Lesson 1 Supplementary Reading: 3D Geometry and Reference Frames

For more information on 3D geometry and reference frames, check out the resources below:

- Read Chapter 6, Sections 1 to 3 of Timothy D. Barfoot, State Estimation for Robotics (2017) (available for free).

- Make use of this online interactive quaternion calculator and a handy online 3D rotation converter.

- Read the Wikipedia article on rotation matrices.

Supplementary Reading: The Inertial Measurement Unit (IMU)

To learn more about IMUs and their applications, check out the resources below:

- Read the page about IMUs on Wikipedia.

- Follow along with the PDF slides from Gordon Wetzstein's lecture on IMUs at Stanford University.

- Examine a technical description of inertial navigation in Chapter 11, Section 1 of Jay A. Farrell, Aided Navigation (2008).

- Reflect on 4o years of advances in inertial navigation, summarized in this article by Anthony King (1998) from the magazine GEC Review.

Supplementary Reading: The Global Navigation Satellite System (GNSS)

To learn more about the evolution of GNSS, check out the resources below:

- Read this article about the evolution of the various GNSS constellations.

- Review overviews of the Galileo global navigation satellite system developed by the European Union, the GLONASS system developed by the Russian Federation, and COMPASS (BeiDou-2) developed by the People's Republic of China.