**MOHAWK VALLEY COMMUNITY COLLEG**

**UTICA AND ROME, NEW YORK**

**Course Name: Topics in Geology: A Tectonic History of North America – GL203 Course Credit Hours: C - 3, P - 2, CR - 4**

1. ***Catalog Description***

This course explores the orogenic history of the earth and the tectonic events that shaped the planet, North America, and a selected focus locality in the United States. The laboratory portion of this course includes an embedded, post-semester 18 day field work experience at selected sites. The laboratory portion of this course involves rigorous physical activity. Please see the "course policies" for further discussion of this activity and accessibility. Topics include orogenic uplift, subduction mechanics, island arc formation, tectonism, primary sedimentary features, deformation processes, erosional features, and depositional environments. This course has a lab fee to cover the costs associated with travel.

Prerequisite: GL 101

Corequisite: PE 151

1. ***Student Learning Outcomes:*** *(verified by Assessment Liaison on: 10/10/2017)*

**• The students will be able to illustrate their knowledge of the difference between the geologic time periods from a stratigraphic and temporal construct.**

* + - **The students will examine major Orogenic events, their timing and location throughout the rock record.**
		- **The students will investigate the tectonic events that shaped North America**
		- **The student will evaluate the tectonic events that were involved in the Taconic Orogeny.**
		- **The students will connect the processes and mechanisms that drive plate tectonics to the rock formations are produced.**
		- **The students will be able to evaluate a locales rocks, minerals and fossil resources to interpret geologic history**
		- **The students will create a compilation of their field experience.**

1. ***Detailed Course Outline:***
	* 1. Geologic Review
		2. Rock Time vs. Temporal Time
		3. Test 1----------------------------------------------------------------
		4. Onset of tectonism: The Hadean Eon
		5. Developing the Earth’s crust: The Archean Eon
		6. The Oxygen Catastrophe: The Proterozoic Eon
		7. Test 2----------------------------------------------------------------
		8. Paleozoic
		9. Cenozoic
		10. Mesozoic
		11. Test 3----------------------------------------------------------------
		12. The Taconic an In Depth Look

 The Initial Collision

* + 1. The Taconic an In Depth Look

 Islands Arcs

* + 1. The Taconic an In Depth Look

 Continental Suturing

1. ***Detailed Practicum Outline\*:***

Day 1

Topic: Pre-Taconic Sequence and Taconic Foreland

Location: various throughout the Mohawk Valley and Saratoga Springs

Day 2

Topic: Taconic Foreland to Hinterland

Location: Various MA

Western Summit & (8) Eastern Summit, MA

Day 3

Topic: Taconic Orogeny and Shelburne Falls Arc

Location: Westfield, MA “Young et. al” & Shelburne, MA “Karabinos & Hepburn”

 (NEIGC) – Stops 2,3,5&7

“Karabinos and Hepburn. NEIGC 2001” – Stops 1 and 2

 Field Sites: (2) Westfield, MA, Sugarloaf Arkose, (3) Holyoke Basalt, (5) Dinosaur Footprints Trail, Holyoke, MA.

(1) Shelburne Falls, MA, (2) Hawley, MA

Day 4: Mount Monadnock, NH

Topic: Billings fold, continental roots

Location: Mt, Monadnock, NH

Field Site: Mt. Monadnock

\*UC goes to Camden State Park for mapping 360 Hill \*

\*MVCC goes to Fraconia Notch State Park\*

Day 5: Cannon Mountain, NH

 Topic: talus fields, exfoliation, look for graphite, glacial potholes

 Location: Lafayette campground, Cannon Mountain, Franconia notch state Park

 Field Site: Franconia trails to talus field. The Basin

 Day 6: Cannon Mountain, NH

 Topic: Slot canyon, Conway granite, glacial erosion & erratic’s.

 Location: Franconia Notch state park

 Field Site: Flume Gorge

Day 7: Mapping of 360’ Hill

 Topic: Camden hills State Park

 Location: Camden, NH

 Field Site: 360’ Hill

\*Meet UC in Camden ME & drive to Acadia National Park\*

Day 8: Acadia National Park

 Topic: Explore Acadia

 Location: Acadia, ME

 Literature: TBA

 Field Site: Sand Beach, The Beehive

Day 9: Acadia National Park

 Topic: Explore Acadia

 Location: Acadia

 Field Site: Sites of interest on Acadia Geologic map Natural Seawall, east of Bass Harbor

















Seawall picnic area (stop 7 of sites of interest)

Hull’s cove (stop 1)

Bar Harbor (stop 2)

Thunder hole

Jordan Pond (boob stop)

Mesozoic dikes on Cadillac Mountain road (1.7 miles from bottom\_ Top of Cadillac Mountain

 • Camp at Bass Harbor Campground

Day 10: Acadia National Park

Camp at Bass Harbor Campground

 Day 11: Mount Katahdin

 Topic: Mt Katahdin

 Location: Baxter State Park

 Drive to Baxter, hike into Chimney Pond.

 Camp at chimney pond

Day 12: Mount Katahdin

 Topic: Mt Katahdin

 Location: Baxter State Park Climb Mt Katahdin.

 Camp at Chimney Pond

Day 13: Mount Katahdin

 Topic: Mt Katahdin

 Location: Baxter State Park

 Hike out of Chimney Pond

 Drive to Mt Washington

Camp nearby (Crawford Notch or Moose Brook State Parks)

Day 14: Drive up Mount Washington

 Topic: Mt Washington

 Location: Mt Washington

 Field Site: Mt Washington

Day 15: Drive to Vermont

 Topic: Rift Facies

 Location: Grand Isle

 Field Site: Grand Isle

* Camp Grand Isle

Day 16: Highgate Gorge – Shelf edge

 Topic: Look at transition from shelf to shelf edge

 Location: Grand Isle

 Field Site: High Gate Gorge

* Camp Grand Isle

Day 17: Laurentian Shelf

 Topic: Thrust Fault Location: Grand Isle, VT

Examine Laurentian shelf rocks o Salmon Hole o Lone Rock Point

* UVM Geology museum
* Mt Philo
* Drive to Adirondacks
* Camp in Adirondacks

Day 18: Climb Algonquin through avalanche pass

 Topic: Grenville Orogeny Location: ADK Loj trailhead

Find the Anorthosite

* Drive back to Utica