

## Course Content

Course Title (English)	Error Correcting Codes
Course Title (Chinese)	錯誤更正碼
Credit	3
Instructor	Prof. Mao-Chao Lin 林茂昭 教授
Outline	<ol style="list-style-type: none"><li>1. FUNDAMENTALS</li><li>2. INTRODUCTION TO ALGEBRA</li><li>3. LINEAR BLOCK CODES</li><li>4. IMPORTANT LINEAR BLOCK CODES</li><li>5. CYCLIC CODES</li><li>6. BCH CODES AND REED-SOLOMON CODES</li><li>7. MAJORITY-LOGIC DECODABLE AND FINITE GEOMETRY CODES</li><li>8. BURST ERROR-CORRECTING CODES</li><li>9. CONVOLUTIONAL CODES</li><li>10. CODED MODULATION</li><li>11. TURBO CODES</li><li>12. EXIT CHART ANALYSIS FOR ITERATIVE DETECTION</li><li>13. LOW DENSITY PARITY-CHECK CODES</li><li>14. SOFT DECODING OF LINEAR BLOCK CODES</li><li>15. SPACE-TIME CODING</li></ol>
Goal	ERROR-CORRECTION CODING IS NOW AN ESSENTIAL PART OF ADVANCED COMMUNICATION SYSTEMS. ERROR-CORRECTION CODING CAN BE INTEGRATED INTO THE FUNCTIONS OF MODULATION, EQUALIZATION, SYNCHRONIZATION, ETC. TO

	<p>ENHANCE THE SYSTEM PERFORMANCE. THIS ONE-SEMESTER COURSE WILL PROVIDE THE BEGINNER WITH THE KNOWLEDGE OF BASIC ALGEBRA, LINEAR BLOCK CODES, CONVOLUTIONAL CODES AND THE ADVANCED RANDOM-LIKE CODES SUCH AS TURBO CODES AND LOW-DENSITY PARITY CHECK CODES.</p>
English Teaching	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Teaching Material	<input checked="" type="checkbox"/> English <input type="checkbox"/> Chinese