# MOLLOY UNIVERSITY

## School of Education and Human Services

## Department of Teacher Education

**EDU 5900.33 Natural Forces in History: Fire, Water, Earth & Air**

**(3 Graduate credits)**

Summer 2026

Instructor: Paul Zaratin

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Office hours: Monday - Friday 3:00 PM - 7:30 PM

**Course Description:**

In Natural Forces in History: Fire, Water, Earth & Air students will explore how the four classical elements have shaped human civilizations, belief systems, and technological development throughout history. From volcanic eruptions and river valley settlements to wind-powered exploration and fire-based metallurgy, this course investigates the deep and ongoing interaction between nature's fundamental forces and the human story.

Through historical case studies, environmental analysis, and interdisciplinary lessons, educators will gain a broad understanding of how elemental forces have influenced migration, agriculture, city-building, spiritual systems, and disaster preparedness. Emphasis will be placed on integrating earth science, geography, and cultural history into dynamic classroom content.

This course is designed for K–12 educators, with adaptable content for diverse grade levels. All content aligns with SS.E.2.2: World History and NGSS (Next Generation Science Standards), supporting cross-curricular strategies in social studies, science, and environmental literacy.

**Shared Vision:**

The Molloy University Teacher Education faculty has derived its vision for the exemplary teacher from the University's mission statement, the four pillars of the Dominican tradition, comments and input from the Professional Education Unit's Advisory Board and degree candidates as well as numerous faculty discussions rooted in the department's knowledge base which undergirds the initial and advanced programs' curriculum, pedagogy, and values

The teaching professionals who complete Molloy's teacher preparation programs are distinguished by their ability to exemplify and promote core values in their own teaching. These values include:

Belief that all children can learn

Learner-centered and value-centered curriculum and pedagogy

Ethics and spirituality

Intellectual curiosity

Independence and risk taking, while promoting collective identity and responsibility

Diversity, multiculturalism and pluralism, including divergent thinking

Passion for teaching

Commitment to students and their communities

Civic responsibility through the promotion of social justice and interdependence

Commitment to democracy

**Course Objectives:**

- Analyze the historical role of natural forces (fire, water, earth, air) in shaping civilizations.
- Investigate how human societies adapted to and harnessed elemental forces over time.
- Examine the spiritual and symbolic meanings of natural forces in global cultures.
- Evaluate the impact of natural forces on settlement, trade, technology, and war.
- Explore environmental changes and natural disasters in historical context.
- Design interdisciplinary lesson plans that blend natural science and world history.
- Promote student inquiry around the interaction of nature and culture.
- Create classroom-ready content focused on elemental forces across geography and time.

**Course Format:**

This course will be offered online through Canvas, Molloy's learning management system. The course will open on the start date and close on the last day of class. This section is offered during the summer semester of 2026. There will be daily activities and discussions that must be completed at the end of each day. All work will be due on the last day of class.

**Required Readings, Videos, and Other Materials:**

All materials will be provided throughout the course.

**Course Requirements and Evaluation:**

- **Discussion #1: Nature as Teacher (5pts)**
  - Interpreting the elements in human history and personal introductions.

**Module 1: Earth – Mountains, Soil, and Settlement(10pts)**

- **Performance Objectives:** Participants will observe and describe how topography and soil quality influenced early human settlement patterns.
- **Topics:**
  - Geography as destiny: How topography shapes the boundaries of empires.
  - The role of fertile soil in the rise of sedentary societies.
  - Mineral wealth and its impact on early metallurgy and economics.

**Module 2: Water – Rivers, Oceans, and Rain(10pts)**

- **Performance Objectives:** Participants will compare and contrast the "Hydraulic Hypothesis" across major river valley civilizations.
- **Topics:**
  - Building civilizations around the Nile, Indus, and Yellow Rivers.
  - Maritime history: Oceans as barriers and highways for global trade.
  - Irrigation technology and the management of seasonal rains.

**Module 3: Fire – Innovation, Destruction, and Spiritual Significance(10pts)**

- **Performance Objectives:** Participants will identify evidence-based examples of how fire transformed human evolution and social gathering.
- **Topics:**
  - Fire as a catalyst for human evolution.
  - Pyro-technology: From the hearth to the forge.
  - The symbolism of fire in religious rituals and mythology.

- **Discussion #2: Weather, Wind, and Belief (5pts)**
  - Cultural and spiritual interpretations of air and atmospheric phenomena.

**Module 4: Air – Winds, Weather, and the Age of Exploration(10pts)**

- **Performance Objectives:** Participants will evaluate real-world problem-solving scenarios related to navigation and the Age of Exploration.
- **Topics:**
  - Harnessing Trade Winds and the expansion of the known world.
  - The impact of climate and weather patterns on military campaigns.
  - The technological history of air: From windmills to flight.

**Module 5: Case Study – A Civilization and Its Element(10pts)**

- **Performance Objectives:** Participants will analyze a specific case study to identify effective environmental adaptation strategies.
- **Topics:**
  - In-depth analysis: Egypt and the Nile or the Aztecs and Chinampas.
  - Adaptation strategies for extreme environments.

**Module 6: Natural Forces & Disasters in Historical Perspective(10pts)**

- **Performance Objectives:** Participants will evaluate case studies of societal resilience following major environmental shifts.
- **Topics:**
  - Impact of volcanic eruptions, earthquakes, and floods.
  - Societal resilience and the evolution of disaster preparedness.

**Module 7: Teaching the Elements – K-12 Strategies(10pts)**

- **Performance Objectives:** Participants will design active learning activities that align with Bloom's Taxonomy for environmental history.
- **Topics:**
  - Integrating SS.E.2.2 and NGSS standards.
  - Methods for blending earth science and cultural history.

**Module 8: The Anthropocene – Humans as a Natural Force(10pts)**

- **Performance Objectives:** Participants will analyze how human activity has become a primary natural force in the modern era.
- **Topics:**
  - Industrialization's impact on the four elements.
  - Engineering nature to prevent modern disasters.

**Module 9: Energy Transitions – From Fire to Fusion(10pts)**

- **Performance Objectives:** Participants will research and recommend technology tools to engage students in the history of energy evolution.
- **Topics:**
  - Evolution from wood and coal to hydroelectric, wind, and nuclear.
  - How energy shifts redrew the map of global power.

**Discussion #3: Ethics of the Elements (5pts)**

- A debate on environmental stewardship: Do we have a responsibility to restore natural forces to their "wild" state, or should we continue to harness them for progress?

**Module 10: The Future of the Elements & Global Citizenship (10pts)**

- **Performance Objectives:** Participants will design and advocate for a project-based learning initiative that addresses a local environmental challenge.
- **Topics:**
  - Climate change as the ultimate interdisciplinary challenge for the 21st-century student.
  - Project-based learning: Empowering students to find local solutions to global elemental challenges.
  - Summary of course themes: Moving from historical "adaptation" to future "sustainability."How energy shifts redrew the map of global power.

**Discussion #4: Final Thoughts & Pedagogical Reflections (5pts)**

- Reflecting on how this "Elemental" lens changes your approach to teaching World History and Science.
- Sharing one "Aha!" moment from the course that you plan to bring into your classroom.

**Module 11: Final Project – Lesson Plan Activity(15)**

- **Performance Objectives:** Participants will demonstrate an understanding of course concepts by creating a grade-level specific instructional unit.
- **Topic:**
  - Finalizing interdisciplinary lesson plans for classroom implementation.

**Methods of Instruction:**
Methodologies include instructor presentations, interactive applications, specific skill practice, small group discussions, and lesson development.

**Requirements:**
Participants will be expected to:

1. Complete all module activities and structured discussions.
2. Successfully complete the final "Lesson Plan Activity" project.

**Molloy University and School of Education and Human Services Policies and Supports:**

**Expectations of Academic Integrity for All Students**

Honor Pledge and Academic Honesty Policy

**Course Withdrawals**

View Withdrawal Policy for potential financial implications

View the Academic Calendar and/or the course syllabus for the last day to withdraw dates

**Incompletes**

Incompletes Policy

**Health and Wellness**

Student Health Services

Student Counseling Center (SCC)

**Center for Access and Disability (Access)**

Center for Access and Disability

**Technical Support**

Student Account, Technology and Canvas

**Ally for Canvas**

Supportive Tools and Resources/ Ally

**Use of Proctorio for Exams/Quizzes (if applicable)**

Proctorio Resources for Students

**Email Accounts**

Students are to utilize their Molloy e-mail account or via Canvas when communicating throughout the semester. Those who use a non-Molloy account may miss important messages. Students are responsible for responding to all methods of communication in a timely fashion relating to this course. Instructors will respond to emails from students within 24 hours. When/ if you email the instructor(s), please indicate what course you are in with the course number and section.

**APA Manuscript Style**

All manuscripts in the field of education are written in the style format of the American Psychological Association. Candidates in the Graduate Education Programs are required to purchase the Publication Manual of the American Psychological Association (7th ed.). (2010). Washington, DC: American Psychological Association.

All papers written in every course must adhere to the manuscript prescriptions defined in this manual.