

Honors Option

- **Project Description.** In the spirit of three dimensional analytic geometry, we will explore basic aspects of geometry on a sphere, as discussed in Chapters 4-6 of the book:
 - T.G. Feeman, Portraits of the Earth – A Mathematician Looks at Maps, Mathematical World vol. 18, American Mathematical Society, 2002.
- **Project Rationale.** In a flat plane, the shortest path between two points is the straight line connecting them. However, on a sphere, there are no straight line segments, and the measuring of distances is more complicated than on a plane. So, how does the shortest path between two points on a sphere look like? In this project, we will answer this and other related questions. This topic is related and extends some of the concepts we discuss in Math 230 and Math 231.
- **Supplemental Work.** There will be additional reading materials (from the book by Feeman) and additional homework problems that are relevant to the project.
- **Agreement and Deadline.** We will start working in March and will meet on a weekly basis, aiming at finishing the project by April 30. The student will prepare a 15 min presentation about one of the relevant chapters.
- **Percentage of Course Grade.** Project will be used to replace 10% of the quiz grade.