MATH 106
Spring 2020
MUSEUM assignment: The mathematics of museums and the museum of mathematics

Mathematics is everywhere. As you may have noticed by now, this course challenges you to become aware of and curious about the mathematics around you, especially as it presents itself in unexpected places. This assignment will have you visit a museum and interact with its exhibits using mathematics as a lens. We will then ask you to reflect upon that experience, and produce an exhibit of your own to showcase to the MSU community.

Part I (due before March 18):

1.) **The museum visit.**

Option A: We have rented a school bus for a fieldtrip to the Agnes Denes Exhibit at THE SHED in Manhattan on Friday, February 21st. If you choose this option, we will arrange the transportation and purchase the ticket for you. There will be time built in for free exploration of the area near THE SHED (including Hudson Yards and the Spanish Mercado).
- Agnes Denes Exhibit at the SHED--Hudson Yards, Manhattan
- Friday, February 21st.
- Meet on campus at 9:15. Bus will leave at 9:30 and get there around 10:15. We will leave Manhattan at 2:30 to get back to MSU by 3:15.

Option B: Sprague Library has free passes to select museums for MSU students.
- A visit to any of these museums would be suitable for this assignment. Information on how to obtain the free passes can be found at https://www.montclair.edu/library/services-and-spaces/borrowing/museum-passes/

Option C: You may choose to visit a museum of your choice (including THE SHED) on your own time, on your own dime. If you choose a museum not mentioned above, please consult with your instructor first.

2.) **To complete before March 18**:
- Submit evidence of your visit to Canvas. This can be a picture of your ticket stub, a selfie in front of your favorite exhibit (as long as it's allowed!) or a picture of you with the museum map, for example. **The evidence must show the date of visit.**
- Reflection paper. The instructions for this will be on Canvas sometime soon.
- Initial proposal for Museum of Math exhibit (Part II, described below). The specific guidelines for this will be on Canvas. You will receive feedback on this to help you refine your goals.

Part II (due before April 15): **Our MSU Museum of Math**
        Upon approval of your proposal, you will undertake the task of creating an exhibit for our MSU Museum of Math (if you can think of a better name for this, we would love to hear it!).

Your exhibit may be selected to represent your class in the *MSU Museum of Math*. The Museum of Math is a special end-of-semester event organized by the Department of Mathematics. The projects selected for this event will on full display in some prominent spot on MSU campus (TBA), from May 4-8th during the last week of classes. Think of your exhibit as having the potential to attract other students to mathematics and to challenge others to see mathematics differently or to think of another discipline in a mathematical way.

A group of faculty members will serve on a panel to select the finalists. The work of the finalists will be displayed at the MSU Math Museum. The criteria for this, as well as for your final grade on the project will be as follows:
- Final product is visually appealing
- Mathematics is explained thoroughly and accurately
- Connections to mathematics are made explicit
- Project is innovative—new ideas or perspectives are explored
- Project is of high quality—enough to be displayed in a public forum
  - Any art pieces must be professional quality
  - Descriptions must be written clearly
- If the project was collaborative, it clearly represents contributions by all members of the group

Some museum exhibit ideas:
- An app/program that you develop
- Video
- Poster
- Diorama
- Art piece
- Narrated powerpoint

- Live exhibit, if at least one person can be there for each of the performances
- Music piece
- Interactive demonstration
- Book or a booklet
- Children's book
- **So many other possibilities**

Some ideas for the content of your exhibit:
- Connect to music, beat, dance
- Visual arts
- Photography
- Explore metaphors, literature
- Aerial videos
- ImageJ & fast burst lite
- Black holes
- Climate change
- Sports

- History
- Psychology
- Business
- Poetry
- Other subdisciplines of mathematics
- Ecology, populations
- Physics
- **So many others…**

Project Requirements
- You may work on your own or in groups of up to three.
- Your project must make explicit connections to mathematics. These connections must be explained in your display and written description.
- Due April 15th: One per group
  - Final museum display. Selected displays will be exhibited in a very visible place, somewhere on campus. (It's not that we're trying to be cryptic about this—it's just that we haven't reserved a space yet.)
  - One-page description to accompany your product, making explicit connections to mathematics. Descriptions of winning entries will be laminated and displayed with your project.
- May 6th: One per student
  - Summary report:
    - What was your inspiration or motivation?
    - What mathematics did you explore?
    - Explain the mathematical phenomena as it connects to your project
    - Reflections on the project
      - What did you learn?
      - What will you take away?
      - How does the project connect to your interests or discipline?
  - Group accountability sheet