

Elective Course Description (2. Spring Semester)

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|--|---|------------------|-------------|--------|------------|-------------|
| Subject (English) | Evolution of the Western Pacific Island Arcs and Their Environments | | Semester | Spring | Day/Slot | |
| 科目名 (日本語) | 島弧系の進化と環境 | | | | | |
| Course Code | | Course Numbering | SGS-EAS802E | | Period | Apr. – Aug. |
| Instructor (Post) | Assoc. Prof. Jun Muto | | | | Campus | |
| | | | | | Building | |
| Faculty | Faculty of Science | | Credits | 2 | Class Room | |
| Class subject | | | | | | |
| Object and summary of class | | | | | | |
| <p>In this lecture course, students will learn some basic concepts and knowledge of 1) plate tectonics and 2) the tectonic history of the world including Japan Islands, 3) active faults and earthquakes, 4) ocean environments and their history. Also, this class deals with 5) the effect of the Western Pacific island arcs and Japan Sea to the Asian monsoon circulation.</p> | | | | | | |
| Keywords | Plate tectonics, Japan island, fault and earthquake, environment, climate | | | | | |
| Goal of study | | | | | | |
| <p>This course aims at presenting some basic concepts and information of plate tectonics and the tectonic history of the Asiatic continent and the Japanese islands, active faults and earthquakes, ocean environments and their history, and climate. The lectures include the problems how natural hazard and earth's environmental changes affect the living world and human life.</p> | | | | | | |
| Contents and progress schedule of class | | | | | | |
| <p>This course aims at presenting some basic concepts and information of plate tectonics and the tectonic history of the Asiatic continent and the Japanese islands, active faults and earthquakes, ocean environments and their history, and climate. The lectures include the problems how natural hazard and earth's environmental changes affect the living world and human life.</p> <p>Lectures will be given in the following topics:</p> <ul style="list-style-type: none"> -Outline of lectures and, Rheology of rocks and subduction zone earthquake cycles -Geology and morphology of Kawauchi and Hirose river area (outside small trip) -Earthquake triggering -Earthquakes and active faults -Faulting and electro-magnetic phenomena -Active faults in Japan -Lessons learned from the 2011 Tohoku-oki tsunami -Coral reefs in Japan. -Geology and biogeography of the Ryukyu Islands -Greenhouse paleoenvironments -Triggers and process of macroevolution and mass extinctions -Looking back of life -Climate change during the past 200 Myr. -The Great East Japan Earthquake -Monsoon circulation around Japan | | | | | | |
| Preparation | None | | | | | |
| Record and evaluation method | Attendance (50%) and submitted reports (50%) | | | | | |
| Textbook and references | TBC | | | | | |
| Self study | TBL | | | | | |
| In addition | | | | | | |