## Graduate Courses 2022-2024

### Fall 2022

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Units</th>
<th>Instructor</th>
<th>Breadth area</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEL 214</td>
<td>Active Tectonics</td>
<td>3</td>
<td>Oskin</td>
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<tr>
<td>GEL 262</td>
<td>Paleobiology Seminar</td>
<td>3</td>
<td>Motani</td>
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<tr>
<td>GEL 290</td>
<td>Seminar</td>
<td>1</td>
<td>TBD</td>
<td>N/A</td>
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<tr>
<td>GEL 294</td>
<td>Structure &amp; Tectonics forum</td>
<td>1</td>
<td>Roeske</td>
<td>N/A</td>
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<tr>
<td>GEL 390</td>
<td>Methods of Teaching Geology</td>
<td>2</td>
<td>Billen</td>
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### Winter 2023

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<tr>
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<tbody>
<tr>
<td>GEL 230</td>
<td>Geomorphology &amp; River Management</td>
<td>3</td>
<td>Pinter</td>
<td>5</td>
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<td>GEL 240</td>
<td>Geophysics of the Earth</td>
<td>3</td>
<td>Rudolph</td>
<td>6</td>
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<td>GEL 251</td>
<td>Thermodynamics for Earth and Planetary Scientists</td>
<td>3</td>
<td>Mukhopadhyay</td>
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<td>GEL 281</td>
<td>Instrumental Techniques</td>
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<td>Yin</td>
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<tr>
<td>GEL 253</td>
<td>Petrology seminar</td>
<td>3</td>
<td>Ratschbacher</td>
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<td>GEL 2XX</td>
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<td>TBD</td>
<td>Atekwana</td>
<td>TBD</td>
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<td>Sumner</td>
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<tr>
<td>GEL 227</td>
<td>Stable Isotopes Biogeochemistry</td>
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<td>Atekwana</td>
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<td>Mukhopadhyay</td>
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<tr>
<td>GEL 218</td>
<td>Analysis of Structures in Deformed Rocks</td>
<td>3</td>
<td>Cowgill</td>
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<td>GEL 298</td>
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<td>TBD</td>
<td>Stewart</td>
<td>TBD</td>
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<tr>
<td>GEL 2XX</td>
<td>Topics in Terrestrial Paleoclimatology</td>
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<td>Montañez</td>
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<td>GEL 290</td>
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<tr>
<td>GEL 219</td>
<td>Fracture &amp; Flow of Rocks</td>
<td>3</td>
<td>Billen</td>
<td>3 or 6</td>
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<tr>
<td>GEL 232</td>
<td>Oceans and Climate Change</td>
<td>3</td>
<td>Hill</td>
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<td>GEL 251</td>
<td>Isotope Geochemistry &amp; Cosmochemistry</td>
<td>3</td>
<td>Yin</td>
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### Course Descriptions

#### Fall 2022

**GEL 214: Active Tectonics (Oskin)**  
Graduate course breadth area: #3  
Description coming soon.

**GEL 262: Paleobiology Seminar (Motani)**  
Graduate course breadth area: #1  
Description coming soon.

**GEL 290: Seminar (TBD)**  
Graduate course breadth area: N/A  
Description coming soon.

**GEL 294: Structure & Tectonics forum (Roeske)**  
Graduate course breadth area: N/A  
This on-going discussion group meets once/week to discuss a paper selected by participants in the group. The theme of the articles varies each quarter; the seminar's goal is to emphasize breadth and we read and discuss a range of articles that cover the diverse interests of members of the group. As an example, we have recently read articles on subduction zone processes, ranging from UHP metamorphism and exhumation, to response of the upper plate to degree of coupling in the subduction zone. If schedules allow, we plan a multi-day field trip to examine rocks that may show some of the processes of interest to the group and focus the reading around the field trip.

**GEL 390: Methods of Teaching Geology (Billen)**  
Graduate course breadth area: N/A  
Description coming soon.

#### Winter 2023

**GEL 230: Geomorphology & River Management (Pinter)**  
Graduate course breadth area: #5  
Description coming soon.

**GEL 240: Geophysics of the Earth (Rudolph)**  
Graduate course breadth area: #6
Description coming soon.

**GEL 251: Thermodynamics for Earth and Planetary Scientists (Mukhopadhyay)**  
*Graduate course breadth area: #4*  
Description coming soon.

**GEL 281: Instrumental Techniques (Yin)**  
*Graduate course breadth area: N/A*  
Description coming soon.

**GEL 290: Seminar (TBD)**  
*Graduate course breadth area: N/A*  
Description coming soon.

**Spring 2023**

**GEL 253: Petrology seminar (Ratschbacher)**  
*Graduate course breadth area: #4*  
Description coming soon.

**GEL 2XX: TBD (Atekwana)**  
*Graduate course breadth area: #TBD*  
Description coming soon.

**GEL 2XX: TBD (Sumner)**  
*Graduate course breadth area: #TBD*  
Description coming soon.

**GEL 290: Seminar (TBD)**  
*Graduate course breadth area: N/A*  
Description coming soon.

**GEL 294: Structure & Tectonics forum (Roeske)**  
*Graduate course breadth area: N/A*  
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**Fall 2023**

**GEL 227: Stable Isotopes Biogeochemistry (Atekwana)**  
*Graduate course breadth area: #4*  
Description coming soon.

**GEL 240: Geophysics of the Earth (Stewart)**
Graduate course breadth area: #6
Description coming soon.

**GEL 298: TBD (Mukhopadhyay)**
*Graduate course breadth area: #TBD*
Description coming soon.

**GEL 290: Seminar (TBD)**
*Graduate course breadth area: N/A*
Description coming soon.

**GEL 294: Structure & Tectonics forum (Roeske)**
*Graduate course breadth area: N/A*
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**GEL 390: Methods of Teaching Geology (Billen)**
*Graduate course breadth area: N/A*
Description coming soon.

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**Winter 2024**

**GEL 218: Analysis of Structures in Deformed Rocks (Cowgill)**
*Graduate course breadth area: #3*
Description coming soon.

**GEL 298: TBD (Stewart)**
*Graduate course breadth area: #TBD*
Description coming soon.

**GEL 2XX: Topics in Terrestrial Paleoclimatology (Montañez)**
*Graduate course breadth area: #TBD*
Description coming soon.

**GEL 290: Seminar (TBD)**
*Graduate course breadth area: N/A*
Description coming soon.

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**Spring 2024**

**GEL 219: Fracture & Flow of Rocks (Billen)**
*Graduate course breadth area: #3 or 6*
Description coming soon.

*Updated December 2021*
GEL 232: Oceans and Climate Change (Hill)
Graduate course breadth area: #2
Description coming soon.

GEL 251: Isotope Geochemistry & Cosmochemistry (Yin)
Graduate course breadth area: #4
Description coming soon.

GEL 253: Petrology seminar (Ratschbacher)
Graduate course breadth area: #4
Description coming soon.

GEL 290: Seminar (TBD)
Graduate course breadth area: N/A
Description coming soon.

GEL 294: Structure & Tectonics forum (Roeske)
Graduate course breadth area: N/A
This on-going discussion group meets once/week to discuss a paper selected by participants in the group. The theme of the articles varies each quarter; the seminar’s goal is to emphasize breadth and we read and discuss a range of articles that cover the diverse interests of members of the group. As an example, we have recently read articles on subduction zone processes, ranging from UHP metamorphism and exhumation, to response of the upper plate to degree of coupling in the subduction zone. If schedules allow, we plan a multi-day field trip to examine rocks that may show some of the processes of interest to the group and focus the reading around the field trip.