

Tsuyama College		Year	2021		Course Title	Database Systems
Course Information						
Course Code	0151		Course Category	Specialized / Elective		
Class Format	Lecture		Credits	Academic Credit: 2		
Department	Department of Integrated Science and Technology Communication and Informations System Program		Student Grade	5th		
Term	First Semester		Classes per Week	2		
Textbook and/or Teaching Materials	Textbook : Takeshi NAGATA, "Database No Kiso (Introduction to Database)" (Coronasha)					
Instructor	KAWANAMI Hiromichi					
Course Objectives						
Leaning purposes : Learn about a database system, which can record a lot of data with information of relations or structures of data. Also study fundamental SQL. which is a software which can extract useful information from a database effecticvely. Leaning purposes : Learn about database systems that can record extensive data, involves relations or structures of data. Also study fundamental SQL. software that can extract useful information from a database.						
Course objectives : 1. To acquire essential knowledge IT engineers should know about database systems. 2. To understand data modeling. 3. To master fundamentals of programming language for a database. 4. To master fundamentals of functions of a database management system.						
Rubric						
	Excellent	Good	Acceptable	Not acceptable		
Achievement 1	The student can comprehensively explain fundamentals IT engineers should know.	The student can adequately explain fundamentals which IT engineers should know.	The student can explain some fundamentals IT engineers should know.	The student does not reach the the acceptable level.		
Achievement 2	The student can explain variety of data models.	The student can explain the relational data model and fundamentals of the E-R diagram.	The students can explain a relational data model table and fundamental operations of it.	The student does not reach the the acceptable level.		
Achievement 3	The student can explain SQL programming and how it is applied.	The student can explain functions of an SQL command such as "UPDATE".	The student can explain at least a function of "SELECT" command of SQL.	The student does not reach the the acceptable level.		
Achievement 4	The student can competently explain practical functions of a database management system.	The student can sufficiently explain funcnamental functions of a database management system.	The student can explain aspects of funcnamental functions of a database management system.	The student does not reach the the acceptable level.		
Assigned Department Objectives						
Teaching Method						
Outline	General or Specialized : Specialized Field of learning : Information, Control Foundational academic disciplines : Informatcs/Computing Technologies/Multimedia database Relationship with Educational Objectives: This class is equicalent to "(3) Acquire deep foundation knowledge of the major subject area". Relationship with JABEE programs : The main goal of learning / education in this class are "A", "A-2". Course outline : Learn about a database system, which can record a lot of data with information of relations or structures of data. Also study fundamental SQL. which is a software which can extract useful information from a database effecticvely. Through the study, understand fundamental conceptions for large data handling, such as "data independent", "data sharing", "data maintainance" and obtain general perspective for software engineering and system design etc. In addition, learn about Relational database management language, SQL and study practical database accessing technology.					
Style	Course method : This class is conducted mainly using a blackboard. To deepen understanding, students work on exercises. Grade evaluation method : Exams (75%) + Exercises (25%). Examinations will be conducted 2 times. A supplementary examination may be conducted. However, the supplementary exam will not exceed 60 points.					

Notice	<p>Precautions on the enrollment : Students of ICT course must take this class (no more than one-thirds of the required number of class hours missed) in order to complete the 5th grade course. This is a class that requires study outside of class hours. A total of 45 hours of study is required per credit, including both class time and study outside class time. Follow the instructions of the instructor regarding study outside of class hours.</p> <p>Course advice : Precisely understand meaning and definition of technical terms in textbook.</p> <p>Fundamental subjects : Algorithms and Data Structures (3rd year) Related subjects : ICT systems (5th year, ICT)</p> <p>Attendance advice : Listening to the lecture carefully is very important and the most effective way to understand. If you are late for the start time, your absence will be counted on every half class hour.</p>
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Characteristics of Class / Division in Learning

<input type="checkbox"/> Active Learning	<input checked="" type="checkbox"/> Aided by ICT	<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
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E l e c t i v e m u s t c o m p l e t e s u b j e c t s

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance	
		2nd	Data models	Can explain E-R diagram.
		3rd	Relational data model (1)	Can explain a "table" and a "primary key" etc. in relational data model.
		4th	Relational data model (2)	Can explain relational algebra.
		5th	SQL (1)	Can use fundamental SELECT commands.
		6th	SQL (2)	Can use a set function.
		7th	SQL (3)	Can conduct updating a "table" and making a "view".
		8th	Semester mid-term exam	
	2nd Quarter	9th	Return and commentary of exam answers	
		10th	SQL言語 (4)	Can use sub-query of SQL.
		11th	SQL言語 (5)	Can define a "foreign key" and JOIN operation.
		12th	Data storage	Can explain mechanism of a physical data storage and explain B+ Tree structure etc.
		13th	Transaction processing	Can explain ACID characteristics, COMMIT and ROLLBACK and necessity of transaction management.
		14th	Parallel processing	Can explain locking protocols.
		15th	Semester final exam	
		16th	Return and commentary of exam answers	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Exercise	Other	Total
Subtotal	75	0	0	0	25	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	75	0	0	0	25	0	100
Cross Area Proficiency	0	0	0	0	0	0	0