| | U-LAS70 10002 SE50 | | | | | |
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| **< >** | ILAS Seminar-E2 :Earthquakes & Volcanoes - Prediction and Hazards<br><br>ILAS Seminar-E2 :Earthquakes & Volcanoes - Prediction and Hazards | | | | | ENESCU Bogdan Dumitru |
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| | 2026 | **(1 )** | 10 (10) | | | |
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| | Earthquakes | / Volcanoes | | / Prediction | / Hazard | |

**[ ]**

We are going to read scientific papers related to a topic that is important both scientifically and socially. Is it possible to predict the occurrence of large earthquakes and volcanic eruptions? What are the current scientific advances in this field? We will also learn about earthquake and volcano hazard and discuss ways to reduce the risk of associated disasters.

**[ ]**

The course aims to show students the importance of studying about natural disasters caused by earthquakes and volcanoes, which may help finding better ways to reduce their risk. To facilitate understanding, some materials/vocabulary in Japanese will be provided during the seminar.

**[ ]**

Each student is going to choose a paper and prepare a short report (few PowerPoint slides), summarizing the main ideas of the study. The paper can be chosen freely; some broad suggestions include:
- The physics of great earthquakes (e.g., the 2011 M9.0 Tohoku-oki earthquake): any clues for predicting them?
- Large volcanic eruptions and possibilities of prediction;
- Earthquake and volcano hazard;
- Earthquake simulations and laboratory experiments;
- Artificial intelligence (AI) in Geosciences.

The 1st class will give students some broad options of topics/papers. During the 2nd class we will decide the paper that each student is going to present. I will exemplify with a research presentation during the 3rd and 4th classes. Starting with the 5th class until the 14th class each student is going to present the chosen paper and get feedback for improving his report. In the examination day, each student should present briefly his updated/revised report. The feedback class (i.e., the 15th class) will inform students about their overall performance and provide some concluding remarks.

Depending on the number of students and available time, during some of the classes we will visit the underground seismic base isolation at the "Kyoto University Clock Tower", go to the nearby Hanaore Fault and visit the Disaster Prevention Research Institute (DPRI), Kyoto University (Uji campus), to discuss with specialists in the field.

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For students interested in more advanced topics, including computer programming (in Python, C/C++, Matlab, Fortran or other computer languages) for Geosciences, I can provide additional materials and guidance.

**[          ]**

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Grading will be based on attendance and participation (60%) and presentation of chosen paper (40%).

**[      ]**

**[                        ]**

The student will have to prepare the assigned paper.

**[                        ]**

- Students can meet me during office hours with prior appointment.
- Since we may go outside the campus during the class (see "Course schedule and contents"), I advice students on taking accident insurance (e.g. Personal Accident Insurance for Students Pursuing Education & Research).

**[                            ]**