

| | | | |
|--------------------------------|---|-------------------|-----------|
| Course Name | Introduction to Environmental Earth Science | | |
| Semester, Year | First Semester, 2019 | Number of Credits | 2 credits |
| Course level | 1000 | Course Number | 027033 |
| Instructor(s) (Institution) | Shiro TSUYUZAKI 大学院地球環境科学研究院 Sohiko KAMEYAMA 大学院地球環境科学研究院 Masaaki KURASAKI 大学院地球環境科学研究院 Hitoshi SUZUKI 大学院地球環境科学研究院 Toshikazu KAWAGUCHI 大学院地球環境科学研究院 | | |
| Course Objectives | The course will address five issues in environmental earth sciences: 1) global warming and ocean ecosystems, 2) environmental changes and animal diversities, 3) plants and plant ecosystems in Japan, 4) environmental pollution and remediation, and 5) nanotechnology for environmental sciences The major objective of this course is to engage students in interdisciplinary discourse by addressing each of these issues. | | |
| Course Goals | Grasping issues in environmental earth science with various temporal and spatial scales, and examining the interdisciplinary discourse by addressing each of the challenges. | | |
| Course Schedule | <ul style="list-style-type: none"> (1) Introduction (Tsuyuzaki) (2) Earth system and global warming (Kameyama) (3) The roles of the oceans and carbon cycles (Kameyama) (4) Marine feedback systems on global warming (Kameyama) (5) Past and present on environmental pollution in Japan (Kurasaki) (6) Case studies of pollution in China, Indonesia and Mongolia (Kurasaki) (7) Remediation technologies for water and soil (Kurasaki) (8) Strolling across the campus to see the ecosystems (flexible depending on the weather) (Tsuyuzaki) (9) Biodiversity of the Japanese mammals (Suzuki) (10) Biodiversity and biogeography of mammals in Hokkaido (Suzuki) (11) Biodiversity in local ecosystems (Suzuki) (12) Temporal and spatial patterns on ecosystems in Japan with reference to global warming (Tsuyuzaki) (13) Nanotechnology for environmental science (Kawaguchi) (14) Biosensor for medical diagnosis and food analysis (Kawaguchi) (15) Gas sensor for environmental monitoring (Kawaguchi) | | |
| Homework | Preparation hours (depending on the background of each student): Basically special preparation is not required, but understanding basic sciences (physics, chemistry, biology and geology) is helpful. Essay question(s) may be provided. (Two questions in the last year) [FYI] The averaged total homework was 2 hours in the last year. (the result of questionnaire) | | |
| Grading System | Activities in class participation (40%) + essay questions (30%) + short exam (30%) | | |
| Textbooks / Reading List | The handouts will be provided and references are introduced in each lecture. An Inconvenient Truth: The Crisis of Global Warming Al Gore Viking Books for Young Readers 2008 The reference is a reference. Read any books you are interested in. | | |
| Websites | http://hosho.ees.hokudai.ac.jp/~tsuyu/top/lecture/hustep.html | | |
| Website of Laboratory | hosho.ees.hokudai.ac.jp/~tsuyu/index.html | | |
| Additional Information | | | |