

Environmental Health: Air Pollution and Climate Change

Department: Fudan International Summer Session 2026

| | | | | | | | |
|--------------------------|--|---|---|---|---------|----------------------------------|---|
| Course Code | GEIS30023 | | | | | | |
| Course Title | Environmental Health: Air Pollution and Climate Change | | | | | | |
| Credit | 2 | Experiment (including Computer) Credit | 0 | Practice Credit | 0.5 | Aesthetic Education Credit | 0.5 |
| Credit Hours Per Week | 9 | Education on The Hard-Working Spirit Credit Hours | | Language of Instruction | English | Honors Course | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Course Type | <input type="checkbox"/> Core General Education Course <input type="checkbox"/> Specific General Education Course <input type="checkbox"/> Basic Course in General Discipline <input checked="" type="checkbox"/> Others | | | 2+X Major : | | | |
| | | | | <input type="checkbox"/> Professional Core Course <input type="checkbox"/> Professional Advanced Course Non 2+X Major : <input type="checkbox"/> Professional Compulsory Course <input type="checkbox"/> Professional Elective Course | | | |
| Course Objectives | (Including value, knowledge and ability objectives) <ul style="list-style-type: none"> ● To build up the knowledge map and framework on environment, climate change and health. ● To set up a thinking strategy to understand the relationship between environment and health, environmental epidemiology and environmental toxicology. ● To inspire students' deep interests and curiosity on our planetary health, not only human health, but animals, plants, microorganisms and the viruses. We are 'One Health'! | | | | | | |
| Course Description | Environment is of great significance to human health. Air pollution, both indoor and outdoor, is closely related with different health problems in different populations. Climate affects human health independently and concomitantly interacts with ambient air pollution closely. Currently, global climate change, including extreme weather like heat wave and cold wave, more frequent wild fire, happens at a higher frequency and stronger intensity. This course will introduce the basic scientific knowledge about indoor and outdoor air pollution, as well as global and regional climate change, in relation to human health. The following questions will be talked and discussed: What types of air pollution are there in indoor and outdoor environment? What types of compounds form the pollution? Can they be measured? Do we know the levels of different pollutants? How about the relationship between outdoor and indoor environment? Is it safer to stay in indoor environment if there is a high outdoor air pollution? Do we have any measures to prevent or reduce the pollution level? What are the health effects of these pollutants? Do they affect our respiratory health, | | | | | | |

| | |
|--|---|
| | <p>cardiovascular system or even our endocrine systems? How much does the climate change interact with air pollution and affect our health? How are international or national fighting strategies on it?</p> <p>By active interactions with students, partly in person in class and partly in field or lab visit, students will benefit by obtaining scientific knowledge in air pollution, climate change and human health, getting more experiences in understanding the health effects of environment, becoming more skilled in communication in English and prepared better for international study in the future life.</p> |
|--|---|

Course Requirements:

This course will focus on introducing the updated knowledge on air pollution both indoor and outdoor environment, as well as climate change and air pollutant on human health. An experienced language skills in English is required. Enthusiasm in learning, exploring and active participation in group discussions will be encouraged.

Teaching Methods:

Teaching in person combined with 3 time in field work. Students' oral presentation in person combined with students' self-learning online.

Course Director's Academic Background:

Zhuohui Zhao, Ph.D (Uppsala University, Sweden), Professor, Department of Environmental Health, School of Public Health, Fudan University

Academic interest: Air pollution, Climate Change and Health, Environment and children's health.

Instructor's Academic Background:

Zhuohui Zhao, Ph.D (Uppsala University, Sweden), Professor, Department of Environmental Health, School of Public Health, Fudan University

Academic interest: Air pollution, Climate Change and Health, Environment and children's health.

Members of Teaching Team

| Name | Gender | Professional Title | Department | Responsibility |
|--------------|--------|--------------------|-------------------------|---------------------|
| Zhuohui Zhao | Female | Prof. | School of Public Health | Main responsibility |
| | | | | |

Course Schedule (Please supply the details about each lesson):

| Week | Date | Time | Contents | Location /methods | Teacher | Updates |
|------|-----------------------|------------|--|-----------------------|--------------|---------------------|
| 1 | July 13 th | 8:55-11:30 | Overview of Air pollution, Climate change and Health | In person | Zhuohui Zhao | |
| 2 | July 15 th | 8:55-11:30 | Sources, Components of Air pollutants and health effects | In person | Zhuohui Zhao | |
| 3 | July 16 th | 8:55-11:30 | Field visit in Jiangwan Campus, Fudan University | Practice (Field work) | Zhuohui Zhao | Guide: Prof. Bo Yao |

| | | | | | | |
|----|-----------------------|------------|---|-----------|--------------|-------------------------|
| 4 | July 20 th | 8:55-11:30 | Methodology of Environmental Epidemiology | In person | Zhuohui Zhao | |
| 5 | July 22 nd | 8:55-11:30 | Case study on environment and health | In person | Zhuohui Zhao | |
| 6 | July 23 rd | 8:55-11:30 | Field visit in Community Health Service Center | In person | Zhuohui Zhao | Guide: To be determined |
| 7 | July 27 th | 8:55-11:30 | Climate change and health | In person | Zhuohui Zhao | |
| 8 | July 29 th | 8:55-11:30 | Exposome and Health | In person | Zhuohui Zhao | |
| 9 | July 30 th | 8:55-11:30 | Field visit in Shanghai Environment Monitoring Center | In person | Zhuohui Zhao | Guide: Prof. Yunfei Cai |
| 10 | Aug 3 rd | 8:55-11:30 | How to make Academic Presentation | In person | Zhuohui Zhao | |
| 11 | Aug 5 th | 8:55-11:30 | Literature learning and preparing the presentation | On-line | Zhuohui Zhao | |
| 12 | Aug 6 th | 8:55-11:30 | Final presentation | In person | Zhuohui Zhao | |

The design of class discussion or exercise, practice, experience and so on:

A hybrid course will be organized with 12 times (3 hours/each), 8 times of in Person lectures in classrooms, 3 times of field visits, 1 online self-learning. Three visits will be arranged in the Jiangwan Campus, Fudan University, Pudong Community Health Service Center, Shanghai Air Quality Monitoring Center. The schedule of field visits might be adjusted according to the actual situations.

If you need a TA, please indicate the assignment of assistant:

We expect a TA could help organize and participate in the lecture and in the field visit.

Grading & Evaluation (Provide a final grade that reflects the formative evaluation process):

Twice of homework (40%) + One self-made video of field visit (10%) +Final-term proposal presentation (50%)

Usage of Textbook: Yes(complete textbook information form below) No

Textbook Information (No more than two textbooks) :

| Title | Author | ISBN | Publishing Time | Publisher | Type I | Type II |
|-------|--------|------|-----------------|-----------|---|---|
| | | | | | <input type="checkbox"/> Self-compiled Textbook (Published) <input checked="" type="checkbox"/> Non-mainland Textbook <input type="checkbox"/> Other Textbook (Published) | <input type="checkbox"/> National Planning Textbook <input type="checkbox"/> Provincial and Ministerial Planning Textbook <input type="checkbox"/> School Level |

| | | | | | | |
|--|--|--|--|--|---|--|
| | | | | | | Planning Textbook <input type="checkbox"/> Others |
| | | | | | <input type="checkbox"/> Self-compiled Textbook (Published) <input type="checkbox"/> Non-mainland Textbook <input type="checkbox"/> Other Textbook (Published) | <input type="checkbox"/> National Planning Textbook <input type="checkbox"/> Provincial and Ministerial Planning Textbook <input type="checkbox"/> School Level Planning Textbook <input type="checkbox"/> Others |
| Teaching References (Including author, title, publisher, publishing time,ISBN): No specified | | | | | | |

Table column size can be adjusted according to the content.