

電機工程學系

課程名稱：中文錯誤更正碼(二) 英文 Error-Correcting Codes (II)

科號 EE 665200

大學部

電機系碩博士班 甲組 乙組

電子所 通訊所 光電所

課程說明：

This course covers the most important developments in recent years in the area of error-correcting codes to complement the contents of its predecessor Error-Correcting Codes.

課程內容：

1. Coding and capacity
2. Reviews of linear block codes
3. Low Density Parity-Check (LDPC) Codes
4. Turbo codes
5. Ensemble decoding thresholds
6. Polar codes

教科書：W. E. Ryan and S. Lin, Channel codes: Classical and Modern, Cambridge University Press, 2009

參考書：

1. S. Lin and D. J. Costello, Jr., Error Control Coding, 2nd ed. Upper Saddle River, NJ: Prentice Hall, 2004.
2. C. B. Schlegel and L.C. Perez, Trellis and Turbo Coding, IEEE Press, 2004
3. R. H. Morelos-Zaragoza, The Art of Error Correcting Coding. Chichester, England: John Wiley & Sons, 2002.
4. M. Bossert, Channel Coding for Telecommunications, John Wiley & Sons, 2002.
5. Arikan, E. (July 2009). "Channel Polarization: A Method for Constructing Capacity-Achieving Codes for Symmetric Binary-Input Memoryless Channels". IEEE Transactions on Information Theory 55 (7): 3051–73.