Course Numbering	TMA-MEE320J
Year	First semester 2025
Subject (J)	Fundamentals of Information Science I
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Credit(s)	2Credits
Instructor	TAKAYUKI OKATANI
Media Class Subjects	
Essential Subjects	○
Language of Instruction	
Course Objectives and Summary/ Learning Goals (J)	Google Classroomのクラスコードは工学部Webページにて確認すること。 学部シラバス・時間割(https://www.eng.tohoku.ac.jp/edu/syllabus-ug.html) １．目的：計算機の構造と機能についての基礎知識の修得を目的とする。 ２．概要：計算機の歴史を踏まえ、現在の計算機の内容を説明し、今後の発展について述べる。 ３．達成目標等：計算機の概念を理解させ、計算機の有効利用を行う能力を養わせる。 Google Classroom class code: m7dyj3t
Course Objectives and Summary/ Learning Goals	The class code for Google Classroom can be found on the Web site of the School of Engineering: https://www.eng.tohoku.ac.jp/edu/syllabus-ug.html (JP Only) The objective of this course is to acquire basic knowledge about the structure and functions of computers. Starting from the history of computers, the mechanisms of how they work will be explained and their future will be discussed. The goal is to help students understand the concept of computers and develop the ability to use computers effectively.
Relevance to Other Subjects/Considerations for Taking the Class (J)	
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Course Description (J)	１．序論：コンピュータの歴史と概念 ２．数の表現 ３．実数の表現 ４．ブール代数 ５．組合せ回路 ６．順序回路の基礎 ７．順序回路の応用 ８．コンピュータシステム ９．演算，制御，メモリシステム 10．コンピュータシステムの高速化技術 11．コンパイラ(1) 12．コンパイラ(2) 13．オペレーティングシステム 14．ネットワーク 15．まとめ
Course Description	1. History and basics of computers 2. Representation of numbers (1) 3. Representation of numbers (2) 4. Boolean algebra 5. Combinatorial circuits 6. Sequential circuits: basics 7. Sequential circuits: design and application 8. Computer architecture 9. Arithmetic, control, and memory systems 10. High performance computing 11. Compilers (1) 12. Compilers (2) 13. I/O and operating systems 14. Computer networks 15. Summary and discussion
Preparation and Review(J)	予習：Google Classroomにて行う． 復習：講義の内容を踏まえ，資料を改めて見直し，理解を深めること．

Preparation and Review	Preparation: Students must read the handouts distributed on the web page of this lecture in advance. Review: Students must review the handouts and deepen their understanding of what is explained in the lecture.
Evaluation methods and criteria (J)	成績評価は，Google Classroomでの課題（特に記載がない限りすべての課題）と筆記試験の成績を総合して行う.
Evaluation methods and criteria	Grading will be determined based on the result of the assignments on Google Classroom (all assignments, unless otherwise noted) and a written examination.

Textbooks and references

Title	Author	Publisher	Year	ISBN/ISSN	Classification
コンピュータ工学入門	鏡，佐野，滝沢，岡谷，小林	コロナ社	2015	9784339024920	教科書
コンピュータの構成と設計，ハードウエアとソフトウエアのインタフェース 上	パターソン，ヘネシー	日経BP社	2014	9784822298425	参考書

URL	
Attached File	
Office Hours(J)	Anytime
Office Hours	随時
Contact： Please insert '@' in the email address.	クラスルームで連絡可能
Notes	
Practical Skill/Hands-on Class	
Other Comments/Instructions	
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One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15-30 hours of class time and 30-15 hours of preparation and review outside of class. In laboratory, practical skill classes, one credit consists of 30-45 hours of class time and 15-0 hours of preparation and review outside of class.