

香川高等専門学校		開講年度	令和06年度 (2024年度)	授業科目	情報工学演習 (留学生)
科目基礎情報					
科目番号	5401		科目区分	専門 / 必修	
授業形態	授業		単位の種別と単位数	履修単位: 2	
開設学科	情報工学科 (2019年度以降入学者)		対象学年	3	
開設期	通年		週時間数	前期:2 後期:2	
教科書/教材	Hamabe Ryuji, "Introduction to Logic Circuits", Morikita Publishing. Hasegawa Satoshi, "Understandable C Language", Kindai Kagaku Sha. Study Group of Information Processing Education, "Programming Workbook for Beginners", Morikita Publishing.				
担当教員	宮崎 貴大				
到達目標					
This class allows the students to acquire the knowledge necessary for understanding classes in the third and subsequent years of the Department of Information Engineering. In particular, the Department of Information Engineering strongly requires the students to know how CPUs work and to be able to write programs, and therefore the primary goal for them is to acquire the basics of logic circuits and basic programming skills. In addition, if students are found not to have sufficient knowledge for understanding classes in the third and subsequent years, the class will flexibly teach necessary knowledge.					
ルーブリック					
	Ideal Level		Standard Level		Unacceptable Level
Able to perform basic Windows operations	Can quickly perform basic operations.		Can perform basic operations.		Cannot perform basic operations.
Able to create documents using a word processor	Can quickly create documents.		Can create documents.		Cannot create documents.
Can add and subtract binary numbers	Can add and subtract binary numbers.		Knows how to add or subtract binary numbers.		Cannot add nor subtract binary numbers.
Understand the fundamentals of logic and mathematics, and be able to perform Boolean algebraic logic operations.	Can perform logical operations in Boolean algebra.		Understands the basics of computer mathematics.		Does not understand the basics of computer mathematics.
Understand the relationship between the truth table and the standard form, and obtain the standard form from the truth table.	Understands the relation between truth tables and standard forms, and can obtain standard forms from truth tables.		Understands the relation between truth tables and standard forms.		Does not understand the relation between truth tables and standard forms.
Can be simplified with a Karnaugh diagram	Can perform logic simplification by Karnaugh maps.		Understands logic simplification by Karnaugh maps.		Does not understand logic simplification by Karnaugh maps.
Understand basic programming procedures	Can create programs.		Understands the basic procedures of programming.		Does not understand the basic procedures of programming.
Understand the basic structure of the program	Understands the basic structure of programs.		Knows the basic structure of programs.		Does not know the basic structure of programs.
Describe selection and repetition structures in C	Can write selection and repetition structures in C.		Knows selection and repetition structures in C.		Does not know selection and repetition structures in C.
Understand basic algorithms using arrays	Understands basic algorithms using arrays.		Can use arrays.		Cannot use arrays.
学科の到達目標項目との関係					
教育方法等					
概要	This class offers exercises on the study contents of each study item. In addition, assignments will be given as necessary according to the study items. and the students will be required to submit reports on them.				
授業の進め方・方法	In the first semester, the students learn basic computer operations and the basics of digital circuits using the textbook for the second year students. In the second semester, the students acquire basic programming skills according to the contents studied in Information Processing I in the second year.				
注意点	For questions, email at kondoh@di.kagawa-nct.ac.jp or visit the instructors office (3rd floor of the department building No.3). Office hours: Monday after school - 17:00				
授業の属性・履修上の区分					
<input type="checkbox"/> アクティブラーニング		<input type="checkbox"/> ICT 利用		<input type="checkbox"/> 遠隔授業対応	
				<input type="checkbox"/> 実務経験のある教員による授業	
授業計画					
		週	授業内容	週ごとの到達目標	
前期	1stQ	1週	Typing practice		
		2週	Exercises of basic Windows operations 1	Can perform basic Windows operations. C1:1,2	
		3週	Exercises of basic Windows operations 2		
		4週	Exercises of creating Japanese documents in Word	Can create documents using a word processor. C3:1,2	
		5週	Representation of numbers, Complement representation, Complement addition	Can add and subtract binary numbers. D2:1,2	
		6週	Encoding of numbers and characters		
		7週	Basic laws of Boolean algebra	Understands the basics of computer mathematics and can perform logic operations in Boolean algebra. D2:1,2	
		8週	Logic operations and logic symbols		
	2ndQ	9週	Exercises		

後期		10週	Standard forms for addition and multiplication	Understands the relation between truth tables and standard forms, and can obtain standard forms from truth tables. D2:1,2
		11週	Standard forms and truth tables	
		12週	Exercises	
		13週	Logic of Karnaugh maps	Can perform logic simplification by Karnaugh maps. D2:1,2
		14週	Logic simplification by Karnaugh maps	
		15週	Exercises	
		16週		
	3rdQ	1週	Exercises of basic UNIX operations	
		2週	Exercises of basic operation of C language processing systems	Understands basic programming procedures. D2:1,2, E2:1, E3:1
		3週	Standard input and output	
		4週	Variables, Types, Assignments, Arithmetic operations	Understands the basic structure of programs. D2:1,2, E2:1, E3:1
		5週	Using standard functions	
		6週	Case control by the if or switch statement	Can write selection and repetition structures in C. D2:1,2, E2:1,2, E3:1-3
		7週	Repetition by the for statement	
		8週	Repetition by the while statement	
	4thQ	9週	One-dimensional arrays, Multidimensional arrays	Understands basic algorithms using arrays. D2:1,2, E2:1,2, E3:1,2
		10週	Maxima/Minima, Averaging algorithms	
		11週	Sorting algorithms	
		12週	User functions	Can create functions according to the requirements specification. D2:1,2, E2:1,2, E3:1,2
		13週	File input and output	
		14週	Pointers	Can perform processing using structures/pointers. D2:1,2, E2:1,2, E3:1,2
		15週	Structures	
		16週		

モデルコアカリキュラムの学習内容と到達目標

分類	分野	学習内容	学習内容の到達目標	到達レベル	授業週
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評価割合

	Report	quiz	Mutual Evaluations between students	Behavior	Portfolio	Other	合計
総合評価割合	100	0	0	0	0	0	100
Basic Proficiency	100	0	0	0	0	0	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0