Course Code: TB15204

Subject Numbering	TMA-MEE320E
Year	2021
Subject	(IMAC-U) Fundamentals of Information Science I
Credit(s)	2
Instructor	HIROAKI KOBAYASHI

Language	English
Object in Class subject and Object and summary of class and Goal of study(J)	
Object in Class subject and Object and summary of class and Goal of study	This class will be managed by Google classroom, whose class code is sxj5fra, and delivered in a real-time on-line fashion. Please access the on-line classroom on every Monday and Thursday, at 1:00pm (until 2:30). 1. Class subject(目的) As the learning goal, students have acquired the knowledge of circuit design and organization of modern computer systems. 2. Object and summary of class(概要) After the quick review of computer systems development in the history, the course gives the mathematical foundation for computer system design. Based on the mathematical foundation, the design methodology of basic circuits such as combinational circuits and sequential circuits is given. And then, the course describes how a computer system is constructed by using several basic combinational and sequential circuits, and discusses its functionality to carry out arithmetic and logic operations. In addition, the format of a machine language to direct operations to the computer system and its interpretation to generates control signals will be presented. 3. Goal of study(達成目標等) In this course, students should be able to: (1) know the concept of today's computers based on the history of computers development, (2) learn data representation for computers and the mathematical foundation of computer arithmetic, and (3) understand the concrete structure and functionality of modern computer systems through their basic components of arithmetic unit, memory and control unit as building blocks in terms of hardware and software.
Other subject is relevant and complete a point to notice(J)	
Other subject is relevant and complete a point to notice	Students are strongly recommended to take 1) The Basics of Information Sciences and 2)Computer Software Engineering.
Contents and progress schedule of class(J)	
Contents and progress schedule of class	1. Course Introduction, and History and Fundamentals of Computers 2. Number Representation: Binary Digit (Part I) 3. Number Representation: Binary Digit (Part II) 4. Boolean Algebra (Part I) 5. Boolean Algebra (Part II) 6. Combinational Logic and it Applications (Part I) 7. Combinational Logic and it Applications (Part II) 8. Sequential Logic: Basics (Part I) 9. Sequential Logic: Basics (Part II) 10. Sequential Logic: Applications (Part I) 11. Site Visit to Supercomputer Center of Tohoku University 12. Sequential Logic: Applications (Part II) 13. Organization of Computer Systems 14. Control Mechanism of Computer Systems 15. Final Examination
self study(J)	Review the class handouts before attending the class

self study	Review the class handouts before attending the class
Record and evaluation method(J)	
Record and evaluation method	Students will be evaluated based on: class attendance, homework assignments, reports and the final exam.
Textbook and references	
URL	
Attached file	
Office hours(J)	
Office hours	
Notes	
Practical business	
In addition	
Last Update	2021/03/23 17:42

No	Title	Author	Publisher	Year	ISBN/ISSN	Classification
1.	『Computer Organization & Design: The Hardware/Software Interface』	David A Patterson and John L. Hennessy	Morgan Kaufmann	2013	978-0124077263	