223 M1130 (223 D1130) 高等分析化學(專論)一（3 學分）註：光譜分析 (Discussion in)Advanced Analytical Chemistry (I)(3)	
中文	英文
一、課程說明 本課程敘述各種原子和分子光譜分析術的基本原理、圖譜分析和儀器構造，並介紹現代科技中光譜化學分析的應用。	I、Course Description This course covers the principle, practice, instrumentation, and analytical application of atomic and molecular spectroscopies and spectrometries with emphasis on modern techniques in spectrochemical analysis.
二、課程內容 本課程之內容包括光譜分析基本觀念(電磁波、光—物質作用、光吸收、放射、散射等)、操作原理、分析概念(數據誤差與處理、靈敏度、偵測極限、量子效率、光譜雜訊、淬滅效應等)、儀器組件(光源、轉傳器、偵測器等)、原子光譜法、分子吸收光譜法、螢光光譜法及振動光譜法。其他可能解說的光譜分析術包括化學螢光法、X 射線光譜法、核磁共振術、單分子光譜法、表面電漿共振、電子光譜法、表面分析光譜法等。	II、Course Content The content of the course includes background theory (light property, light-matter interaction, absorption, emission, scattering, etc.) and operation principles of spectroscopy and spectrometry, methodology in spectrochemical analysis (systematic and random errors, sensitivity, detection limit, quantum yield, interference, quenching, etc.), spectrometer components (light sources, transducers, detectors, etc.), atomic spectroscopy, molecular absorption, molecular fluorescence, vibrational spectroscopy. Other spectroscopies which may be taught in the class include: chemiluminescence, x-ray spectroscopy, nuclear magnetic resonance, single molecule spectroscopy, surface plasmon resonance, electron spectroscopy, and surface spectroscopy.