I found the introduction on Mapping Projections to be interesting in regards to the kind of methodology that goes into developing a map. Learning about the advantages and disadvantages of equal-area, conformal, equidistant and several other map projections allowed me to understand the intent of map drafters. Additionally, learning about the various effects of cylinder, cone, and plane projections provided me with a better understanding in how meridians, latitude, and true angles of a map are represented. Being someone with an engineering background, understanding that there is a mathematical relevance to these projections is interesting when one considers the issue of traversing and sensing an unknown space. Learning about the coordinate systems used for navigation was also interesting as it pertains to all forms of navigation and location. Understanding the science of latitude and longitude is helpful towards understanding what the GPS readings in Homework 3 are referring to. Learning about the origins of these measurement was interesting as it explains the relevance of clocks in navigation and why they are valuable for determining location. Mapping Projections also talked about the use of grids and UTM values as a way to find eastings and northings. As it is for most systems dealing with approximations, I find it important to understand the relevance of modeling the world as an ellipsoid for latitude, longitude, and plane coordinates. Also, it is important to understand that these ellipsoids cannot perfectly model the elevations and contour lines of the earth.

I then went onto to about the UTM system and various open source resources out there for map projections. The Mercator projection acts as a conformal projections which allows the map to represent angles and shapes as one would encounter them in a real situation. However, the lack of proper scale makes me question whether or not such a system should be trusted for trying to understand the size of an area one is looking for. In the case of UTM, implementing an oblique cylinder is the optimal solution for maintaining scale accuracy in narrow areas. Understanding how grids are modeled with ellipsoids is important in understanding the differences that two similar maps can have in successfully representing a map. In navigating a warzone, it is pretty clear how being off by a few hundred meters is a significant flaw in a map design. My favorite sentence amongst these articles was by far “my philosophy is that if you refuse to use a useful tool because of its origins, you probably have other problems that will keep you from being an effective scientist.” I have worked for a FFRDC so I fully agree with this statement.