Course Information	
Course title	Error Correcting Codes
Semester	110-1
Designated for	COLLEGE OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE GRADUATE INSTITUTE OF COMMUNICATION ENGINEERING
Instructor	MAO CHAO LIN
Curriculum Number	EE5029
Curriculum Identity Number	921 U1240
Credits	3.0
Course Syllabus	
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Course Description	1. Fundamentals 2. Introduction to Algebra 3. Linear Block Codes 4. Important Linear Block Codes 5. Cyclic Codes 6. BCH codes and Reed-Solomon Codes 7. Convolutional Codes 8.. Coded Modulation 9. Turbo Codes 10. Low Density Parity Check Codes 11. Polar Codes 12. Soft Decoding of Linear Block Codes
Course Objective	Error-correcting codes (ECC) are essential in the modern communications for increasing the transmission reliability. Moreover, the integration of ECC with other parts of the communication system such as modulation, equalization, synchronization or channel estimation can greatly enhance the system performances. In this course, the traditional algebra coding, convolutional coding, and the modern turbo codes, low density parity check codes and polar codes are will be included.
References	1. Shu Lin and Daniel J. Costello, "Error Control Coding: Fundamentals and Applications," PEARSON/ Prentice Hall,

	second edition, 2004. 2. Martin Bossert, "Channel Coding for Telecommunications," John Wiley, 1999. 3. Richard E. Blahut, "Theory and Practice of Error Control Codes," Addison-Wesley, 1983. 4. Todd K, Moon, "Error Correction Coding," Wiley Interscience, 2005.

Progress

Week	Date	Topic
No data		