Unmanned Vehicle University

UNMANNED EDUCATION

THE

Only Institution

Dedicated to Unmanned Air, Ground & Sea Education

(c) 2012 Unmanned Vehicle University
US Government will spend $6 Billion for Unmanned Vehicle Procurement in 2013. FAA approving UAVs to fly in civil airspace. Thousands of jobs available.

WHAT WE DO

Educational and training for unmanned vehicles used in air, ground, and sea applications

SERVICES

Providing the most comprehensive unmanned education in the world

UAV Executive Certificate Course
Unmanned System Short Courses
MS in Unmanned Systems Engineering
PhD in Unmanned Systems Engineering
Unmanned Air, Ground and Sea Vehicles
All Courses Available On Site or Online
Corporate Training
Speaking Engagements
Consulting

UVU

Send your new employees to our school to provide them with the most comprehensive unmanned education in the world. Help them be more informed about your products and services so they can be better team players.

Unmanned Vehicle University

Our place or yours

Send your employees to our very modern facility at 917 Pacific Ave. We have a spacious conference room, refreshments and very accommodating staff. If you prefer, we can schedule a visit to your site with one of our instructors. If you are interested in some hands on flight training, we can schedule time at our flight facilities.

Our courses

We offer the most comprehensive Unmanned courses in the world. Our topics are very specialized and cover the latest advances. Unmanned vehicle technologies are progressing at a very rapid pace. At UVU we continuously upgrade our courses to keep up. Real world examples are used to illustrate the underlying technologies.

Our Instructors

Our subject matter experts are world class. They have an average of 25 years of experience in specialized unmanned topics. Most are involved in research and development for new unmanned technologies. They have experience with both civil and government organizations that are developing and employing unmanned systems.
UAV Education & Training
Unmanned Vehicle University Website

MS & PhD Degrees
Unmanned Sys Eng
Executive Certificate
All courses online

Onsite
3 Day Short Courses
Corporate Training
Taught Onsite
Expert instructors

www.uxvuniversity.com
Faculty

- Dr (Col Ret) Jerry LeMieux, PhD Electrical Engineering, MIT, Boston University
- Dr Annie Shen, Ohio University Faculty, PhD Applied Mathematics
- Dr (Col Ret) Richard Baker, Indiana State Univ Faculty, PhD Human Factors
- Dr Robert Finkelstein, University of Maryland Faculty, PhD Cybernetics
- Dr Pascual Marques, UK Aviation CEO, PhD Engineering Mechanics
- Dr Dimitrius Gritzapis, Police Chief, Athens Greece, PhD Mechanical Eng
- John Sauter, Director, Jacobs Technologies, UAV Autonomy Expert (25 yrs)
- (Col Ret) Sanford Mangold, UAV Company CEO, MS Systems Management
- Mark Jones, USAF Test Pilot, MS Engineering
Campuses
Expanding

• USA
  – Ohio
  – Pennsylvania
  – Washington DC
  – Washington

• International
  – Greece
  – Peru
  – United Kingdom
This specialized degree focuses on either unmanned air, ground or sea systems. Topics will include architecture, development, modeling & simulation, analysis, integration, test and management of complex systems and processes. Courses are taught online one night per week. Problems and exams are used to assess candidate progress. The program consists of 8 courses (32 credits) taken over 6 continuous quarters. One math and two systems engineering courses are required.

There is an option for a Master of Science Degree. For this program the student will take 6 courses and work with a Faculty member to publish an 8 credit Masters Thesis.
PhD Degree

Unmanned Systems Engineering

- This specialized degree focuses on either unmanned air, ground or sea systems. Topics will include architecture, development, modeling & simulation, analysis, integration, test and management of complex systems and processes. Courses are taught one day per week. Problems and exams are used to assess candidate progress. The program consists of 10 courses (40 credits) taken over 10 continuous quarters and a PhD dissertation (24 credits). Two math and three systems engineering courses are required.
Graduate Courses
Unmanned Systems

- Introduction to Intelligent Vehicles
- Introduction to Unmanned Aircraft Systems
- Introduction to Unmanned Ground Systems
- Introduction to Unmanned Sea Systems
- Unmanned System Sensors and Characteristics
- Unmanned System Communications and Data Links
- Introduction to Unmanned Systems Operations
- UAV Aerodynamics and Flight Stability
- Unmanned System Autonomy
- Unmanned Aircraft Vehicle Control
- Unmanned Ground Vehicle Control
- Unmanned System Navigation
- Unmanned Aircraft System Flight Test and Evaluation
- Unmanned Aircraft Propulsion
- Unmanned Ground System Propulsion
- Unmanned Sea System Propulsion
- Unmanned System Alternative Power Design
- Unmanned System Human Factors (Human Machine Interface)
- Unmanned Ethics and Laws
- Safety Management Systems
Graduate Courses
Math & Systems Engineering

- Probability
- Statistics
- Linear Algebra
- Differential Equations
- Numerical Analysis
- Numerical Solution to Differential Equations
- Encoding and Encryption
- Introduction to Error Detection and Correction
- Fundamentals of Modern Systems Engineering (Required)
- Systems Engineering Management
- Systems Requirements Analysis
- System Design and Analysis
- Radar Systems Engineering
- Optical Systems Engineering
- Communication Systems Engineering
- Computer Systems Engineering
- Modeling and Simulation for Systems Engineering
- Scientific Principles of Test and Evaluation
- Human Machine Interface
- Reliability Engineering and System Safety
- System Architecture and Design
Unmanned Vehicle University Offers Online Degrees

The online Unmanned Vehicle University will begin offering classes starting in May, with degree programs beginning in June. The university offers graduate degrees, both master's and doctorates, in unmanned systems engineering. The degrees are available in air, ground and sea systems. An executive certificate course, which covers the basics of the industry, begins 9 May and the degree programs begin 11 June.

Courses are taught online from 7 to 9 p.m. EST one day per week for a 12 week quarter, and are available iPads and iPhones.

Go to www.uvuniversity.com for more information and to enroll.

White House, DARPA See Personnel Changes

President Obama has appointed Todd Park as the nation’s second chief technology officer, filling a vacancy left by the departure of Aneesah Chopra. The CTO is responsible for ensuring that innovative technologies are used to support administration priorities, including job creation and enhanced energy efficiency.

DARPA’s head, meanwhile, has decamped to Google. Wired’s Danger Room blog reports that Regina Dugan is leaving DARPA’s top post to take a senior executive position with Google, although the technology giant hasn’t said what she’ll be doing. Dugan has headed DARPA for the past three years and brought some innovation to the already innovative agency, including by crowdsourcing some high-tech UAV designs.

Xombie Spacecraft Makes Groundbreaking Landing

A new rocket-powered vertical landing demonstrator had a successful flight on 2 Feb. at the Mojave Air and Space Port in Calif. NASA says.

Masten Space Systems’ Xombie suborbital rocket lifted off the pad, rose 164 feet, moved laterally 164 feet and landed on another pad after a 67-second flight.

The flight represents the first step in developing a capability that could lead to landing technologies needed to explore planets, moons and near-earth objects such as asteroids, NASA says. The aerospace agency’s Flight Opportunities Program sponsored the test of the flight and control systems. Later demonstrations will take start at much higher altitudes, several miles above the ground.

To see the Xombie flight, scan this barcode with your smartphone.
Cascade Chapter
Member of AUVSI

Directory

Company Directory - Pacific Northwest Region

The local directory at cascade.auvsi.org lists Pacific Northwest companies actively participating in or pursuing UAS/UAV business activities. The directory serves to broaden the awareness of such activities and facilitate the growth of new business in the Pacific Northwest.

To submit a company to the directory, please fax or email the application form to:
Attn: Joe Gibbs (AUVSI Cascade Chapter)
Email: joe.gibbs@nwuav.com

Applicants must be located in the Pacific Northwest region and be registered corporate members of AUVSI. Note, this directory is unique to the Cascade Chapter and is different from those at auvsi.org.

Companies by Alphabet

- Aeronautical Testing Service, Inc.
- Analytical Methods, Inc.
- Arcturus UAV
- Evergreen Unmanned Systems
- Glenair Northwest Quartz
- Innovative Composite Structures
- Laser Motive, LLC
- Near Space Corporation
- Northwest UAV Propulsion Systems
- OptiNav, Inc.
- Riverview Custom Cable
- Silicon Forest Electronics
- Stilwell Baker
- University of Washington Aero Lab
- Unmanned Vehicle University
- XOTAR Corporation
## Unmanned Vehicle University

**Company Description:** Unmanned Vehicle University is the first University in the World dedicated to higher education in Unmanned Air, Ground and Sea Systems. The school offers technical training in Unmanned systems though 3 day short courses. Graduate degrees in Unmanned Systems Engineering are also offered with a totally online curriculum.

**Contact:** Dr (Col Ret) Jerry LeMieux, Executive Director administrator@uxvuniversity.com  
**Phone:** (206) 787-2807  
**Fax:** (206) 299-3587  
**Website:** [http://www.uxvuniversity.com](http://www.uxvuniversity.com)

**Primary Functional Area:**  
- Unmanned System Education & Training

**End Products:**  
- Unmanned Air, Ground and Sea System Educational Products

**Mission:**  
- Civil and commercial

**Company Classification:**  
- Educational Institution
Unmanned Systems
3 Day Short Courses
Unmanned Aircraft Vehicle Design Course
Mr Phillippe Roy, VP ATE AeroSurveillance

**Topics**

**Subject Matter Expert/Instructor** Phillippe Roy is currently Vice President of ATE Aro-Surveillance and overseas business and product development activities for the company. He has over 25 years of worldwide experience in the defense and aerospace electronics industry with a specific emphasis in unmanned aircraft systems and technologies. He has direct experience in the development of Unmanned Aircraft Systems, avionics as well as a range of sensor processors, real time software computing and networking technologies. Prior to ATE for the past 13 years, Mr Roy has held several senior management positions at Mercury Computer Systems, who is one of the leading suppliers of sensor processor systems for the DoD. He has been involved in over 50 large programs including sensor payload suite for Global Hawk, Predator, JSTARS, Gorgon Stare as well as US and International programs such as Gripen fighter radar, F-18 and many others. He holds an electrical engineering from the University of Poiters, France, attended the Babson College MBA program, and graduated from the executive management program in Ivey School of Business in London Ontario. While at Mercury, Mr Roy received the 2007 Solution of the Year Award from Advanced Imaging Professionals for introducing the first mobile synthetic vision navigation system and making general aviation safer. Mr Roy is an active member of the ASTM F38 committee who has been appointed by the FAA to write the upcoming regulations for Small Unmanned Aircraft Systems. In 2010 he was granted primary inventor status and co author of patent 7,747,364 on methods, apparatus and systems for enhanced synthetic vision and multi sensor data fusion to improve operational capabilities of unmanned aircraft systems. He is a regular speaker at US and International conferences and referenced as an expert on unmanned aircraft systems and airborne payloads. He also holds a commercial pilots license for multi-engine aircraft with instrument privileges and is an active pilot with over 1800 hours including over 1000 hours of multi-engine time.
Unmanned Ground Vehicle Fundamentals Course
Dr Robert Finkelstein, President, Robotic Technology Inc

Topics

Subject Matter Expert/Instructor
Dr. Finkelstein has more than 40 years of experience in: intelligent systems and robotic vehicles; military and civil systems analysis; operations research; business development; technology assessment and forecasting. Dr. Finkelstein earned a Doctorate in the primary field of Systems Theory and Cybernetics and the supporting field of the Management of Science, Technology, and Innovation, the George Washington University (GWU, 1995); Ap.Sci. (Applied Scientist degree) in Operations Research (GWU, 1977); M.S. in Operations Research (GWU, 1974); M.S. in Physics (University of Massachusetts, 1966); B.A. in Physics (Temple University, 1964). Also: Diplomas from the U.S. Army Missile School (1967) and U.S. Army Ordnance School (1966); Certificates from the University of Tennessee Space Institute (Combat Obscuration Modeling, 1978) and University of California, Los Angeles (Battlefield Robotics, 1983), and post-graduate courses in Physics at MIT (1968-1970). As President of Robotic Technology Inc. (RTI) from 1985 to the present, Dr. Finkelstein is responsible for technical analyses, technology assessments and forecasts, operations research, business development, and other professional services, for government and industry - nationally and internationally - in military and civil advanced technology systems, especially robotics, unmanned vehicles, and intelligent systems. Dr. Finkelstein is the inventor (patent pending) of the Energetically Autonomous Tactical Robot (EATR), which was developed under sponsorship of the Defense Advanced Research Projects Agency (DARPA). He is Collegiate Professor for the University of Maryland University College, Graduate School of Management and Technology, and he received the 2010 UMUC Teaching Recognition Award. He is also Co-Director of the Intelligent Systems Laboratory in the Center for Technology and Systems Management in the University Of Maryland Clark School Of Engineering. Previously he served as a U.S. Army Ordnance Officer in Missile Intelligence. Dr. Finkelstein has authored more than 200 technical reports and studies. He contributed articles to numerous publications and wrote a quarterly column and served on the Editorial Board for “Unmanned Systems” and Board of Directors for the Association for Unmanned Vehicle Systems International. His books include Unmanned Vehicle Systems: Military and Civil Robots for the 21st Century and Beyond, Pasha Publications (1994), Defense Year-Book 1992 (“Combat Robotics: From the Kaiser to the New World Order”), Brassey’s Publications, and “Military and Civil Robotics: Intelligent Machines in War and Peace,” IGI Global Publishers (to be published in 2012).
Topics

Subject Matter Expert/Instructor Mr. Sauter is the director of Jacobs Technology’s research group working on novel methods for the analysis and control of complex adaptive agent-based systems. This group has established an international reputation for its pioneering work in stigmergic algorithms using fine-grained agent-based systems for unmanned systems. John has over 25 years’ experience in research and development using fine-grained agent-based methods for modeling and control of complex systems ranging from swarming air vehicle control to distributed information analytics for massive data. He has led Jacob’s research in swarming unmanned vehicle control over the last thirteen years. John served as project manager and principal investigator on a number of defense studies and demonstrations of advanced unmanned systems. He managed the DARPA JFACC program to develop an adaptive air planning application in complex, dynamic threat environments. He led the OSD NII study to evaluate Jacob’s novel stigmergic swarming algorithms in several full scale simulation experiments run by the Space and Missile Defense Battle Lab. He led the team that successfully demonstrated the use of swarming algorithms controlling multiple ground and air vehicles in several tests held at Aberdeen Proving Grounds in 2004 and later at NASA’s Wallops Island in 2007 and 2009. He has also led projects in studying the effectiveness of swarming unmanned systems for several military applications including persistent surveillance, target tracking, fast boat surveillance, and perimeter protection. He is the author of over 25 papers and holds three patents using agent-based technologies for the analysis and control of a wide range of systems.
Human Factors in Unmanned Systems Course
Dr (Col Ret) Richard Baker
Center for Unmanned Systems and Human Capital Development
Indiana State University

**Topics**

**Subject Matter Expert/Instructor** Doctor (Col Ret) Richard Baker is a member of the Indiana State University (ISU) Department of Aviation Technology, Executive Manager of the ISU Center for Unmanned Systems and Human Capital Development, and Director of the ISU Center for Homeland Security and Crisis Leadership. Dr. Baker holds a BS in Mathematics and MS in Computer Science from Indiana State University. He received his doctorate from Nova Southeastern University where he conducted a study in project management and leadership in Information Systems. Prior to entering the academic world, Dr. Baker had an extensive corporate career in Aviation and in Information Technology. He served as the Director of Human Factors and Safety for American Airlines where his responsibilities included crew resource management and safety training for all pilots and flight attendants. A past chairperson of the Air Transport Association’s Human Factors Committee, he also received professional certification in Risk Management from the Transportation Safety Institute. Additionally, he brings many years of executive level experience in Information Technology (IT) from corporations such as General Motors and Electronic Data Systems (EDS). As the Chief Consultant Systems Engineer, his responsibilities involved systems design, implementation, and disaster recovery planning for major corporations who relied on EDS for IT services. Dr. Baker is a proven military commander and aircrew member with extensive aviation, airspace, and base management experience. Retired as a Colonel from the Indiana Air National Guard in 2003, he held command positions including Indiana State Director of Operations, Indiana State Director of Support, 181st Fighter Wing Support Group Commander, 181st Mission Support Squadron Commander, and 181st Chief of Supply. His total military experience includes twenty years in Operations; eleven years in Logistics; and five years in Support. During his tenure with the Air National Guard, he worked extensively with rapid response teams for counter-terrorism, the Counterdrug Operations at United States
Unmanned Aircraft System Fundamentals Course
Dr (Col Ret) Jerry LeMieux, Executive Director, Unmanned Vehicle University

Topics

Subject Matter Expert/Instructor
Doctor (Col Ret) Jerry LeMieux is an engineering PhD and pilot with over 40 years and 10,000 hours of aviation experience. With a BS on Electrical Engineering, Doctor LeMieux joined the USAF as a ROTC distinguished graduate. He is a Senior Pilot with over 2500 hours as a combat ready fighter pilot, instructor pilot and commander. While on active duty, Doctor LeMieux simultaneously completed the Masters and PhD degrees in Electrical Engineering. Doctor LeMieux has over 20 years of experience in program management, systems engineering and test and evaluation for AEW, fighter and tactical data link acquisition programs. He has experience with research, development, technology transfer, integration and flight test and evaluation. He has consulted on numerous airspace issues for the US Federal Aviation Administration, Air Force, Army, Navy, NASA, DARPA and all major defense contractors. Doctor LeMieux is currently working with the FAA sponsored RTCA Special Committee 203 on legislative and airspace issues related to integrating unmanned air systems into US National Airspace. He is a National Expert on both ground based and airborne UAS Sense & Avoid (SAA) systems. He is a co-author of a technical paper with the FAA on worldwide spectrum requirements for all US unmanned aircraft (to be presented by the FAA and at the World Radiocommunication Conference in 2012). He has recently contributed to the first FAA Certificate of Authority for a US Army UAS using a ground based SAA solution. Doctor LeMieux has over 20 years of course development and teaching experience at major Universities and Aviation Schools including: Boston University, University of Maryland, Embry Riddle Aeronautical University and Daniel Webster College. He has taught aeronautical, mechanical and electrical engineering and advanced mathematics courses at the undergraduate and graduate levels. Doctor LeMieux holds the Airline Transport License and was an airline pilot for Delta Air Lines for over 20 years. He has over 10,000 hours of flying experience with both domestic and international operations. For over 10 years he was the Executive Safety Chairman for the Airline Pilots Association in Washington DC where he was responsible for resolving airline safety issues US National airports.

(c) 2012 Unmanned Vehicle University
© 2012 Unmanned Vehicle University
DAY 1
INTRODUCTION
BASICS
TYPES & CIVILIAN ROLES
SENSORS & CHARACTERISTICS
SOLAR & FUEL CELL POWER

DAY 2
COMMUNICATIONS AND DATA LINKS
UAS CONCEPTUAL DESIGN
HUMAN MACHINE INTERFACE
SENSE AND AVOID SYSTEMS
AIRSPACE ISSUES

DAY 3
CIVIL AIRSPACE INTEGRATION
UAV NAVIGATION
AUTONOMOUS CONTROL
CASE STUDY: UAS SWARMING
FUTURE UAS CAPABILITIES

UAV Fundamentals
3 Day Short Course
Existing Clients

- Degree program students, around the world
- International lectures scheduled
- AeroVironment Inc: New Employee Orientation
- Johns Hopkins University/Applied Physics Lab
- US Air Force
- Society of Experimental Test Engineers
- Singapore Air Force, DSTA, DSTO
Scheduled Events

- UAV Fundamentals Course (3 Day Short Course)
  - JHU/Applied Physics Lab March 22-25
  - Singapore Military April 20-22

- UAV Executive Course (8 Weeks)
  - Online May 9

- UMS Masters Degree Courses
  - Online July 2

- UMS PhD Degree Courses
  - Online July 2

- Society of Flight Test Engineers Conference
  - 4 Hour Seminar Oct 2
Products

• MS & PhD Courses (12 weeks, online)
• UAV Executive Course (8 weeks, online)
• 3 Day Short Courses
  – Can do in house or at customer site
• Orientation Training, New Employees
• Corporate Customized Training