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| |  | | --- | | **Course Information** |  |  |  | | --- | --- | | Course title | Digital Communication Integrated Circuits Design | | Semester | 108-2 | | Designated for | COLLEGE OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE GRADUATE INSTITUTE OF BIOMEDICAL ELECTRONICS AND BIOINFORNATICS | | Instructor | [CHIA-HSIANG YANG](https://nol2.aca.ntu.edu.tw/nol/coursesearch/teacher.php?op=s2&td=901126) | | Curriculum Number | EE5092 | | Curriculum Identity Number | 921 U5010 | | Credits | 3.0 | | **Course Syllabus** | | | **Please respect the intellectual property rights of others and do not copy any of the course information without permission** | | | Course Description | 1. Introduction 2. Digital Modulation 3. Advanced Wireless Technology 4. Signal Propagation and Channel Model 5. Synchronization 6. Channel Estimation and Equalization 7. MIMO Detection 8. Circuit Techniques 9. IC Design Examples | | Course Objective | MIMO OFDM已為當前各種無線通訊標準所採用，其重要性不言可喻。本課程將講解OFDM基頻訊號處理所遭遇之各項問題與其解決方案，內容包括基本通訊理論、訊號處理、電路設計，並包含相關的系統實作範例。修習本課程之學生需於期末時進行專題研究並口頭報告其成果。 | | Course Requirement | 評分方式: 作業、期末專題 預修科目: 通訊原理、數位電路設計 (熟悉 Matlab, Verilog) |  |  | | --- | | **Progress** |  |  |  |  | | --- | --- | --- | | Week | Date | Topic | | 第1週 | 3/04 | Introduction | | 第2週 | 3/11 | Digital Modulation | | 第3週 | 3/18 | Advanced Wireless Technology | | 第4週 | 3/25 | Signal Propagation and Channel Model | | 第5週 | 4/01 | Synchronization | | 第6週 | 4/08 | Channel Estimation and Equalization | | 第7週 | 4/15 | MIMO Detection I | | 第8週 | 4/22 | Error Correcting Codes | | 第9週 | 4/29 | MIMO Detection II | | 第10週 | 5/06 | Circuit Techniques I | | 第11週 | 5/13 | Circuit Techniques II | | 第12週 | 5/20 | DSP Arch. Transformation | | 第13週 | 5/27 | Power-Area minimization | | 第14週 | 6/03 | MIMO IC Design Examples | | 第15週 | 6/10 | Comm. IC Design Examples | | 第16週 | 6/17 | Final Exam Week (no class) | | 第17週 | 6/24 | Final project presentation | |

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