

3. 電気電子情報工学系 Electrical, Electronics and Computer Engineering Field			EEC-F5
授業科目名 Course Title	通信と量子の数理 Mathematics of Communication and Quantum Science	単位数 Credit	2
担当教員 Instructor	山田 徳史 YAMADA Norifumi 橘 拓至 TACHIBANA Takuji 加藤 堯彦 KATO Takahiko 藤元 美俊 FUJIMOTO Mitoshi	開講学期 Semester	秋学期 Fall
キーワード Keywords	Quantum, Network, Communication, Wireless	曜日/時限 Day & Time	水曜/5 限 Wed/ 5 th

授業概要 Course summary	
この講義では、通信および量子に関する数理として、ワイヤレス、ネットワークの知識を使って通信システムの性能を評価する方法および量子論の基礎を学ぶ。 In this lecture, students will learn how to evaluate the performance of communication systems using knowledge of wireless and networks as part of the mathematics of communication, and the foundation of quantum theory.	
到達目標 Course goal	
1) To obtain a fundamental knowledge of quantum mechanics 2) To obtain a fundamental skill for evaluation of network system. 3) To obtain a fundamental skill for evaluation of communication system. 4) To obtain a fundamental knowledge for wireless system	
授業内容 Course description	
1) Read a lecture note or technical paper for quantum mechanics in turn and discussion. 2) Read a lecture note or technical paper for law of probability to evaluate the performance of network system. 3) Read a lecture note or technical paper for communications system in turn and discussion. 4) Read a lecture note or technical paper for wireless communications in turn and discussion.	
準備学習（予習・復習）等 Preparation / Review	
None	
授業形式 Class style	
講義 Lecture and Seminar	
成績評価の方法・基準 Method of evaluation	
学期末を含め複数回のレポート提出を求め、それぞれの評価を総合して判定する Students are required to submit multiple reports, including at the end of the semester. The final grade will be determined based on a comprehensive evaluation of all submissions.	
教科書・参考書等 Textbook and material	
プリント配布予定 The lecture note will be prepared.	
受講要件・予備知識 Prerequisite	
複素関数の基礎知識、確率の基礎知識、整数と集合の知識、線形代数及び三角関数までの微分積分の知識 Basic knowledge of complex number, probability, integers and sets, linear algebra and differential and integral calculus, including trigonometric functions	
その他の注意事項 Note	
対面で実施 Onsite, Face-to-face	