

# 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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