

COURSE DETAIL

MATERIALS SCIENCE IN LIFE

Country

China

Host Institution

Fudan University

Program(s)

Shanghai Summer

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Materials Science

UCEAP Course Number

101

UCEAP Course Suffix

S

UCEAP Official Title

MATERIALS SCIENCE IN LIFE

UCEAP Transcript Title

MATERIALS SCI/LIFE

UCEAP Quarter Units

4.00

UCEAP Semester Units

2.70

Course Description

Discovery of new materials properties leads to our better understanding of the fundamental organization of matter, and utilization of novel properties, effects, and functions for specific applications. Many properties of modern materials can be changed by varying the size and not chemical compositions of materials, from macro- to micro- to nanoscale. This course introduces an interdisciplinary nature to materials properties, which are divided by size (from macro- to nano), time (past: traditional; present: bioinspired, semiconductor, composites; future: nanomaterials, intelligent materials) and properties (mechanical, magnetic, thermal, chemical, optical, acoustic, electronic). The course explores a combinatorial approach to materials' design; how materials properties, effects, and functions are integrated; what we can learn from biology; and how future smart materials might look. Students develop a designer approach and real-world problem solving skills. Assessment: attendance (20%), oral presentation (40%), written problem solving (40%).

Language(s) of Instruction

English

Host Institution Course Number

MATE170001

Host Institution Course Title

MATERIALS SCIENCE IN LIFE

Host Institution Course Details

Host Institution Campus

International Summer School

Host Institution Faculty

Host Institution Degree

Host Institution Department

Science & Technology

Course Last Reviewed

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