3. 電気電子情報工学系　Electrical, Electronics and Computer Engineering Field			EEC-F4
授業科目名 Course Title	情報理論入門 Introduction to Information Theory	単位数 Credit	**2**
担当教員 Instructor	吉田　俊之　YOSHIDA Toshiyuki 岩田　賢一　IWATA Kenichi	開講学期 Semester	秋学期 Fall
キーワード Keywords	information theory, probability, entropy, coding	曜日/時限 Day & Time	

授業概要　Course summary
This course is an introduction to information theory covering the material: 1. Entropy, Relative Entropy, and Mutual Information 2. Entropy rates 3. Data Compression Entropy and Shannon's Source Coding Theorem
到達目標　Course goal
To understand the idea of the following items: 1. information measure based on entropy, 2. schemes of source encoding and decoding.
授業内容　Course description
See Course summary and Course goal.
準備学習（予習・復習）等　Preparation / Review
See Class style.
授業形式　Class style
This course is opened as a "flipped classroom", which is a class where you do lecture material at home (more on this later), and spend class time really reinforcing and learning the information as "Peer Instruction." Each student is assigned a part of the topic in each lecture, and is requested to prepare for a handout of the assigned part to present the material as "peer instruction". The instructors will make comments for the presentation, and give more advanced material to learn.
成績評価の方法・基準　Method of evaluation
The achievement of each student will be assessed by her/his presentation and handout.
教科書・参考書等　Textbook and material
Thomas M. Cover and Joy A. Thomas, Elements of Information Theory, second edition, ISBN: 978-0-471-24195-9.
受講要件・予備知識　Prerequisite
This course requires fundamental knowledge on mathematics and probability theory.
その他の注意事項　Note