

<<Last Updated:2024/03/14>>

Course Schedule Information

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| Course Code | 88A068 |
| Semester | Fall and Winter Term |
| Day and Period | Thu3 |
| Course Name (Japanese) | アジア太平洋地域の気候変動 — 科学と解決策 |
| Course Name | Climate Change in Asia Pacific — Science and Solutions |
| Capacity | 0 |
| Room | Cybermedia Center/PLS+d |
| Course Numbering Code | 88INES9U105 |
| Required/Optional | 【木曜・3限】 ※授業時間は、13:00~14:30 High-flex class/ハイフレックス授業 |
| Type of Class | Lecture Subject |
| Credits | 2.0 |
| Student Year | 1,2,3,4,5,6 |
| Instructor | BARRETT BRENDAN FRANCIS DOMINIC |
| Course of Media Class | Not Applicable |

※About Course of Media Class

"Course of Media Class" are classes in which more than half of the classes are held in places other than classrooms by making advanced use of various media.

Undergraduate students can include up to 60 credits in media class course as requirements for graduation.

Even if this is not the case, we may hold classes using the media.

Detailed Syllabus Information

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| Course Subtitle | Climate Change in Asia Pacific — Science and Solutions |
| Language of the Course | English |
| Learning Methods | <p>Listening and watching face-to-face/online class: Listening and watching a lecture, video, or demonstration, face-to-face or via online (e.g., attending a face-to-face lecture, watching an on-demand video)</p> <p>Reading: Reading books and academic papers (e.g., summarizing an academic paper, reading information on a website)</p> <p>Discussion: Learning through question-and-answer interactions and exchanges of opinions among students and between students and the instructor (e.g., pair/group discussion, online chat, one-on-one guidance for writing an academic paper)</p> <p>Research: Collecting information from books and academic papers; gathering and analyzing data by fieldwork (e.g., review of previous research, fieldwork)</p> <p>Presentation: Writing papers, making presentations, and creating works (e.g., report writing, oral/poster presentation, creation of works, portfolio development)</p> |
| Course Objectives | <p>In 2022, the UN Secretary General, António Guterres, described the latest report from the Intergovernmental Panel on Climate Change (IPCC) as "code red for humanity." This suggests that the world is facing a climate emergency and that urgent measures are required to reduce greenhouse gas emissions and to adapt to the potential impacts of climate change.</p> <p>In this course students will examine the causes and science behind climate change, with a particular focus on the impacts in the Asia Pacific region. Working with experts from a network of partner universities in the region, students will also explore potential solutions in terms of effective measures to deal with sea level rise, coral reef conservation, transition to renewable energy, promotion of low carbon economic and urban development, and so on.</p> <p>This multi-disciplinary, classroom-based, videoconference enabled (using Zoom) collaborative course, provides a unique opportunity for students to interact with their peers, scientists, and</p> |

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| | experts from across the Asia Pacific and to engage in conversations on how we can collectively respond to the climate crisis. | |
| Learning Goals | 1 | Explore the current climate change trends, expected climate change impacts and potential responses to climate change in the context of the Asia/Pacific region. |
| | 2 | Examine and critically assess a wide array of short, medium and long-term climate change adaptation measures. |
| | 3 | Analyze existing greenhouse gas reduction/mitigation strategies from a multi-country and regional perspective. |
| | 4 | Develop the ability to identify major social and economic challenges facing the Asia Pacific region in the context of climate change and the transition to a net-zero energy future. |
| | 5 | Develop a sophisticated understanding of system-wide and individual approaches to making a net-zero carbon transition. |
| Requirements, Prerequisites | This course requires that the students have good English communication skills (no need for English language test scores). Students are welcomed to take this course to improve their English skills and as such students from diverse fields of studies are encouraged to take the course. | |
| Attendance and Student Conduct Policy | This course requires class participation and engaged discussion. Students are expected to attend all sessions, unless there are special circumstances in which case students should inform the course coordinator in advance. | |
| Class Plan | 1st | Title:Session 1 |
| | | Climate Science and Expected Impacts |
| | | Instructor : Victoria Keener, University of Hawaii |
| | | Independent Study Outside of Class : Read results of a survey on young people and climate anxiety: https://pubmed.ncbi.nlm.nih.gov/34895496/ |
| | 2nd | Title:Session 2 |
| | | Student Breakout Session - Measuring Carbon Footprints |
| | | Instructor : Brendan F.D. Barrett, Osaka University |
| | | Independent Study Outside of Class : Measure carbon footprint before class using this online tool: https://www.carbonfootprint.com/calculator.aspx |
| | 3rd | Title:Session 3 |
| | | Climate Change, Sea Level Rise and Coral Reefs |
| | | Instructor : Dolan Eversole (University of Hawaii) and Takashi Nakamura (Ryukyu University) |
| | | Independent Study Outside of Class : Learn about the impacts of climate change on coral reefs: https://oceanservice.noaa.gov/facts/coralreef-climate.html#:~:text=Climate%20change%20dramatically%20affects%20coral%20reef%20ecosystems&text=A%20warming%20ocean%3A%20causes%20thermal,land%2Dbased%20sources%20of%20sediment. |
| | 4th | Title:Session 4 |
| | | Net Zero Carbon and 100% Renewable Japan |
| | | Instructor : Yugo Tanaka (Institute for Global Environmental Strategies) and Yuko Nishida (Renewable Energy Institute) |
| | | Independent Study Outside of Class : Read about how to Triple Renewables in Japan for a 1.5°C Pathway: https://www.renewable-ei.org/en/activities/reports/20231207.php |
| | 5th | Title:Session 5 |
| | | Student Breakout Session - 1.5C Lifestyles |
| | | Instructor : Brendan F.D. Barrett, Osaka University |
| | | Independent Study Outside of Class : Read the report by Lewis Akenji, Magnus Bengtsson, Viivi Toivio, Michael Lettenmeier, Tina Fawcett, Yael Parag, Yamina Saheb, Anna Coote, Joachim H. Spangenberg, Stuart Capstick, Tim Gore, Luca Coscieme, Mathis Wackernagel, Dario Kenner. 2021. 1.5-Degree Lifestyles: Towards A Fair Consumption Space for All. Hot or Cool Institute, Berlin. |

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| 6th | Title:Session 6 |
| | Challenges and opportunities for China towards carbon neutrality |
| | Instructor : Xie Wang, Beihang University |
| | Independent Study Outside of Class : Read about the roadmap to carbon neutrality in China: https://www.iea.org/reports/an-energy-sector-roadmap-to-carbon-neutrality-in-china |
| 7th | Title:Session 7 |
| | Carbon Neutral Hawaii by 2045 and 100% Renewable Samoa |
| | Instructor : Makena Coffman (University of Hawaii) and Filoi Kirsten (Government of Samoa) |
| | Independent Study Outside of Class : Read about the decarbonization measures of Hawaii: https://climate.hawaii.gov/hi-mitigation/goals-and-progress/ |
| 8th | Title:Session 8 |
| | Climate change impacts and adaptation: insights from the Australian Black Summer fires |
| | Instructor : Lauren Rickards, La Trobe University |
| | Independent Study Outside of Class : Read about the Australia Black Summer Fires: https://recovery.preventionweb.net/collections/recovery-collection-australia-black-summer-bushfires-2019-2020 |
| 9th | Title:Session 9 |
| | Climate Change and Food Security |
| | Instructor : Kazuo Watanabe (University of Tsukuba) and Subhashni Raj (University of Hawaii) |
| | Independent Study Outside of Class : Read about Climate Change and Food Security from the World Bank: https://www.worldbank.org/en/news/feature/2022/10/17/what-you-need-to-know-about-food-security-and-climate-change |
| 10th | Title:Session 10 |
| | Student presentations |
| | Instructor : Brendan F.D. Barrett, Osaka University |
| | Independent Study Outside of Class : Prepare and rehearse presentation. |
| 11th | Title:Session 11 |
| | Energy Security in Europe and Japan |
| | Instructor : Romain Zissler, Renewable Energy Institute |
| | Independent Study Outside of Class : Read how it is possible for Renewables to Strengthen Energy Security in Europe and Japan: https://www.renewable-ei.org/en/activities/reports/20220705.php |
| 12th | Title:Session 12 |
| | CDP and Recent Global Trends on Climate Change |
| | Instructor : Takuya Harada, CDP Japan |
| | Independent Study Outside of Class : Learn about the CDP: https://www.cdp.net/en |
| 13th | Title:Session 13 |
| | Greening the Sky with Sustainable Aviation Fuels |
| | Instructor : Chong Cheng Tung, Shanghai Jiao Tong University |
| | Independent Study Outside of Class : Learn more about Sustainable Aviation Fuels: https://www.neste.com/products-and-innovation/sustainable-aviation?gad_source=1&gclid=CjwKCAiA0bWvBhBjEiwAtEsoW7gAFGPSiAeXrUM97Hb_eGa1Bisc-yMxZ1-3TeTBMP8oQcXEHbi5JBoCRJ0QAvD_BwE |
| 14th | Title:Session 14 |
| | Accelerated Climate Change and/or Accelerating Decarbonization? |
| | Instructor : Brendan F.D. Barrett, Osaka University |

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| | Independent Study Outside of Class : Read paper on Accelerated Decarbonization accessible via CLE. |
| 15th | Title:Session 15 |
| | Student Discussions and Wrap Up |
| | Instructor : Brendan F.D. Barrett, Osaka University |
| | Independent Study Outside of Class : Evaluate and reflections on the course. |

Textbooks

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| Reference | Recommended reading will be shared online via CLE. |
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| Grading Policy *Hover the mouse over the number of a learning goal to view the full text of it. | Evaluation Methods | Learning engagement | Individual Carbon Transition Discussion | 1.5C Lifestyle Discussion | Presentation | Report/paper |
| | Learning Goals1 | ○ | | | ○ | ○ |
| | Learning Goals2 | ○ | | | ○ | ○ |
| | Learning Goals3 | ○ | ○ | ○ | ○ | ○ |
| | Learning Goals4 | | ○ | ○ | ○ | ○ |
| | Learning Goals5 | | ○ | ○ | ○ | ○ |
| | Allocation of Marks | 10% | 20% | 20% | 30% | 20% |

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| Additional Information on Grading | This course requires class participation and engaged discussion. The assignments are designed to foster discussion between students across the multiple institutions in breakout groups; for example, to estimate your carbon footprint using an online calculator to share in an online break-out room via Zoom. |
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| Reasonable Accommodation | <ul style="list-style-type: none"> If you need reasonable accommodation to participate in this class due to disability (including intractable disease and chronic condition), please contact the office for students with disabilities (e.g., Educational Affairs Section, Academic Affairs Section, Student Affairs Section) at your school/faculty or graduate school, or the Disability Advisory and Support Service Office of the Health and Counseling Center. For more information, please visit the following website or contact the Disability Advisory and Support Service Office of the Health and Counseling Center. Website : https://acs.hacc.osaka-u.ac.jp Tel : 06-6850-6107 E-mail : campuslifekenkou-ac@office.osaka-u.ac.jp |
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This class is jointly delivered by faculty drawn from a network of universities in the Asia Pacific region and classrooms are connected via Zoom throughout the entire course.

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| Special Note | <p>The course has been delivered in this format since 2003 and in the twenty year period to 2023 over1,600 students from all the partner universities have completed the course.</p> <p>The course is designed to encourage extensive interaction between the students from the participating universities through the use of break-out sessions.</p> |
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| Office Hours | Should students wish to make an appointment with the instructor please send an email to brendan.barrett.cgin@osaka-u.ac.jp |
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Co-instructors of this course are:

Brendan F.D. Barrett, Professor, Center for Global Initiatives, Osaka University

Course Conducted by Instructors with Practical Experience

Subhashni Raj, Assistant Professor, Urban And Regional Planning, University of Hawaii

Faainu Latu, Head of the Science Department, National University of Samoa

Felipe Sandoval, Assistant Professor, Faculty of Medicine, University of Tsukuba

Yuquan Zhang, Associate Professor, China-UK Low Carbon College, Shanghai Jiao Tong University

Instructor(s)

| Instructor Name | Name (hiragana) | Affiliation, Title, Course | Office | Extension | E-mail |
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| Brendan FD Barrett | ブレンダン・FD・バレット | Centre for Global Initiatives, Professor | 510 | 6132 | brendan.barrett.cgin@osaka-u.ac.jp |
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Cautions for Students

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