

# Instructional Materials/Required Reading List

*This list includes **instructional resources materials list** for individual classroom educators by content area as defined in SB 704: Allowing parents, custodians, and guardians to inspect instructional materials in classroom.*

During this course, we will explore a wide range of topics, some of which you might find upsetting or that may cause you to experience strong emotions. All reading materials that we will read in class are listed in the course syllabus. Please feel free to review these ahead of time. Please keep an open mind and be respectful of others when reading and discussing these materials, as this will help to facilitate the learning environment. If you feel a topic may be emotionally challenging to you, I am happy to discuss it with you before it comes up in class and we will work together to make accommodations or discuss other learning opportunities. A link to all supplemental materials and resources are posted on the teacher’s Schoology page. If you have any questions, please contact the teacher and/or the principal.

## James Rumsey Technical Institute Instructional Resources for School Year 2024-2025\*

<b>Teacher Name: Eisenhart</b>  <b>Course (or Content Area):</b> <b>AC Aerospace Engineering</b> <b>Course 3</b>	<b>Name (and possibly website) of Instructional Resource Series (county, school, and/or teacher determined) and required reading</b>  <b>Note: The following are all PDF articles located in each projects resources folder in Schoology</b>
Project 1 Learning to Fly Using Flight Simulators	<ol style="list-style-type: none"> <li>1. 14 CFR 61.87 - Solo requirements for student pilots</li> <li>2. 14 CFR 61.113 - Private pilot privileges and limitations</li> <li>3. AIM VFR Instructions</li> <li>4. Air Force Flight Simulators May Help Cut Training Costs</li> <li>5. American Fliers</li> <li>6. Center of Gravity</li> <li>7. Center of Mass</li> <li>8. Create a Center of Gravity</li> <li>9. Pilots wanted, no experience necessary-JetBlue</li> <li>10. Research on Pilot Training Methods Using Flight Simulators</li> <li>11. The Mathematics of Aircraft Navigation</li> </ol>
Project 2 The Evolution of Navigation	<ol style="list-style-type: none"> <li>1. Aviation System Performance Metrics</li> <li>2. IFR AERONAUTICAL CHART SYMBOLS</li> <li>3. Planning and Organizing Proposals and Technical Reports</li> </ol>
Project 3 Basic Helicopter Flight and Control	<ol style="list-style-type: none"> <li>1. Aviators Eager to Witness Birth of Future Vertical Lift Aircraft</li> <li>2. Linking Words</li> <li>3. Mistaken Ideas Concerning Helicopters</li> <li>4. Sikorsky reveals first S-97 Raider</li> </ol>
Project 4 Control and Stabilizing Systems	<ol style="list-style-type: none"> <li>1. Feedback Control theory for PC automation in the home</li> <li>2. Flight Controllers Explained</li> <li>3. MPU 6050 Tutorial – How to Program the MPU 6050 with Arduino</li> <li>4. PID Controllers Cupertino High School Robotics</li> <li>5. PID for Dummies</li> <li>6. PID Theory Explained</li> <li>7. Process Control for Dummies</li> <li>8. Types of Feedback Control</li> </ol>

<p>Project 5 Drone Build and PID Integration</p>	<ol style="list-style-type: none"> <li>9.</li> <li>1. FAA Drone Operating Rules</li> <li>2. FAA Drone Operating Regulations</li> <li>3. Drone Loading and Performance</li> <li>4. Design and Development of Quadcopter Prototypes</li> <li>5. What is a Multicopter and How It Works</li> <li>6. Quadcopters</li> <li>7. Quadcopter Dynamics, Simulation, and Control</li> <li>8. National Airspace</li> </ol>
<p>Project 6 Autonomous Drone</p>	<ol style="list-style-type: none"> <li>1. Hacker Guide</li> <li>2. How to Build Your Own Quadcopter Autopilot</li> <li>3. Insect Inspired Eye</li> <li>4. MAVwork Parrot ARDrone</li> </ol>

\*Optional reading materials are not included.