COURSE DETAIL

STRUCTURE DETERMINATION AND COMPREHENSION OF ORGANIC MOLECULES

Country
Korea, South

Host Institution
Korea Advanced Institute of Science and Technology (KAIST)

Program(s)
Korea Advanced Institute of Science and Technology, KAIST

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Chemistry

UCEAP Course Number
181

UCEAP Course Suffix

UCEAP Official Title
STRUCTURE DETERMINATION AND COMPREHENSION OF ORGANIC MOLECULES

UCEAP Transcript Title
DTRMTN&COMP ORG MOL

UCEAP Quarter Units
4.50

UCEAP Semester Units
3.00

Course Description

This course covers modern spectroscopic techniques used for structure elucidation of organic compounds and spectral data analysis techniques.

Lectures on natural products biosynthesis and structure determination will be given at the end of the course.

This course is specifically designed for students who will be practicing the structure determination of organic molecules for their research project.

Topics include Basic Principles of NMR I, Basic Principles of NMR II; NMR Chemical Shift, Proton NMR (Mosher Ester Analysis + CASA reagent); Coupling Constants, Murata J-Based Method; Nonclassical Coupling + NMR Calculations, 2D NMR I (COSY, HSQC, HMBC); 2D NMR II (Other NMR Techniques), 2D NMR Peak Assignment Practice; 2D NMR Unknown Determination; Mass Spec Ionization; Mass Spec Application + Analyzer, Mass Spec Fragmentation analysis I; Mass Spec Fragment Analysis II, IR Group Frequency; Practical X-ray microED (Video Lecture), Biosynthesis I Introduction; Biosynthesis II NRPS, Biosynthesis III PKS; Biosynthesis IV Terpenes + Alkaloids, Biosynthesis V Review.

Language(s) of Instruction
English

Host Institution Course Number
CH 437,CH.40021

Host Institution Course Title
STRUCTURE DETERMINATION AND COMPREHENSION OF ORGANIC MOLECULES

Host Institution Course Details
https://erp.kaist.ac.kr/com/lgin/SsoCtr/initExtPageWork.do?link=estblSubjt

Host Institution Campus
Host Institution Faculty
Host Institution Degree
Host Institution Department
Course Last Reviewed 2025-2026

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