Department of Earth Sciences, National Taiwan Normal University

Master's Program Curriculum Map

Master's Program: Minimum Credits Required for Graduation: 25 Credits

Common Required Courses: Seminar (4)

Foundation Elective Courses

Atmospheric Group

Atmospheric Dynamics (II) (3)
Advanced Synoptic Meteorology (3)*
Fluid Dynamics (3)
Climatology (3)

Astronomy Group

Advanced Astrophysics (3)
Advanced Astronomical Observations (3)

Geology Group

Geochemistry (3)*
Geodynamics (3)
Stable Isotope Geology (3)*

Geophysics Group

Physics and Chemistry of the Earth's Interior (3)
Planetary Seismology (3)
Earthquakes of the Week (3)*

Oceanography Group

Introduction to Marine Chemistry (3)
Introduction to Marine Geology (3)*
Introductory Marine Biology (3)*
Innovation Trends in Oceanography (3)
Introduction to Marine Physics (3)

Advanced Elective Courses

Atmospheric Group

Atmospheric Physics (3)
Numerical Weather Prediction (3)
Tropical Meteorology (3)
Boundary Layer Meteorology (3)
Meso-scale Meteorology (3)
Statistical Analysis in Climate Research (3)
Topics in Meteorological Phenomena in Eastern Asia (3)
Climate Change (3)*
Meteorological Statistics (3)
Research Methodologies in Atmospheric Sciences (3)
Topics in Numerical Weather Prediction(3)
Topics in Monsoon Dynamics (3)*
Climate Change Science and Practical Data Analysis (3)*
Computer Application in Earth Sciences (3)
Numerical Methods in Earth Sciences (3)*

Astronomy Group

Radio Astronomy (3)
Active Galaxies (3)
Stellar Structure and Evolution (3)
Interstellar Medium (3)
Intergalactic Medium (3)
Tools for Modern Astronomy (3)*
Open Cluster (3)
The structure and Kinematics of the Galaxy(3)
Molecular Astrophysics (3)
Bioastronomy (3)
Astrostatistics (3)
High Energy Astrophysics (3)
Star Formation (3)

Geology Group

Mineralogy (including Lab.) (3)
Petrology (including Lab.) (3)
Volcanology and Volcanic Hazards (Including Lab.) (3)
Field Geology (including Lab.) (3)
Sedimentology and Stratigraphy (3)
Sequence Stratigraphy (3)*
Regional Geology(3)
Geology of Taiwan (3)
Petrographic Methods (3)
Advanced Igneous Petrology (3)
Advanced Structural Geology (3)*
Micro-Structural Geology (3)
Geo-technical Writing (3)*
Advanced Field Geological Techniques (3)*
Stress Regimes in Lithosphere (3)*
Continent and Supercontinent Evolution (3)
Core-Log Integration (3)*
Quaternary Geology and Environmental Changes (3)
Strain Analysis (3)*
Advanced Geothermics (3)
Principle of Geotechnical Engineering (3)
Economic Geology (3)*
Offshore Islands Geology of Taiwan (3)
Advanced East Asia Regional Geology (3)
Geological Survey(3)

Geophysics Group

Time Series Analysis (3)
Seismotectonics (3)
Paleomagnetism (3)
Physics and Chemistry of the Earth's Interior (3)
Earthquakes of the Week (3)*
Topics on Seismology (3)*
Topics in Geophysics (3)
Theoretical Geophysics (3)*
Advanced Geothermics (3)
The Dynamics of Fault Zone (3)
Advanced Geophysics (3)
Fundamentals of Active Remote Sensing (3)
Geophysical Planetary Exploration (3)

Oceanography Group

Ocean Circulation (3)
Numerical Ocean Circulation Modeling (3)
Satellite Data Analysis Techniques Applied to Oceanography (3)
Ocean Dynamics (3)
Water Wave Theory (3)
Satellite Oceanography (3)
Marine Environmental Education (3)
Applied Numerical Methods in Oceanography (3)
Resources and Sustainable Development (3)

Interdisciplinary Elective Courses

<Single-Domain Instructor Taught>

Computer Application in Earth Sciences (3) · **Numerical Methods in Earth Sciences (3)*** · Earth Science Data Processing (3)
Earth Sciences and Archaeology (3) · **Planetary Geology (3)*** · Earth Science Aspects of Renewable Energy (2)
Planetary Seismology (3) · Geophysical Planetary Exploration (3)

<Interdisciplinary Team Taught>

Earth System Sciences and Disaster Risk Assessment (3) · Earth Science Practicum (II) (3) · Earth System and Comparative Planetology (3) Scientific Field Expeditions of Earth Systems(3).Environmental Science (2)

Note: Numbers in parentheses () denote course credit units; * indicates EMI (English as a Medium of Instruction) courses.
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