

**Environmental Geography:**  
**Understanding of Climate Change Science and Politics**  
**Summer Session: June 26 – July 16**

**1. COURSE BASIC INFORMATION**

**INSTRUCTOR:** Gwangyong Choi (Professor at Major of Geography Education)

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**ROOM:** Room. 3355 (Human Geography Lab.) at Building #1 of College of Education

**TIME:** Monday through Thursday between 2PM and 6PM

**2. COURSE DESCRIPTION AND FORMAT**

This course introduces the geographical patterns of anthropogenic climate change in modern times and their impacts on the environments. Also, why international consensus on the climate policy is needed for mitigation and adaptation of the on-going global warming will be discussed. In detail, scientific basis and evidences of on-going climate changes in the atmosphere, the cryosphere, the hydrosphere and the biosphere will be covered in the first half of the course. Articles on model outputs providing the projections of future climate change as well as the observational and proxy data showing the past but also on the present climate change will be reviewed. In the second half of the course, current and future directions in international climate policy to mitigate climate changes as well as the impacts and adaptation of human-induced climate change will be discussed in the context of global geopolitics.

**3. TEXTBOOKS**

John T. Hardy, 2003, Climate Change: Cause, effects, and solutions, Wiley, 247 pp .

Additional readings will also be assigned such as the IPCC 4th Report at <http://www.ipcc.ch/>

#### **4. COURSE INFORMATION VIA THE WEB**

E-learning Center at Jeju National University (<http://elearning.jejunu.ac.kr/>)

: All assignments, reading materials, power point slides (PPT) in the PDF format, and important announcements will be provided through the board of the E-learning Center. SMS text messages will be sent to your cell phone when the PDF slide files are uploaded.

#### **5. SCHEDULE**

\* IPCC indicates the IPCC reports at <http://www.ipcc.ch/>; \* Sections from the required textbook

| <b>Part I. Past, Present and Future Climate Change</b>                                  |                                                                                                                                                     |                                    |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| June 26                                                                                 | Introduction to climate change science<br>Historical overview of climate change science                                                             | Section I<br>IPCC Part I           |
| June 27                                                                                 | Changes in atmospheric constituents and radiative forcing Observation:<br>climate change in surface and atmosphere<br>Paleoclimate                  |                                    |
| July 1                                                                                  | Observation: climate change in cryosphere<br>Observation: climate change in oceans and sea level                                                    |                                    |
| July 2                                                                                  | Couplings between changes in the climate systems and biogeochemistry<br>Understanding and attributing climate change                                |                                    |
| July 3                                                                                  | Climate models and their evaluation<br>Global climate projections<br>Regional climate projections/ Review                                           |                                    |
| July 4                                                                                  | <b>Field trip (climate change along the coastal regions of Jeju Island )</b>                                                                        | <b>Short Essay</b>                 |
| <b>Part II. Human Dimensions of Climate Change: Impacts, Adaptation, and Mitigation</b> |                                                                                                                                                     |                                    |
| July 8                                                                                  | Assessments of impacts and adaptation of climate change: coastal areas,<br>fresh water, and ecosystems, food production, industry, and human health | Section II-III<br>IPCC Part II-III |
| July 9                                                                                  | Mitigation: Reducing the impacts of anthropogenic climate change                                                                                    |                                    |
| July 10                                                                                 | Policy, Politics, and Economics of Climate Change                                                                                                   |                                    |
| July 11                                                                                 | Projections of adaptations vulnerability to future climate change                                                                                   |                                    |
| July 15                                                                                 | <b>Student presentations I</b>                                                                                                                      | <b>Term paper</b>                  |
| July 16                                                                                 | <b>Student presentations II</b>                                                                                                                     |                                    |

## **6. COURSE REQUIREMENTS**

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|----------------------------------------------------|--------|
| Participation (including a field trip) /Attendance | 15%    |
| Short essay                                        | 30%    |
| Presentation/Final term paper                      | 15/40% |
| Total                                              | 100%   |

**1) Academic Integrity:** The department fully endorses a no-tolerance cheating and plagiarism policy. If you are caught plagiarism, you may be failed and disciplinary action may be taken.

**2) Short essay:** Collect and describe visual materials (graphs and pictures) of newspaper, magazine and web related to climate change and its impacts on human society and the environments. The paper should be approximately three pages with double spaced text and the visual data. You should provide the source of materials with appropriate citations based on academic integrity (Be careful not to violate the plagiarism rule at the university). **This essay is due on July 5 and should be submitted by email (tribute@hanmail.net).**

**3) Final term paper and presentation:** Each student will present on a contemporary issues in impacts of climate change on each sector of human society and nature across the globe. To choose a reliable topic, you need to talk with the instructor before July 4. Each student should write an independent final term paper (approximately ten pages double spaced including tables and other materials). **The term paper is due on July 16 and a printed copy should be submitted to the instructor during the class only.** The paper should be approximately seven pages with double spaced text (if necessary, including data). You are supposed to make a presentation (20 minutes) with power point slides at the end of the summer session. Skipping the presentation and no submission of the final term paper may cause a fail in this course.