

電機系博士資格考各組必考科目及參考書籍一覽表

112 年 8 月修正

	考試科目 SUBJECTS	組別 Group	參考書籍 REFERENCE BOOK
1	半導體物理與元件 Semiconductor Devices	電子組 Electronics Group	S.M.Sze:Semiconductor Devices Physics and Technology
2	控制系統 Control Systems	控制組 Control Group	B.C.Kuo:Automatic Control Systems.
3	離散數學 Discrete Mathematics	人工智慧與網路組 AI & Network Group	Grimaldi:Discrete & Combinatorial Mathematics An Applied Introduction *Auth.rd.*
4	電力工程 Power Engineering	電力組 Power Group	1. 電機機械：B. S. Guru and H. R. Hiziroglu, Electric Machinery and Transformers,3 rd Edition, Oxford University Press,New York, NY,2001. 2. 電力電子：N. Mohan, T. M. Undeland, and W. P. Robbins Power Electronics: Converters, Applications and Design John Willey & Sons,1989. 3. 電力系統：Hadi Saadat Power System Analysis McGraw-Hill,1999.
5	電磁波 Electromagnetics	電波組 EM Wave Group	D.K.Cheng：Field & Wave Electromagnetics，2 nd ed.Chap.7-11，1989
6	數位邏輯 Digital Logic	系統晶片組 SOC Group	S.Brown and Z.Vranesic:Fundamental of Digital Logic(2003 or later)
7	訊號與系統 Signals and Systems	生醫訊號處理與儀器組 Biomedical Signal Processing & Instrumentation Group	A. Oppenheim and A. Willsky, Signals & Systems 2nd ed., Prentice Hall 1996, USA
8	數位訊號處理 Digital Signal Processing	Communications Group	Oppenheim and Schafer:Digital Signal Processing
9	通訊理論 Communication Theory	Communications Group	John G. Proakis, Digital Communications, Fourth Edition, McGRAW-HILL.
10	隨機過程 Random Processes	Communications Group	A. Papoulis and S. U. Pillai, Probability, Random Variables and Stochastic Processes, McGraw Hill, 2002