UNMANNED SYSTEMS TECHNOLOGY (UST)

UST 100 (3 credit hours)
Intro to Unmanned Systems Technology
Examine the foundations of unmanned systems technology (UST), including history, elemental systems including payloads, data links, ground support equipment, classes of unmanned systems, categories, basic components, applications, mission planning and control, and launch/recovery systems. Lecture: 3 credit hours (45 contact hours).
Attributes: Technical
Components: LEC: Lecture

UST 105 (3 credit hours)
Unmanned Systems Safety and Regulations
Explains the current legal considerations of unmanned systems technology operations, provides an outlook on future considerations, and informs students on existing and trending unmanned systems technology related safety standards and regulations. Lecture: 3 credit hours (45 contact hours).
Attributes: Technical
Components: LEC: Lecture

UST 107 (3 credit hours)
Commercial Drone Operations
Review commercial pilot license certification process and testing procedures required by FAA 107 regulations including air traffic control towers, safety protocols, risk management, weather air space, maintenance and operations of aerial vehicles, and mission plans. Prepares students for FAA-107 certification. Lecture: 3 credit hours (45 contact hours).
Attributes: Technical
Components: LEC: Lecture

UST 170 (3 credit hours)
Drone Media Applications
Utilizes small unmanned systems to record events related to photography and real estate. Lecture: 3 credit hours (45 contact hours).
Pre-requisite: UST 107 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

UST 200 (4 credit hours)
Drone Fabrication and Repair
Introduces drone fabrication, including safety principals, component selection, heating applications, and basic measurements using the metric system. Emphasizes designing, construction, testing, troubleshooting, and repairing of drones. Lecture: 3 credits (45 contact hours). Lab: 1 credit (30 contacts hours).
Pre-requisite: College Ready in all areas.
Pre- or co-requisite: UST 100.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

UST 210 (2 credit hours)
Visual Observer Operations
Prepares students to be a Visual Observer (VO) in day time unmanned aircraft systems (UAS) missions by monitoring drone flights, assessing risk and mitigation, and communicating flight operations to support the remote pilot in command. Demonstrate an understanding of VO types, visual techniques, and possible hazards that ensure safe day time drone operations. Pre-requisite or Co-Requisite: UST 100 AND UST 105 or Consent of Instructor. Lecture: 2 credits (30 contact hours).
Attributes: Technical
Components: LEC: Lecture

UST 211 (2 credit hours)
Night Time VO Operations
Prepares students to be a Visual Observer (VO) in night time unmanned aircraft systems (UAS) missions by monitoring drone flights, assessing risk and mitigation, and communicating flight operations to support the remote pilot in command. Demonstrate an understanding of visual illusions, visual sensitivity, and physiological conditions that ensure safe night time drone operations. Pre-requisite or Co-Requisite: UST 210 or Consent of Instructor. Lecture: 2 credits (30 contact hours).
Attributes: Technical
Components: LEC: Lecture

UST 220 (2 credit hours)
First Responder Applications
Examine fundamental principles of unmanned systems technologies, capabilities, regulations, legal responsibilities, cost and benefit consideration for potential use in law enforcement, fire, rescue, emergency medical and disaster response applications. Lecture: 2 credit hours (30 contact hours).
Pre-requisite: UST 107 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

UST 221 (1 credit hours)
Crew Resource Management
Provides students with an introduction to the principles and concepts of crew resource management (CRM) through interactive discussion and scenario based analysis as it relates to unmanned systems operations. Discusses CRM markers, principles and concepts of CRM, team building, information transfer, problem solving, risk management and decision making, communications process, conflict resolution and maintaining situational awareness when dealing with UAS automated systems. Lecture: 1 credit hour (15 contact hours).
Pre-requisite: UST 107 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

UST 290 (1-3 credit hours)
UST Flight Mastery
Develop skills in the flight of small unmanned systems, covering pre-flight procedures, take-off, landing, hovering techniques, operation/navigation, crew resource management, and post-flight procedures. Laboratory: 1-3 credit hours (30-90 contact hours).
Attributes: Technical
Components: LAB: Laboratory

UST 295 (1-6 credit hours)
UST Learning Experience
Provides on-the-job experience in small unmanned systems, requiring 40 clock/hours per credit hour of appropriate experience approved by the instructor; requires a learning contract, signed by the students, instructor, and supervisor. Laboratory: 1-6 credit hours (30-180 contact hours).
Pre-requisite: UST 107 or Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory

UST 299 (1 credit hours)
UST Capstone Studies
Creates employment related documents, demonstrates proper interviewing skills, and explores employment and careers in the unmanned systems technology area. Lecture: 1 credit hour (15 contact hours).
Pre-requisite: UST 107 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture