



*Supplement of*

## **The Mid Atlantic Appalachian Orogen Traverse: a comparison of virtual and on-location field-based capstone experiences**

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*Supplement:*

***Virtual Learning Questionnaire for SST: Stratigraphy, Structure, Tectonics***

1. Which year and semester were you enrolled in SST (Stratigraphy, Structure, and Tectonics) at James Madison University?

*For example, "Fall 2020"*

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2. (For virtual students only) Were you concerned about doing online field trips for SST in Fall 2020?

A) Yes

B) No

C) Partly

3. From the beginning of the semester until after completion of final deliverables, how much overall academic growth (on a scale from 1-10 with 1 showing no academic growth at all and 10 showing the most academic growth possible) did you gain in regards to your knowledge of course content?

1	2	3	4	5	6	7	8	9	10
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4. **Specific Growth Topics:** In addition to overall academic growth in the SST course, the following nine questions pertain to personal growth in key topics within the SST course curriculum. Rate your academic growth in each topic from the beginning of the semester until after submission of final deliverables. *These questions will be used to compare knowledge gained throughout this course for students who took SST either in Fall 2020 virtually or in semesters prior to Fall 2020 in-person.*

**Rank each of these topics discussed in SST on a scale of 1-10 with 1 showing little academic growth at all and 10 showing the most academic growth possible. How much academic growth did you experience in:**

- i. **Structural Cross Sections (Interpreting cross sections and identification of geologic structures as well as constructing cross sections in lab and of the mid-Atlantic region of the United States for final deliverables):**

1	2	3	4	5	6	7	8	9	10
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- ii. **Tectonic Interpretations of Rocks and Minerals (using Wilson Cycle diagrams and Stages; placing specific rocks to their appropriate stages. e.g. recognizing that a flood basalt would form along mafic hot spot volcanoes on a geologic map)**

1	2	3	4	5	6	7	8	9	10
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- iii. **Depositional Environments (Overall understanding of key characteristics, as well as identifying depositional environments within rocks and rock structures during lab and along outcrops during field trips)**

1	2	3	4	5	6	7	8	9	10
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- iv. **Constructing Strip Logs (Identifying rock compositions, textures, and structures, as well as constructing a strip log for Briery Gap using images and/or going to the Briery Gap outcrop)**

1	2	3	4	5	6	7	8	9	10
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- v. **Evaluating Structural Concepts and Deformations (Understanding types of folds and faults, principal stresses, recognizing deformations post-deposition in rock images and/or along outcrops, and applying structural concepts and formulating a structural history of the Mid-Atlantic region)**

1	2	3	4	5	6	7	8	9	10
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- vii. **Interpreting and Applying the Wilson Cycle (Knowing each Stage of the Wilson Cycle and being able to relate lecture and “chalk talk” content to coordinating Stages of the Wilson Cycle for course work and for your tectonic synthesis)**

1	2	3	4	5	6	7	8	9	10
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- viii. **Understanding Tectonic Events Through Time (Not solely the memorization of the Wilson Cycle, but also recognizing precursor and following events; e.g. recognizing that the creation of new oceanic crust of Stage C is commonly preceded by the hot spot and rifting of Stage B)**

1	2	3	4	5	6	7	8	9	10
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- ix. **Geologic Time Scale (Knowledge of the geologic time scale and ability to apply the time scale during field trips virtually or at outcrops, and accurately place outcrops in order from the Grenville Orogeny to the recent Rifting of Pangea)**

1	2	3	4	5	6	7	8	9	10
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5. **If given the option in the future based solely on your personal SST experience, would you prefer enrolling in in-person, virtual, and/or hybrid JMU Geology and Earth Science courses? (e.g. Preferred method might be a hybrid course having lecture in-person and having field trips virtually for personal reasons)**

- A) In-person                      B) Virtual                      C) Hybrid                      D) Other

*\*\*Please explain your reasoning behind your response to this question:*

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6. **Did you experience any learning challenge(s) and/or disabilities that impacted your ability to engage throughout the semester in this course? (e.g. Dyslexia, Dysgraphia, Attention Deficit Disorder, Attention Deficit Hyperactivity Disorder, Dyscalculia, Non-Verbal Learning Disabilities, Oral/Language Disorder, etc.)**

*For the purpose of this research, disclosure of any learning challenges or disabilities will not be required or asked in this questionnaire. Rather than specificities, numerical statistics of the number of subjects whose learning experience in SST may have been impacted their learning capabilities will be assessed.*

- A) Yes                                      B) No

*\*\*If you answered yes to Question 6:*

- i. **In what ways has your learning challenge(s) and/or disability/disabilities impacted your capacity to fully engage, if any, while enrolled in SST?**

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- ii. **Do you think that enrolling in alternative forms of SST would have made this course more accessible for your learning disability/disabilities?**

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- iii. **What suggestions could you offer the JMU Geology and Environmental Science Department to increase accessibility options, if any, for your disability/disabilities?**

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7. **Did you experience any physical challenge(s) and/or (in)visible disabilities that impacted your ability to engage throughout the semester in this course? (e.g. Common visible disabilities including: Autism, Tourette Syndrome, Walking Disability, Paralysis, Cerebral Palsy, Muscular Dystrophy, Multiple Sclerosis, etc.; Common invisible disabilities including: Obsessive Compulsion Disorder, Asperger's, Chronic Illnesses, Vision problems, Hearing Loss or Hard of Hearing, Anxiety, Depression, etc.)**

*For the purpose of this research, disclosure of any learning challenges or disabilities will not be required or asked in this questionnaire. Rather than specificities, numerical statistics of the number of subjects whose learning experience in SST may have been impacted their learning capabilities will be assessed.*

- B) Yes                                      B) No

*\*\*If you answered yes to Question 7:*

i. In what ways has your physical challenge(s) and/or (in)visible disability/disabilities impacted your capacity to fully engage, if any, while enrolled in SST?

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ii. Do you think that enrolling in alternative forms of SST would have made this course more accessible for your physical (in)visible disability/disabilities?

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iii. What suggestions could you offer the JMU Geology and Environmental Science Department to increase accessibility options, if any, for your disability/disabilities?

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8. Please rate (on a scale of 1-10 with 1 representing no accessibility accommodation for students with disabilities and 10 representing the most possible accommodations possible) how accessible you think obtaining a geology degree at JMU is for students with previously listed learning, visible, and/or invisible disabilities prior to virtual learning options in 2020.

1	2	3	4	5	6	7	8	9	10
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9. With an increase of technology used in recent years, do you think university-level geology and earth science departments should incorporate more virtual learning options in a classroom setting if this would increase accessibility accommodations for students with disabilities? (Some currently used programs include Google Earth, Geographic Information Systems (GIS), cross section simulation software, cartography computer programming, or other related geoscience technology)

C) Yes

B) No

*\*\*If you answered yes to Question #9, explain any specific virtual learning ideas that could be designed with intent to improve accessibility in the geoscience field:*

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10. Do you think that some incoming or current community college or university-level students with learning, visible, and/or invisible disabilities may feel deterred from declaring field-work based geoscience majors and/or minors due to their disability/disabilities?

A) Yes

B) No

C). Maybe

- 11. (question only for students who answered yes previously to having a learning, visible, and/or invisible disability) In courses you have taken within the Geology and Environmental Science department at JMU thus far, have you experienced any instances where you felt as if your disability did not enable you to complete tasks that a student without disabilities may have been able to?**

*If so, please explain.*

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