



Community Education Spring 2024

The Leading Edge: A History of Aviation

Instructor:

Gunnar Abramson

Phone:

503-319-6547

Location:

CCT 338

Time:

1:30-3:20

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Course Description:

We live in a world transformed by the combined efforts, talents, and sacrifices of dreamers, inventors, engineers, and civil and military aircrew, all part of a process of technological development begun half a millennia ago. This class will focus on that process and the challenges, personalities, technologies, and historical interludes, that pushed it forward.

Learning Outcomes: *As a result of taking this course, students will:*

Learn the historical outlines of the inter-related technologies by which heavier than-air aircraft were made a reality: propulsion, airfoils, control elements, navigational aids and related ground infrastructure.

Understand how the Renaissance, the Industrial Revolution, Two World Wars, several smaller conflicts, a Cold War, and the concomitant rise of the military-industrial complex, contributed to the creation of aviation's modern age.

Examine how inventors, the vicissitudes of war and the commercial realm, and aircrew themselves, worked together to overcome conceptual and technological challenges and how future impasses might themselves be overcome and the nature and shape of future aviation be further changed.

Course Schedule:

Week 1

Tomb birds, Icarus, and Yearning to Indulge the "Platonic Ether:" The Idea of Flight in the Ancient World

Cayley, Hargrave, and Lillienthal: The Glider Makers

Technology Spotlight: Bernoulli's Theorem and Airfoils.

The Wrights, Gustav Weisskopf, Samuel Langley, and Glenn Curtiss: Fathers of Powered Flight

Dramatis Personae in the Air: Augusto Santos Dumont

Technology Spotlight: Powering Flight: The First Engines

Week 2

The Aeronauts: Records Broken, Crossings Made, and Air Shows to Thrill the Masses Part One.

Canvas Falcons: The Great War and the Great Incubator of Aviation Development

Dramatis Personae in the Air: Louis Bleriot, Thomas Sopwith, and Hugh Trenchard

Technology Spotlight: Engine Development II and the Machine Gun Interrupter Gear

Week 3

The Barnstormers: Records Broken, Crossings Made, and Air Shows to Thrill the Masses Part Two.

Airliners and "Clipper Ships:" Inter-War Commercial Air Transport

Dramatis Personae in the Air: Jacques Schneider, Juan Trippe, and Italo Balbo.

Technology Spotlight: The Development of Aerial Navigation and The Rise of Naval Aviation

Week 4:

“Adlertag:” Luftwaffe vs. RAF

“Kokutai:” Japan’s Airpower

Turning the Tide: Allied Air Efforts and WWII

Dramatis Personae in the Air: Adolf Galland, Minoru Genda, and Hap Arnold.

Technology Spotlight: Engine Development Part III, Aircraft Industries at War

Week 5:

From Pistons to Jets: The Aviation World – Military and Civil - of the Cold War

Korea: The First Jet Battles

“Above the Weather:” Civil Aviation Challenges and Changes Post-WWII

Spaceflight: Public and Private

Technology Spotlight: Jets

Selected Bibliography/Resources: A bibliographical list - organized by sub-topic - will be provided two week before class begins with further sources e-mailed to students thereafter.

Class Evaluation: Class evaluations are sent by email. Sometimes the email will be delivered to your “junk mail,” but we can assure you it’s from Clark College only. Your responses are completely anonymous. If you do not see your evaluation immediately after class, look in your junk mail and send it to your email address. If you do not receive an evaluation, please email Continuingeducation@clark.edu or call 360.992.2939.

Inclement Weather: Include inclement weather in fall and winter only

If the College cancels due to icy conditions you can find this on the college website www.clark.edu ~ If Community Education concludes that the weather is too hazardous we may also decide to cancel this class. In that case you will receive both a phone call and email. Make certain that we have your correct contact information by viewing the class roster.

Looking for classes? Visit our Community Education webpage: www.clark.edu/cce/