻﾝﾌﾟﾘﾝｸﾞ定理	サンプリング定理を説明できる。
		10th	アナログからディジタルへ:量子化と量子化雑音	量子化してディジタル信号へ変換する処理であることを理解している。
		11th	z変換	差分方程式をz変換あるいは逆z変換の処理を行える。
		12th	伝達関数	ブロック線図から伝達関数を導出できる。
		13th	ディジタルの畳み込み	ディジタル領域における畳み込み積分について計算できる。
		14th	演習問題	演習を通じて8回～13回の内容を理解する。
		15th	期末試験	1回～14回までの内容について試験を実施
		16th	成績評価・確認	成績評価・確認および授業評価アンケートの実施

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

Toyama College	Year	2020	Course Title	Technical English

Course Information

Course Code	0250	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	Distribute the lecture materials created by the teacher in charge every time		
Instructor	Matoba Ryuichi		

Course Objectives

The primary objective of the course is to acquire the following skills:
- To understand characteristics of engineering English.
- To understand construction of abstract, and be able to write abstract of graduation research.
- To be able to give a graduation research presentation in English.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	To understand characteristics of engineering English very well	To understand characteristics of engineering English	Not to understand characteristics of engineering English
Evaluation 2	To understand construction of abstract very well, and be able to write abstract of graduation research perfectly	To understand construction of abstract, and be able to write abstract of graduation research	Not to understand construction of abstract, and be able to write abstract of graduation research
Evaluation 3	To be able to give a graduation research presentation in English very well	To be able to give a graduation research presentation in English	To be unable to give a graduation research presentation in English

Assigned Department Objectives

JABEE C1
ディプロマポリシー 3

Teaching Method

Outline	Writing abstract in English, technical writing, and presentation in English
Style	Class style: Lecture and drills Evaluation: Homework, quiz, presentation, and final exam
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance and writing abstract in English 1 (lecture and drill)	Students can write English sentences with 3C(Clear, Concise, Correct).
		2nd	Writing abstract in English 2 (lecture and drill)	Students understand construction of technical paper and abstract.
		3rd	Writing abstract in English 3 (lecture and drill)	Students can rewrite normal English sentences to technical English sentences.
		4th	Writing abstract in English 4 (lecture and drill)	Students write their own research abstract.
		5th	Writing abstract in English 5 (lecture and drill)	Students finish up writing their own research abstract.
		6th	Making research briefing poster 1 (lecture)	Students understand how to represent their own research in one poster.
		7th	Making research briefing poster 2 (drill)	Students finish up making their own research poster.
		8th	Presentation using research briefing poster 1 (drill)	Students give a presentation using a poster.
	4th Quarter	9th	Presentation using research briefing poster 2 (drill)	Students give a presentation using a poster.
		10th	Presentation in English 1 (lecture)	Students understand how to represent their own research using slides.
		11th	Presentation in English 2 (lecture and drill)	Student can explain graph, table, figure orally, also finish up making their own research presentation slides.
		12th	Presentation in English 3 (drill)	Students give a presentation using slides.
		13th	Presentation in English 4 (drill)	Students give a presentation using slides.
		14th	Presentation in English 5 (drill)	Students give a presentation using slides.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the final exam

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	20	0	0	0	10	100
Basic Ability	70	20	0	0	0	10	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer-Based Measurement Systems Ⅰ

Course Information

Course Code	0251	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Yoshii Yotsumi		

Course Objectives

At the completion of this course, students will be able to
1) Explain the basic data processing method to understand errors and their causes by understanding errors and causes of measurement data.
2) Qualitatively explain the flow of analog digital conversion processing in the element part.
3) Calculate the uncertainty in basic measurements using budget sheets

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can explain the basic data processing method to understand errors and their causes by understanding errors and causes of measurement data almost perectly	Students can explain the basic data processing method to understand errors and their causes by understanding errors and causes of measurement data correctly	Students can't explain the basic data processing method to understand errors and their causes by understanding errors and causes of measurement data.
Evaluation 2	Students can qualitatively explain the flow of analog digital conversion processing in each part almost perectly	Students can qualitatively explain the flow of analog digital conversion processing in each part correctly	Students can't qualitatively explain the flow of analog digital conversion processing in each part.
Evaluation 3	Students can calculate the uncertainty in basic measurements using budget sheets almost perectly	Students can calculate the uncertainty in basic measurements using budget sheets correctly	Students can't calculate the uncertainty in basic measurements using budget sheets

Assigned Department Objectives

MCCコア科目
JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	Learning Objectives (Aim of Class) Learn the basic measurement data and error analysis in order to understand measuring instruments.
Style	Lectures by teachers alone are conducted.
Notice	The portfolio is evaluated as 20%, and the test is evaluated as 80%. A person who has a rating of less than 60 points may be subjected to an approval test by a request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance Review Related Topics	Can explain the knowledge of errors and significant figures that have been learned so far.
		2nd	Importance of error analysis	Can explain why error analysis is important in the measurement.
		3rd	Interpretation of measurement results	Can analyze and interpret the measured results in any procedure.
		4th	Linear regression and error estimation	Can explain the best estimate of the function relationship with function relation and the error.
		5th	Type and standard of measurement method	Can explain a variety of measurement methods and standards for measuring measurements.
		6th	Research	Can calculate values and errors using specific measurement examples.
		7th	Analog Digital Conversion 1	Can explain sampling theorem, Parseval theorem, Fourier transform, and window functions.
		8th	Analog Digital Conversion 2	Can explain the review of sampling theorem and low pass filter.
	2nd Quarter	9th	Analog Digital Conversion 3	Can explain the technique of AD conversion, the number of quantization bits, and the quantization error.
		10th	Signal Processing 1	Can explain the effectiveness of signal processing in digital measurements and the moving average method.
		11th	Signal Processing 2	Can learn and exercise on Fourier transforms.
		12th	Uncertainty 1	Can explain the concept and standard of uncertainty, including accuracy, error, etc.
		13th	Uncertainty 2	Can derive uncertainty by using budget sheets.
		14th	Cause of the error	Can account for systematic errors, accidental error, and number of effective digits.

		15th	Final exam	Can explain measurement, signal signal processing, uncertainty, and perform related calculations.
		16th	Return of answer sheets, explanation, class questionnaire, etc.	Evaluation and confirmation

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Ability	80	0	0	0	20	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer-Based Measurement Systems Ⅱ

Course Information

Course Code	0252	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Yoshii Yotsumi		

Course Objectives

At the completion of this course, students will be able to
1) Organize known knowledge and unknown knowledge on the given issues and make a path to solutions (plan)
2) Search for and gather information on unknown knowledge based on plans
3) Solve problems by using the information and technology obtained.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Students can organize known knowledge and unknown knowledge on the given issues and make a path to solutions (plan) almost perfectly	Students can organize known knowledge and unknown knowledge on the given issues and make a path to solutions (plan) correctly	Students can't organize known knowledge and unknown knowledge on the given issues and make a path to solutions (plan)
Evaluation 2	Students can search for and gather information on unknown knowledge based on plans almost perfectly	Students can search for and gather information on unknown knowledge based on plans correctly	Students can't search for and gather information on unknown knowledge based on plans
Evaluation 3	Students can solve problems by using the obtained information and technology almost perfectly	Students can solve problems by using the obtained information and technology correctly	Students can't solve problems by using the obtained information and technology .

Assigned Department Objectives

JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	Learning Objectives (Aim of Class) Based on knowledge such as signal processing and so forth, we will study the analysis and processing of measurement data using a computer. We learn how to construct algorithms for data processing by programming exercise. The purpose of this course is to enable a simple program to perform waveform processing, and to obtain the basis of the processing method of numerical data that can be applied to graduation studies and so on.
Style	Lectures by teachers alone are conducted. We will work on each of the issues in the group, and confirm the noise removal, peak detection, FFT operation, etc. of the signal waveform obtained from the measurement data in the engineering field, and acquire the basis of signal processing in many fields. Task 1 : Math Fill Problem (Team Work Practice) Task 2 : Analyzing Electrocardiogram (ECG) Signals Task 3 : Voice Authentication Task 4 : Curve (Peak) Fit
Notice	The portfolio is evaluated as 70%, and the test is evaluated as 30%.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th	Task 1 : The problem of math	You can solve problems using the programming technology that you have learned.
		11th	Task 2 : Analysis of electrocardiogram (ECG) signals	The characteristics of the signal can be extracted.
		12th	Task 3 : Voice Authentication	The characteristics of the signal can be compared.
		13th	Task 4 : Curve (Beak) Fit	Multiple signals can be separated.
		14th	Review efforts at each stage of the resolution process	You can learn the characteristics of your problem-solving ability.
		15th	Term test	The problem of each problem can be clarified.
		16th	Return of papers, explanations, and class questionnaires	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total

Subtotal	30	0	0	0	70	0	100
Basic Ability	30	0	0	0	70	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer Networks Ⅰ

Course Information

Course Code	0253	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Aso Tsukasa		

Course Objectives

At the completion of this course, student will be able to:
1) Understand the operation of TCP/IP network.
2) Understand the knowlege required for manageing network system.
3) Understand the network design and implementation.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand the operation of TCP/IP networks. perfectly.	Can understand the operation of TCP/IP networks correctly.	Can't understand the operation of TCP/IP networks. correctly.
Evaluation 2	Can understand the knowlege required for managing network system perfectly.	Can understand the knowlege required for managing network systems correctly.	Can't understand the knowlege required for managing network system correctly.
Evaluation 3	Can understand the network design and implementation perfectly.	Can understand the network design and implementation correctly.	Can't understand the network design and implementation correctly.

Assigned Department Objectives

MCCコア科目
JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	This lecture provides practical knwolege of networking technology which is required as a network administrator for design and operation networking. The lecture explains practical technologies and example cases in network systems.
Style	The lecture explains example cases in order to understand the usage of learning knowlege of the actual systems.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance	Can understand the lecture structure and the goals.
		2nd	Basis of networking and TCP/IP	Can understand the overview of TCP/IP netoworking model.
		3rd	Basis of ethernet LAN	Can understand the Ethernet LAN in terms of standerized hardwares and control method.
		4th	Overview of layer 2 switch	Can understand the role of layer 2 switch in terms of frame control functions.
		5th	IPv4 addressing(1)	Can understand the structure of IP address in terms of network address, host address, netmask.
		6th	IPv4 addressing(2)	Can understand the subnetting in IPv4.
		7th	TCP and UDP	Can understand the TCP and UDP.
		8th	Excercise and practice	Can understand and recover the weak points of study.
	4th Quarter	9th	Virtual LAN	Can understand the VLAN and its advantages.
		10th	Routing	Can understand the packet routing and the routing table.
		11th	Static routing(1)	Can understand the role of static routing.
		12th	Static routing(2)	Can understand the design of routing table by using the static-route.
		13th	Dynamic routing	Can understand the overview of dynamic routing protocols.
		14th	Exercise and practice	Can understand the practical case in packet routing.
		15th	Final exam	Can understand the conprehensive networking system with L2 and L3 switches.
		16th	Comments to the final exam, class questionnaire etc.	Can understand and recover the weak points of study.

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	20	0	0	0	0	100
Basic Ability	50	10	0	0	0	0	60
Technical Ability	20	10	0	0	0	0	30
Interdisciplinary Ability	10	0	0	0	0	0	10

Toyama College	Year	2020	Course Title	Computer Networks Ⅱ

Course Information

Course Code	0254	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Aso Tsukasa		

Course Objectives

At the completion of this course, student will be able to:
1) Understand the usage of network tool for checking the status of networking.
2) Understand the basic knowledge on network devices to apply for network operations.
3) Understand the basis of administration of networking.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can understand the usage of network tool for checking the status of networking perfectly.	Can understand the usage of network tools for checking the status of networking correctly.	Can't understand the usage of network tool for checking the status of networking correctly.
Evaluation 2	Can understand the basic knowledge of network devices to apply for network operations perfectly.	Can understand the basic knowledge of network devices to apply for network operations correctly.	Can't understand the basic knowledge of network devices to apply for network operations correctly.
Evaluation 3	Can understand the basis of administration of networking perfectly.	Can understand the basis of administration of networking correctly.	Can't understand the basis of administration of networking correctly.

Assigned Department Objectives

MCCコア科目
JABEE B4
ディプロマポリシー 1

Teaching Method

Outline	This lecture provides the usage of network tools and network devices for constructing TCP/IP networks. At first, the network tools are introduced to check the status of the networks. Secondly, simple networks with VLAN are constructed as exercises, for the purpose of learning about IP addressing and the connections of network devices. Then the networks with L2 and L3 switches are constructed as practical exercises to learn about the actual cases of routing table assignments. These exercises are conducted with actual network devices to learn the knowledge and the skills necessary for network management.
Style	The lecture includes exercises and practice of programing, in order to check the students' understanding.
Notice	The recognition of credit requires 60 points or more rating. A person who has a rating of less than 60 points may be subjected to an approval test by request. As the result of the approval test, the evaluation is made to be 60 points in the person who the mastery of the unit is recognized.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance	Can understand the lecture structure and the goals.
		2nd	Network tools (1)	Can understant the usage of network tools for checking the status of devices.
		3rd	Network tools (2)	Can understand the meaning of the output from the network tools for troubleshooting.
		4th	Network construction (1)	Can understand the construction of simple network with L2 switch.
		5th	Network construction (2)	Can construct the simple network with L2 switch.
		6th	Network construction (3)	Can understand the role of VLAN and the practical way of VLAN networks.
		7th	Exercise and practice	Can understand the conprehensive network construction with L2 switch.
		8th	Midterm exam	Can understand the network construction and checking the network status.
	4th Quarter	9th	Network design (1)	Can understand the IP addressing.
		10th	Network design (2)	Can understand the IP addressing with L2 and L3 switch network.
		11th	Network design (3)	Can understand the design of routing-table in the complex network structure.
		12th	Network design (4)	Can understand the design of routing-table in the complex network structure.
		13th	Network design (5)	Can understand the dynamic routing protocols.
		14th	Exercise and practice	Can understand and recover the weak points of study.
		15th	Final exam	Can understand the conprehensive networking system with L2 and L3 switches.

		16th	Comments to the final exam, class questionnaire etc.	Can understand and recover the weak points of study.

Evaluation Method and Weight (%)

	Examination	Report	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	20	0	0	0	0	100
Basic Ability	30	10	0	0	0	0	40
Technical Ability	40	10	0	0	0	0	50
Interdisciplinary Ability	10	0	0	0	0	0	10

Toyama College	Year	2020	Course Title	Software Engineering Ⅰ

Course Information

Course Code	0255	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Hayase Yoshikazu		

Course Objectives

The lecture aims to understand the basic concepts of software engineering which is an academic field trying to systematize software development.
1. Students understand the basic concepts of software engineering.
2. Students understand technical terms related to software engineering.
3. Understand and can describe the overview of the software process.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Understand and can describe basic concepts of software engineering.	Understand the basic concepts of software engineering.	Does not understand the basic concepts of software engineering.
Evaluation 2	Understand and can describe technical terms related to software engineering.	Understand technical terms related to software engineering.	Does not understand technical terms related to software engineering.
Evaluation 3	Understand and can describe the overview of the software process.	Understand the overview of the software process.	Does not understand the overview of the software process.

Assigned Department Objectives

JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	Lectures on the outline of analysis and design in software development. Using a simple example, exercises on software development include describing various notations, methods and simple system models.
Style	Lecture and exercise
Notice	Require the score points of 60 or more to reach the evaluation standard of JABEE. Those whose evaluation is less than 60 points can receive a follow-up program by submitting the approval test application. As a result of the follow-up program, the score will be 60 points if certified. Follow-up program will differ depending on contents that have not been certified, so please check in advance.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Understand the history of software and software engineering.
		2nd	Overview of software development	Understand the outline of processes in software development.
		3rd	Software development models	Understand representative examples of processes in software development.
		4th	Software process evaluation	Understand the evaluation method of the software process.
		5th	Development plan	Understand the development plan phase in the software development process.
		6th	Development man-hours	Understand the estimate of the development man-hours required for the development plan.
		7th	Requirements analysis / Requirements definition	Understand the phase of requirements analysis and requirements definition which is the software development process.
		8th	Exercise: Requirements analysis / Requirements definition	Understand adapt several techniques for requirements analysis and requirements definition.
	2nd Quarter	9th	Models in software	Understand models of software.
		10th	UML	Understand the outline of the unified modeling language UML which is adopted standardly as a notation for analysis and design in software developments.
		11th	Exercise: UML (1)	Understand system using use case diagrams, class diagrams, etc.
		12th	Exercise: UML (2)	Understand UML for simple object-oriented development.
		13th	Outline of object-oriented development	Understand the outline of object-oriented technology.
		14th	Exercise: UML in object-oriented development	Understand adapt UML for simple object-oriented development.
		15th	Final exam	Confirm the degree of understanding of the software engineering basis.

		16th	Grade evaluation / confirmation	Explanation of answer example and returning the final exam

Evaluation Method and Weight (%)

	Examination	Exercise	Total
Subtotal	60	40	100
Basic Ability	60	40	100

Toyama College	Year	2020	Course Title	Software Engineering Ⅱ

Course Information

Course Code	0256	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Hayase Yoshikazu		

Course Objectives

The lecture aims to understand the basic knowledge necessary for software development.
1. Understand the knowledge necessary for software development.
2. Understand software design basis.
3. Understand software development basis.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Understand and can describe the knowledge necessary for software development.	Understand the knowledge necessary for software development.	Does not understand the knowledge necessary for software development.
Evaluation 2	Understand software design and can design simple software.	Understand the basis of software design.	Does not understand the basis of software design.
Evaluation 3	Understand software development and develop simple software.	Understand the basis of software development.	Does not understand the basis of software development.

Assigned Department Objectives

MCCコア科目
JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	Using simple examples, master basic knowledge necessary for concrete software development. Based on the contents learned in software engineering I, students will study external design, internal design, program design, etc. They will also learn about software testing and quality.
Style	Lecture and exercise
Notice	Require the score points of 60 or more to reach the evaluation standard of JABEE.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance	Understand the outline of practical development based on the contents learned in software engineering I.
		2nd	External design	Understand the outline of the design of functions required for the software.
		3rd	Exercise: External design	Understand external designs using UML for simple examples.
		4th	Internal design	Understand the outline of the internal design for realizing the software based on the external design.
		5th	Exercise: Internal design	Understand internal designs using UML for simple examples.
		6th	Program design	Understand the outline of program design for creating concise, easy to understand and efficient.
		7th	Exercise: Program design	Understand program designs for simple examples.
		8th	Operation and maintenance	Understand the outline of operation and maintenance of completed software.
	4th Quarter	9th	Software validation	Understand the outline of the work to confirm that software is the required quality and reliable.
		10th	Program verification	Understand the outline of test techniques as program verification technology.
		11th	Selection of test case	Understand the outline of the tasks which correctly investigate the behavior of the system.
		12th	Exercise: Software development (1)	Understand development plan, development man-hour estimate, requirements analysis / definition in simple exercises.
		13th	Exercise: Software development (2)	Understand external design, internal design, program design with simple exercises.
		14th	Exercise: Software development (3)	Understand software implementation and evaluation by test with simple exercises.
		15th	Final exam	Confirm the degree of understanding of the software engineering basis.
		16th	Grade evaluation / confirmation	Explanation of answer example and returning the final exam.

Evaluation Method and Weight (%)

	Examination	Exercise	Mutual Evaluation	Total
Subtotal	60	35	5	100
Basic Ability	60	35	5	100

Toyama College	Year	2020	Course Title	Media Engineering I

Course Information

Course Code	0257	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Shina Toru		

Course Objectives

At the completion of this course, students will be able to

(1) Explain brightness adaptation and binarization.
(2) Explain spatial filtering and enhancement in the frequncy domain.
(3) Explain image compression.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain brightness adaptation and binarization almost perfectly.	Can explain brightness adaptation and binarization correctly.	Can't explain brightness adaptation and binarization.
Evaluation 2	Can explain spatial filtering and enhancement in the frequncy domain almost perfectly.	Can explain spatial filtering and enhancement in the frequncy domain correctly.	Can't explain spatial filtering and enhancement in the frequncy domain.
Evaluation 3	Can explain image compression almost perfectly.	Can explain image compression correctly.	Can't explain image compression.

Assigned Department Objectives

MCCコア科目
JABEE B5
ディプロマポリシー 1

Teaching Method

Outline	In this course, you will learn about the principles and fundamental algorithms of image processing.
Style	For the purpose of understanding image processing and programming in C language.
Notice	The recognition of credit requires 60 points or more rating. Based on the knowledge of basic C language.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	To explain the outline.
		2nd	Brightness adaptation 1	To expain brightness adaptation
		3rd	Brightness adaptation 2	To expain brightness adaptation
		4th	Binarization 1	To expain binarization
		5th	Binarization 2	To expain binarization
		6th	Binarization 3	To expain binarization
		7th	Spatial filtering 1	To expain spatial filtering
		8th	Spatial filtering 2	To expain spatial filtering
	2nd Quarter	9th	Enhancement in the frequncy domain 1	To expain enhancement in the frequncy domain
		10th	Enhancement in the frequncy domain 2	To expain enhancement in the frequncy domain
		11th	Enhancement in the frequncy domain 3	To expain enhancement in the frequncy domain
		12th	Enhancement in the frequncy domain 4	To expain enhancement in the frequncy domain
		13th	Image compression 1	To expain image compression
		14th	Image compression 2	To expain image compression
		15th	Final exam	Final exam
		16th	Return and explanation of answer sheets, evaluation and confirmation of results	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	0	0	0	0	40	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	60	0	0	0	0	40	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Media Engineering Ⅱ

Course Information

Course Code	0258	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Shina Toru		

Course Objectives

At the completion of this course, students will be able to

(1) Explain encryption and binarization.
(2) Explain recognition of a 3 dimensional shape and text.
(3) Explain video processing and image recognition.

Rubric

	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Evaluation 1	Can explain encryption and binarization almost perfectly.	Can explain encryption and binarization correctly.	Can't explain encryption and binarization.
Evaluation 2	Can explain recognition of a 3 dimensional shape and text almost perfectly.	Can explain recognition of a 4 dimensional shape and text correctly.	Can't explain recognition of a 5 dimensional shape and text.
Evaluation 3	Can explain video processing and image recognition almost perfectly.	Can explain video processing and image recognition correctly.	Can't explain video processing and image recognition.

Assigned Department Objectives

JABEE B5
ディプロマポリシー 1

Teaching Method

Outline	In this course, you will learn about the principles and fundamental algorithms of image processing.
Style	For the purpose of understanding image processing and programming in C language.
Notice	The recognition of credit requires 60 points or more rating. Based on the knowledge of basic C language.

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Encryption	To explain encryption
		2nd	Binarization 1	To explain binarization
		3rd	Binarization 2	To explain binarization
		4th	Recognition of a 3 dimensional shape 1	To explain recognition of a 3 dimensional shape
		5th	Recognition of a 3 dimensional shape 2	To explain recognition of a 3 dimensional shape
		6th	Recognition of a 3 dimensional shape 3	To explain recognition of a 3 dimensional shape
		7th	Video processing 1	To explain video processing
		8th	Video processing 2	To explain video processing
	4th Quarter	9th	Video processing 3	To explain video processing
		10th	Recognizing text and shapes 1	To explain recognizing text and shapes
		11th	Recognizing text and shapes 2	To explain recognizing text and shapes
		12th	Recognition and interpretation 1	To explain recognition and interpretation
		13th	Recognition and interpretation 2	To explain recognition and interpretation
		14th	Color image processing	To explain color image processing
		15th	Final exam	Final exam
		16th	Return and explanation of answer sheets, evaluation and confirmation of results	Summarize the study content and confirm grades.

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	0	0	0	0	40	100
Basic Ability	0	0	0	0	0	0	0
Technical Ability	60	0	0	0	0	40	100
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer Engineering Ⅰ

Course Information

Course Code	0259	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Furuyama Shoichi		

Course Objectives

Understanding of numerical integral, ordinary differential equations, algorithms necessary for solving partial differential equations (c 3)
Acquisition of programming skills necessary for numerical calculation (d)
60 points or more are necessary to reach the evaluation criteria of JABEE

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Basics of Interpolation	Totally understandings.	Understanding	Not understood
Theory of Interpolation	Students understand the theory with programming.	Students understand the theory	Students can't understand the theory.
Application of Interpolation	Students can discuss the result of interpolation theory with programming.		

Assigned Department Objectives

MCCコア科目
JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	In this subject, we learn about algorithms necessary for numerical calculation (c3) Moreover, numerical calculation by C language is used in a wide range of fields such as natural science, engineering, social science and others. Learn how to create programs (d).
Style	Mathematical theory deepens understanding with emphasis on concrete calculation method. The evaluation criteria of the reevaluation test conform to this test. Those whose unit credits have been confirmed in the re-certification test can receive a re-certification examination if desired by those who do not satisfy the 60-point evaluation whose evaluation is 60 points.
Notice	Overall evaluation at final exam (70%), programming exercise and report (30%)

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Interpolation	Understandings for Lagrange method.
		2nd	Interpolation	Understandings for Difference of Newton
		3rd	Interpolation	Understandings for differential equations
		4th	Interpolation	Understandings for Newton's forward propagation method
		5th	Interpolation	Application of Interpolation method
		6th	Approximation curve	Understandings spline method
		7th	Approximation curve	Understandings of Least Square Method
		8th	Approximation curve	Application for approximation curve
	2nd Quarter	9th	Chevyshev Interpolation	Understandings of Cheveshev polynomial equation
		10th	Chevyshev Interpolation	Approximation equation by Chevyshev polynomials
		11th	Chevyshev Interpolation	Understandings of Chevyshev Interpolation
		12th	Chevyshev Interpolation	Understandings for Legendre polynomials
		13th	Chevyshev Interpolation	Application of Chevyshev Interpolation
		14th	exercises	exercises whole term
		15th	final examination	final examination
		16th	results for final examination	returning the final examination

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	105	30	0	0	0	0	135
Basic Ability	70	0	0	0	0	0	70
Technical Ability	35	30	0	0	0	0	65
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Computer Engineering Ⅱ

Course Information

Course Code	0260	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	1
Textbook and/or Teaching Materials			
Instructor	Furuyama Shoichi		

Course Objectives

Understanding algorithms necessary for numerical integration (c3)
Acquisition of programming skills necessary for numerical calculation (d)
60 points or more are necessary to reach the evaluation criteria of JABEE

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Understandings for numerical integration method	Students can use the numerical integration method with programming.	Students can use numerical integration method.	Students can't use numerical integration method.
Understandings for numerical differential equation	Students can use the numerical differential equation with programming.	Students can use numerical differential equations.	Students can't use numerical differential equations.
Understandings for Eigenvalues	Students can calculate the eigenvalues with programming.	Students can calculate the eigenvalues on computers.	Students can't calculate the eigenvalues.

Assigned Department Objectives

MCCコア科目
JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	In this subject, we learn about calculation algorithms related to numerical integral, differential equation, and eigenvalue problem (c3). Also, learn how to create numerical calculation program in C language (d).
Style	Promote understanding by emphasizing concrete calculation methods. Those whose evaluation is less than 60 points can be subjected to the approval test by request. Evaluation criteria of the approval test conform to this test. For persons who are allowed to earn credits in the certification examination, the evaluation shall be 60 points.
Notice	Comprehensive evaluation by final exam (70%), programming exercise and report (30%).

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Numerical integration	Trapezoid method
		2nd	Numerical integration	Simpson's formula
		3rd	Numerical integration	Gauss method
		4th	Numerical integration	Double exponential function type formula
		5th	Numerical integration	double integration
		6th	Numerical differential equation	Runge-Kutta method
		7th	Numerical differential equation	simultaneous equation and 2nd order differential equation
		8th	Numerical partial differential equation	partial differential equation
	4th Quarter	9th	Numerical partial differential equation	partial differential equation
		10th	Numerical partial differential equation	partial differential equation
		11th	Eigenvalue problem	Exponentiation method
		12th	Eigenvalue problem	Jacobi's method
		13th	review and exercises	numerical integration and differential equations' methods
		14th	review and exercises	eigenvalue
		15th	Final examination	Final examination
		16th	Return the final examination	Return the final examination

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	30	0	0	0	0	100
Basic Ability	35	30	0	0	0	0	65
Technical Ability	35	0	0	0	0	0	35
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Information Theory

Course Information

Course Code	0261	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	Hayase Yoshikazu		

Course Objectives

Aims to learn the basics of information theory and understand the concept and definition of information quantity.
1. Understand a concept and a definition of the information.
2. Understand the model and encoding of information sources.
3. Understand the model and encoding of a communication path.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	Understand a concept and a definition of the information and can calculate.	Understand the concept and a definition of information.	Does not understand the concept and definition of information.
Evaluation 2	Understand and can describe the model and encoding of information sources.	Understand the model and encoding of information sources.	Does not understand the model and encoding of information sources.
Evaluation 3	Understand and can describe the model and encoding of a communication path.	Understand the model and encoding of a communication path.	Does not understand the model and encoding of a communication path.

Assigned Department Objectives

MCCコア科目
JABEE B3
ディプロマポリシー 1

Teaching Method

Outline	Lecture on the concept of information quantity and entropy, probabilistic model of occurrence of information and coding related to it.
Style	Lecture and exercise
Notice	Require the score points of 60 or more to reach the evaluation standard of JABEE. Those whose evaluation is less than 60 points can receive a follow-up program by submitting the approval test application. As a result of the follow-up program, the score will be 60 points if certified. Follow-up program will differ depending on contents that have not been certified, so please check in advance.

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	Understand the subjects, concepts, and necessary basic mathematics of information theory.
		2nd	Representation of information	Understand the basis of information representation in the specific concrete examples (alphabet, encoding, sign etc).
		3rd	Definition of information amount	Understand the amount of information which is the most basic concept of information theory.
		4th	Entropy	Understand the entropy which is the most basic concept of information theory.
		5th	Exercise: Various information amount (1)	Understand the joint entropy.
		6th	Exercise: Various information amount (2)	Understand the conditional entropy and mutual information.
		7th	Information source	Understand the model of information sources, the entropy of information sources.
		8th	Markov source	Understand Markov sources.
	2nd Quarter	9th	Information redundancy	Understand the redundancy of information sources.
		10th	Noiseless discrete communication path	Understand noiseless discrete communication path.
		11th	Encoding	Understand encoding and elimination of redundancy.
		12th	Noisy discrete communication path	Understand noisy discrete communication path.
		13th	Error correction and correction	Understand error detection and correction.
		14th	Error correction code	Understand Hamming code, linear code, cyclic code.
		15th	Final exam	Confirm the degree of understanding of the information theory basis.
		16th	Evaluation / confirmation	Explanation of answer example and returning the final exam

Evaluation Method and Weight (%)

	Examination	Exercise	Total

Subtotal	80	20	100
Basic Ability	80	20	100

Toyama College	Year	2020	Course Title	Applied Mathematics Ⅲ

Course Information

Course Code	0262	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	基礎解析学　改定版		
Instructor	Matoba Ryuichi		

Course Objectives

The primary objective of the course is to acquire the following skills:
- To be able to solve basic problems of function of complex variable.
- To be able to solve basic problems of holomorphic function calculus.
- To be able to solve basic problems of series expansion of complex functions, and residue theorem.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	To be able to solve advanced problems of functions of complex variables.	To be able to solve basic problems of functions of complex variables.	To be unable to solve problems of functions of complex variables.
Evaluation 2	To be able to solve advanced problems of holomorphic function calculus.	To be able to solve basic problems of holomorphic function calculus.	To be unable to solve problems of holomorphic function calculus.
Evaluation 3	To be able to solve advanced problems of series expansion of complex functions, and residue theorem.	To be able to solve basic problems of series expansion of complex functions, and residue theorem.	To be unable to solve problems of series expansion of complex functions, and residue theorem.

Assigned Department Objectives

JABEE B1
ディプロマポリシー 3

Teaching Method

Outline	Complex numbers, complex functions, holomorphic functions, Cauchy-Riemann equation, Cauchy's theorem, Cauchy integral theorem, radius of convergence, pole and residue, and residue theorem
Style	Class style: Lecture and drills Evaluation: Score of the final exam
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance and function of complex variable 1 (lecture and drill)	Students understand four arithmetic operations of complex number and polar form.
		2nd	Function of complex variable 2 (lecture and drill)	Students understand notion of n-th power root, sequence, series, and complex function.
		3rd	Review of 1st week to 2nd week (drill)	Review topics of 1st week to 2nd week.
		4th	Holomorphic function1 (lecture)	Students understand the definition of holomorphic function.
		5th	Holomorphic function2 (lecture and drill)	Students can derive and apply Cauchy-Riemann equation.
		6th	Holomorphic function3 (lecture)	Students understand basic property of holomorphic function.
		7th	Review of 4th week to 6th week (drill)	Review topics of 4th week to 6th week
		8th	Differential of complex function (lecture and drill)	Students can differentiate complex function.
	2nd Quarter	9th	Integration of complex function 1 (lecture and drill)	Students can integrate complex function.
		10th	Integration of complex function 2 (lecture and drill)	Students can derive and apply Cauchy's theorem.
		11th	Integration of complex function 3 (lecture and drill)	Students can derive and apply Cauchy integral theorem.
		12th	Series expansion and residue 1 (lecture and drill)	Students understand Taylor expansion and Laurent expansion, and can apply them to basic problems.
		13th	Series expansion and residue 2 (lecture and drill)	Students can apply d'Alembert equation and Cauchy-Hadamard formula to basic problems.
		14th	Series expansion and residue 3 (lecture and drill)	Students understand notion of pole, residue, and residue theorem, and can apply them to basic problems.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the 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 Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0

Toyama College	Year	2020	Course Title	Applied Mathematics Ⅳ

Course Information

Course Code	0263	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	Department of Electronics and Computer Engineering	Student Grade	5th
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	Distribute the lecture materials created by the teacher in charge every time		
Instructor	Matoba Ryuichi		

Course Objectives

The primary objective of the course is to acquire the following skills:
- To be able to apply Euclidean algorithm to solve basic level problems.
- To be able to solve basic level problems which are related to congruence expression and prime number.
- To be able to apply Euler function, Euler's theorem, and Fermat's little theorem to solve basic level problems.
- To be able to encrypt and decrypt messages with RSA public-key cryptography.

Rubric

	Ideal Level of Achievement	Standard Level of Achievement	Unacceptable Level of Achievement)
Evaluation 1	To be able to apply Euclidean algorithms to solve advanced level problems	To be able to apply Euclidean algorithms to solve basic level problems	To be unable to apply Euclidean algorithms to solve problems
Evaluation 2	To be able to solve advanced level problems which are related to congruence expressions and prime numbers	To be able to solve basic level problems which are related to congruence expressions and prime numbers	To be unable to solve problems which are related to congruence expressions and prime numbers
Evaluation 3	To be able to apply the Euler function, Euler's theorem, and Fermat's little theorem to solve advanced level problems	To be able to apply the Euler function, Euler's theorem, and Fermat's little theorem to solve basic level problems.	To be unable to apply the Euler function, Euler's theorem, and Fermat's little theorem to solve problems
Evaluation 4	To be able to encrypt and decrypt messages with RSA public-key cryptography, and describe scheme of RSA public-key cryptography	To be able to encrypt and decrypt messages with RSA public-key cryptography	To be unable to encrypt and decrypt messages with RSA public-key cryptography

Assigned Department Objectives

JABEE B1
ディプロマポリシー 3

Teaching Method

Outline	Property of prime numbers, congruence expressions and modulus, set theory and mapping, Fermat's little theorem, Euler's theorem, RSA public-key cryptography, and Euclidean Algorithm
Style	Class style: Lecture and drills Evaluation: Score of the final exam
Notice	Students whose final score is under 60 can take a makeup exam

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance and definition of operators (lecture)	Students understand introduction of number theory.
		2nd	Modulus (lecture)	Student understand notion of modulus.
		3rd	Congruence expression (lecture and drill)	Students understand notion of congruence expression, and apply it to solve problems.
		4th	Review of 1st week to 3rd week (drill)	Review topics of 1st week to 3rd week.
		5th	Set and residue system (lecture)	Students understand set theory and residue.
		6th	Fermat's little theorem 1 (lecture)	Students understand proof of Fermat's little theorem.
		7th	Fermat's little theorem 2 (lecture and drill)	Students can apply Fermat's little theorem to problems.
		8th	Euler's theorem 1 (lecture)	Students understand proof of Euler's theorem.
	4th Quarter	9th	Euler's theorem 2 (lecture and drill)	Students can apply Euler's theorem to problems.
		10th	Review of 5th week to 9th week (drill)	Review topics of 5th week to 9th week.
		11th	Euclidean algorithm and sieve of Eratosthenes (lecture and drill)	Students can apply Euclidean algorithm and sieve of Eratosthenes to problems.
		12th	Cryptography 1 (lecture)	Students understand notion of public key cryptosystem.
		13th	Cryptography 2 (lecture)	Students understand notion of RSA public-key cryptography.
		14th	Cryptography 3 (lecture and drill)	Students can encrypt and decrypt messages with RSA public-key cryptography.

		15th	Final exam	Final exam
		16th	Return the final exam	Return the 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 Ability	100	0	0	0	0	0	100
Technical Ability	0	0	0	0	0	0	0
Interdisciplinary Ability	0	0	0	0	0	0	0