

COURSE DETAIL

INSTRUMENTAL TECHNIQUES IN ANALYTICAL CHEMISTRY

Country

Singapore

Host Institution

National University of Singapore

Program(s)

National University of Singapore

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Chemistry

UCEAP Course Number

151

UCEAP Course Suffix**UCEAP Official Title**

INSTRUMENTAL TECHNIQUES IN ANALYTICAL CHEMISTRY

UCEAP Transcript Title

ANALYTICAL CHEM

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course introduces important instrumental techniques used in analytical chemistry, including thermal analysis (TGA, DSC), chemical and elemental analysis (AAS, ICP-AES, AFS, UV-visible absorption, FTIR, ATR-IR), Raman techniques, x-ray techniques (XFS, XPS, XRD), imaging and electron microscopy (SEM, TEM), mass spectrometry and its hyphenated techniques (GC-MS, MALDI). Case studies and real application examples in quality control, environmental analysis, materials characterization, forensic studies, etc. are illustrated. Beginning from the fundamentals and connecting these to real applications, students learn to appreciate the plethora of scientific tools developed to provide analysis solutions for real problems they encounter.

Language(s) of Instruction

English

Host Institution Course Number

CM3141

Host Institution Course Title

INSTRUMENTAL TECHNIQUES IN ANALYTICAL CHEMISTRY

Host Institution Course Details

<https://nusmods.com/courses/CM3141/instrumental-techniques-in-analytical-chemis...>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Chemistry

Course Last Reviewed

2025-2026

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