



AMNH Aviation Education: Flights of Discovery

Semester I: Flights of Discovery I: The Wonderful Big Amazing World of Aviation

The objective of this course is to familiarize students with the World of Aviation in the most holistic sense. To provide them an avenue to learn about and explore potential career paths and appreciate the many opportunities for careers within aviation. Further the course will expose students to examples of real-world application of science and math techniques and methodologies.

Aviation is a very important component of the US economy with commercial aviation representing 8.4% of all jobs. Many of these jobs are undermanned and forecasts show continued need into the future. However, unless students have personal exposure to aviation, many are unfamiliar with the types and scopes of occupations available. Using the imagery of an airplane setting on a tarmac and asking the question “What careers are involved in putting that aircraft on the tarmac?” students will be asked to compile a list of careers. Some of those careers will be explored in detail over the course of the semester. Each career detailed will include a visit from a profession in that career field, an overview of the career field including salary, demand and entry requirements and finally a small project pertaining to the career. At the end of the semester students will be asked to explore more fully an area of personal interest. They will be required to shadow a professional, develop a presentation for the class and deliver the presentation. Grading is pass/fail based on attendance, participation and the final project.

Semester II: Flights of Discovery II: Intro to Aviation: Past, Present and Future of Aviation

The objective of this course is to provide students with a perspective of aviation from the past, through modern day and using technological clues, forecast the future. The course begins with a look at how aviation developed from observations of the natural world to non-motorized flight. From there the evolution of the airplane is traced via technological advancements from the Wrights to the space shuttle. Historical perspective is provided to give context to understand how not only science, but art, political landscape and personalities shaped the development of the aircraft. Then the course delves into the physics of flight. The forces of flight are explained and appreciated. Students will be tasked with designing and developing an airfoil and testing it in a wind tunnel. Principles of pilotage such as flight planning, navigation, and meteorology will be covered. Finally, emerging technologies which will frame the future of aviation will be covered such as automation of air traffic control, engine design, fuel and materials. Students will be tasked with picking one subject from the past, present or future and exploring it more deeply and presenting findings to their classmates. Grading is pass/fail based on attendance, participation and the final project.