

# ERAU-Worldwide Unmanned System Related Career Opportunities: 2018

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## Overview

The unmanned systems industry, including those systems specific to the air, space, ground, and maritime domains, is rapidly increasing with the complexity and variability of designs, operations, and regulations driving the need for qualified and knowledgeable professionals, well versed in capabilities, requirements, and considerations. This expansive growth is envisioned to provide a multitude of career options, worth an estimated \$744.75 million in employment opportunities. Those with the relevant education, skills, knowledge, and experience will be well positioned to identify effective and efficient applications, cultivate innovation, provide leadership and management, and solve challenges affecting the field. The intent of this document is to describe the type, number, and locations of potential career options available or benefiting from completion of unmanned systems related curricula and degrees. This information is not meant to serve as an exhaustive identifier of all career possibilities, but instead to provide a guide for identifying potential opportunities, disciplines, or career tracks to pursue during or upon completion of educational milestones.



This document is categorized by *career opportunities*, *companies*, and *locations* to assist with student educational guidance, career development, and eventual job pursuit. It is envisioned that a student first entering an unmanned system related educational program (e.g., undergraduate major/minor or graduate core/specialization/concentration of study) will have researched and considered the type(s) of career opportunities most aligned to their own experience, education, and personal interests prior to starting coursework. Such research will assist in gaining a fundamental understanding of typical expectations and requirements across the field. The insight offered from this personal evaluation and exploration of opportunities will serve to support the development of personal goals, guide selection of further education options, completion of coursework, and personal career development and growth. The information presented, including titles, descriptions, number, and locations of positions that have been identified and compiled from numerous sources conventionally used to support job pursuit, such as the U.S. Bureau of Labor and Statistics and career building and search websites (e.g., indeed.com and glassdoor.com).

## ERAU-Worldwide Unmanned System Related Degree Options

[Embry-Riddle Aeronautical University \(ERAU\)](#), the world's largest, fully accredited university specializing in aviation and aerospace, is an independent, nonprofit, nonsectarian, and coeducational university that offers more than 70 undergraduate and graduate degrees, ranging from associate to PhDs for more than 32,000 students. The [ERAU-Worldwide Campus](#) operates a globally recognized learning system that leverages [online](#) and face-to-face instruction through a network of education facilities designed to support student advancement in the U.S. and abroad. ERAU-Worldwide has developed several multidisciplinary unmanned systems related education options, closely mapped to the needs and demands of the industry and field.

### Undergraduate Degree Options

#### *B.S. in Unmanned Systems Applications*

The 120-credit [Bachelor of Science in Unmanned Systems Applications](#) (BSUSA) degree has been designed to provide broader and more affordable access to an undergraduate-level education in a topic under-represented in global educational institutions, the application of unmanned system technology. The educational focus of the BSUSA supports the growth, innovative development, and effective use of unmanned system technology across the respective domains (air/space, ground, and maritime) to identify and address significant industry challenges. The BSUSA degree features 36-credits of general education coursework, 48-credits of core unmanned systems topics, and 36-credits associated with a student selected track of study (administration, operations, and development) covering subject relevant to the industry. A new minor, [Small Unmanned Aircraft System \(sUAS\) Operation](#), was recently added to promote and strengthen applicable knowledge, skills, and abilities (KSA)s specific to Part 107 operations in the U.S. National Airspace System.

**NOTE:** Students must contact their Academic Advisor regarding additional cost, possible travel, and FAA Testing, prior to enrolling in the first course of the sUAS Operations minor, concentration, or specialization.

#### *B.S. in Aeronautics – sUAS Operations and UAS Minors*

The [Bachelor of Science in Aeronautics](#) (BSA) degree is closely mapped to the needs and demands of the aviation/aerospace industry and general education guidelines. The BSA features an option to pursue an 18-credit minor course of study in either sUAS Operations (promote and strengthen applicable KSAs specific to Part 107 operations in the U.S. National Airspace System) or UAS (improve awareness of system capabilities, unique robotic features, sensor selection and application, and role in modern operations).

#### *B.S. in Engineering Technology – UAS and Aeronautical Science concentrations*

The 122-credit [Bachelor of Science in Engineering Technology](#) (BSET) degree emphasizes the real-world application of general engineering principles, supporting the development of the skills to design, refine and apply engineering technologies across a range of industries, including unmanned systems. The BSET has been designed to help students prepare for the National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering (FE) exam, the first step for any engineer to earn a Professional Engineering (PE) license. Besides technical core courses in areas such as mechanics, materials, fluids, circuits, thermodynamics, and controls, the BSET program has students choose two 18-credit areas of concentration. Two options related to the unmanned systems industry are the UAS and aeronautical science areas of concentration. Other concentration areas include aviation safety, facilities and construction management, helicopter operations and safety, transportation, logistics management, management information systems, occupational safety and health, project management, and security and intelligence.

## Graduate Degree Options

### *M.S. in Unmanned Systems Degree*

The [Master of Science in Unmanned Systems](#) (MSUS) degree has been designed to produce graduates qualified to enter or enhance their applicability towards the application, development, management, policy-making, and support of unmanned systems. The MSUS curriculum features topics, interactive activities, collaborative engagement, and research and development projects aligned towards supporting the development and refinement of student KSAs. The educational focus supports the investigation and development of strategies and solutions to address major challenges within the industry. To meet the dynamic and unique needs of a multidisciplinary student population and evolving industry needs, the MSUS features a series of nine-credit elective concentrations: sUAS Operations, Unmanned Aerospace Studies (UAS), Aeronautics and Design, Human Factors, Space Systems, Safety/Emergency Response, Operations, Education, Aviation/Aerospace Management, and Aviation/Aerospace Research.

### *M.S. in Unmanned and Autonomous Systems Engineering Degree*

The Master of Science in Unmanned and Autonomous Systems Engineering (MSUASE) degree is a 30-credit, online program designed to enable career establishment and advancement in a rapidly changing field. The program features the development of innovative solutions operating along the spectrum of autonomy, including unmanned aircraft, autonomous cars, robotic surface and underwater vessels, spacecraft, and industrial robots. The degree is built on rigorous multi-disciplinary coursework to provide a flexible option to develop and demonstrate knowledge attainment through project-based experiences. The curriculum features integration and application of concepts, protocols, and techniques in unmanned and autonomous systems: systems engineering, architecture, and design; safety and certification; requirements development analysis; modeling; command, control, and communication (C3); and human factors. Through the review of design, performance, and operational specifications to system testing and evaluation of end-to-end solutions, students gain comprehensive insight and practical experience affecting development, acquisition, fielding, and sustainment of unmanned system designs. The MSUASE culminates in a two-term capstone project, conducted independently or in a team setting, to develop a technical solution to a critical real world challenge and leading to publication.

### *M.S. in Aeronautics Degree-sUAS Operations and UAS Graduate Specializations*

The 36-credit [Master of Science in Aeronautics](#) (MSA) is an advanced degree designed to broaden a student's knowledge, diversify talents, and cultivate an edge in the competitive field of aviation. The MSA features the option to pursue a 12-credit graduate specialization in either Unmanned Aerospace Systems (emphasizes obtaining a comprehensive understanding of UAS topics, challenges, and application) or sUAS Operations (promote and strengthen applicable KSAs specific to Part 107 operations in the U.S. National Airspace System).

### *Master of Systems Engineering Degree –Technical Track Unmanned Systems Electives*

The 30-credit [Master of Systems Engineering](#) (MSYSE) prepares and qualifies students to coordinate diverse teams, understand complex technology and tools, integrate interdepartmental work processes, and manage efforts across industries, including unmanned systems. The MSYSE features the option to pursue one of two tracks, the technical track, which is focused on completion of coursework relating to system design, analysis, and implementation or the engineering management track, which is concentrated on organization, process, and management. The technical track features selection of 12-credits of electives (four courses), which may include unmanned systems specific graduate course options, such as unmanned aerospace systems; robotics and control; command, control, and communications (C3); sensing, perception, and processing; autonomy and automation power, propulsion, and maneuvering; operations and payloads; and human factors.

## Career Opportunities

This section identifies examples of specific job or career opportunities anticipated to be available to ERAU-Worldwide students, when connected with their existing baseline education, experience, and/or training. This section is subdivided into major categories of opportunities associated with the growth of unmanned systems: Business Development Positions, Analysis, Development, and Engineering Positions, Assembly/Technician Positions, Support Positions, Management Positions, and Operations Positions.

**NOTE:** The completion of an unmanned system related degree alone may not be sufficient to meet the prerequisite requirements of some identified job/career options, which may have need for specific baseline education, certification, licensure, and experience. Some positions may require a specific undergraduate degree, amount of experience, and/or training relating to the discipline (e.g., Airframe and Powerplant [A&P] Technician positions typically require appropriate experience and Federal Aviation Administration [FAA] issued certificate to work unsupervised and approve equipment to return to service). Pre-requisite experience and/or education, including appropriate ERAU-Worldwide degree options to consider in combination with pre-requisites, are identified for each. A specific job title/topic may also be identified under several categories, when appropriate.

### Business Development Positions

The following represent those positions and roles necessary for the performance of activities, duties, and responsibilities essential to pursuit and development of unmanned system business opportunities.



#### Acquisition and Technology Lead/Analyst

These positions typically lead and grow business efforts across multiple domains. Responsibilities include management of business operations; development and submission of proposal; recruitment; and development of business. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/acquisition-lead-salary-SRCH\\_K00,16.htm](http://www.glassdoor.com/Salaries/acquisition-lead-salary-SRCH_K00,16.htm)

Experience and pre-requisite undergraduate education relating to management and/or business administration recommended (e.g., undergraduate in Business Administration or Management)

- BSUSA – Administration track
- MSUS-applicable concentrations include sUAS Operations, UAS, Operations, and/or Aviation/Aerospace Management
- MSUASE
- MSA-sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Business Developer/Development Specialist/Manager**

These positions typically identify potential business markets, opportunities, business models and determines feasibility of services/products and development of new products. Responsibilities include execution of capture strategies/plans; stakeholder collaboration; identifying, cultivating, and securing business opportunities and relationships; and monitoring and evaluating the market. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/business-developer-salary-SRCH\\_KO0,18.htm](http://www.glassdoor.com/Salaries/business-developer-salary-SRCH_KO0,18.htm)

Experience and pre-requisite undergraduate education relating to business management recommended (e.g., undergraduate in Management)

- BSUSA – Administration track
- MSUS-applicable concentrations include Operations, and/or Aviation/Aerospace Management
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Contracts/Subcontracts/Procurement Specialist**

These positions typically organize and maintain contracts, proposals, task orders, non-disclosure agreements, assignments, approval forms, and other agreements. Responsibilities include preparation, review, and submission of applicable documentation; preparation of contract closeouts; responding to sources sought requests; requesting/conducting debriefs; maintaining databases; and issuing/updating job codes. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/contracts-specialist-salary-SRCH\\_KO0,20.htm](http://www.glassdoor.com/Salaries/contracts-specialist-salary-SRCH_KO0,20.htm)

Experience and pre-requisite undergraduate education relating to business administration recommended (e.g., undergraduate in Business Administration)

- BSUSA – Administration track
- MSUS-applicable concentrations include sUAS Operations, Operations, and/or Aviation/Aerospace Management
- MSA-sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Financial Analyst**

This position provides guidance relating to financial decisions of a business. Responsibilities include preparation of financial materials; interpreting policies, procedures, and standard practices; responding to financial inquiries; collaborate with stakeholders to plan/budget work, track spending; identify expected profit margins; and review labor/procurement charging. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/business-and-financial/financial-analysts.htm>

Experience and pre-requisite undergraduate education relating to management and/or business administration recommended (e.g., undergraduate in Business Administration or Management)

- BSUSA – Administration track
- MSUS-applicable concentrations include Operations, and/or Aviation/Aerospace Management
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Proposal Specialist**

This position manages development of request for proposal (RFP)/ request for information (RFI) responses. Responsibilities include management and contribution towards development of proposal documentation; preparation and management of milestone schedules; decomposition of RFP/RFI requirements and development of requirements matrix; manage collaboration; assist management of proposal process. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/proposal-specialist-salary-SRCH\\_KO0,19.htm](http://www.glassdoor.com/Salaries/proposal-specialist-salary-SRCH_KO0,19.htm)

Experience and pre-requisite undergraduate education relating to communications, marketing, management and/or business administration recommended (e.g., undergraduate in Business Administration or Management)

- BSUSA – Administration track
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Operations, and/or Aviation/Aerospace Management
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Strategic Planning/Management Analyst**

These positions typically provide guidance regarding increasing profitability and efficiency of an organization over a long term period. Responsibilities include development, evaluation, and execution of long-range objectives and strategic plans; evaluate internal/external strategic alternatives; develop and approve new business models; establish research objectives; evaluate gap analysis and recommendations; monitor industry developments; lead acquisition, merger, and licensing opportunities; and conducts economic/strategic assessments. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems):

<http://www.bls.gov/ooh/business-and-financial/management-analysts.htm>

Experience and pre-requisite undergraduate education relating to management and/or business administration recommended (e.g., undergraduate in Business Administration or Management)

- BSUSA – Administration track
- MSUS-applicable concentrations include Operations, and/or Aviation/Aerospace Management; Certified Management Consultant [CMC] designation may improve career prospects
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

## Analysis, Development, and Engineering Positions

The following represent those positions and roles necessary for the analysis, development, design, and/or engineering of elemental or unified unmanned systems and data essential to application, operation, or market growth.



### **Aerodynamicist/Aerospace Engineer**

These positions typically perform aerodynamic/aerospace design, analysis, and testing support. Responsibilities include development of design requirements; performance of design and analysis to meet performance goals; analyze performance; determine vehicle force and moment coefficients; establish flight envelope and diagrams; support, plan, and execute flight, wind tunnel, and ground testing; and evaluate mission profiles. Job related information available from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/aerospace-engineers.htm>

Experience and pre-requisite undergraduate education relating to aeronautics or aerospace engineering recommended (e.g., B.S. in Aeronautics or Aerospace Engineering)

- BSET-Aeronautical Science
- MSUASE (with undergraduate engineering degree)
- MSUS (with undergraduate engineering degree)-applicable concentrations include UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research

### **Aerospace Systems Analyst/Interdisciplinary Engineer**

These positions typically perform research and conducts technical analysis for long-term projects using interdisciplinary methods and sources. Responsibilities include collaboration with technical analysts, researchers, and translators; development and briefing of researching findings; and creation of marketing/proposal materials relating to pursuit of funding. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/systems-analyst-aerospace-salary-SRCH\\_KO0,15\\_KE16,25.htm](http://www.glassdoor.com/Salaries/systems-analyst-aerospace-salary-SRCH_KO0,15_KE16,25.htm)

Experience and pre-requisite undergraduate education relating to aeronautics, aerospace engineering, advanced mathematics, and operations research techniques recommended (e.g., B.S. in Aeronautics or Aerospace Engineering)

- BSUSA – Development track
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE

### **Airframe Analyst/Airworthiness Engineer**

These positions typically perform technical airworthiness planning and provide verification support. Responsibilities include development and negotiation of airworthiness plans, basis of certifications, means of compliance, and certification activities for total systems; design, fabricate, test, install, operate, maintain, and dispose of equipment; perform functional and process analysis; and confirmation that airworthiness requirements are met (including flight releases, type certification, and continued airworthiness). No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/airframe-engineer-salary-SRCH\\_KO0,17.htm](http://www.glassdoor.com/Salaries/airframe-engineer-salary-SRCH_KO0,17.htm)

Experience and pre-requisite undergraduate education relating to an engineering discipline recommended (e.g., B.S. in Aeronautics or Aerospace Engineering)

- BSUSA – Development track
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE

### **Algorithm/Software Developer/Engineer**

These positions develop software, including algorithms, interfaces, and models. Responsibilities include designing, developing, debugging, testing, configuring, deploying, and documenting system software solutions. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm>

Experience and pre-requisite undergraduate education relating to an engineering, computational, mathematical, or scientific discipline recommended (e.g., B.S. in Aeronautics, Aerospace Engineering, Mathematics, Computer Science, Physics, or technical degree)

- BSUSA – Development track
- MSUS-applicable concentrations include UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE

### **Communications/Radio Frequency Engineer**

These positions typically provide technical communications engineering support relating to communications and airborne networking technologies and topics (e.g., communication systems, radio frequency [RF] and digital hardware design, baseband and digital signal processing, waveform design, signal detection and estimation, and synchronization theory). Responsibilities include system architecture design; development and analysis of trade studies; specification development; requirement definition, allocation, and analysis; system modeling and simulation tool development, and providing

support to hardware design, manufacturing, integration and test. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/communications-engineer-salary-SRCH\\_KO0,23.htm](http://www.glassdoor.com/Salaries/communications-engineer-salary-SRCH_KO0,23.htm)

Experience and pre-requisite undergraduate education relating to electrical engineering or scientific discipline recommended (e.g., B.S. in Electrical Engineering, Physics, Mathematics, or Computer Science)

- MSUS (with undergraduate engineering degree)-applicable concentrations include UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE (with undergraduate engineering degree)

### **Computer Engineer/Scientist**

These positions typically perform research, design, development, and testing of computer systems and associated technology (e.g., processors, circuit boards, memory devices, networks, and interfaces). Responsibilities include development and review of software requirements, operational concepts, system interfaces, schedules, and resource estimates; implementing software architecture and design methods, computer languages, and operating systems to develop or improve computer systems, sensors, and application of software engineering tools and commercially off the shelf (COTS) software. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/computer-hardware-engineers.htm>

Experience and pre-requisite undergraduate education relating to an engineering or scientific discipline recommended (e.g., B.S. in Aeronautics, Aerospace Engineering, or Computer Science)

- BSUSA – Development track
- BSET-UAS or Aeronautical Science
- MSUS (with undergraduate computer science or engineering degree or experience)-applicable concentrations include UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE (with undergraduate computer science or engineering degree or experience)

### **Data/Operations Research Analyst**

These positions typically use advanced mathematical and analytical methods to investigate complex issues, identify and address problems, and make supported recommendations and informed decisions. Responsibilities include initiating and cultivating working relationships and agreements to leverage expertise of external stakeholders to meet research requirements; serve as subject matter expert (SME) on projects, programs, and activities; prepare formal documentation and presenting plans, results, responses and recommendations to a variety of audiences; collaborate and coordinate with other stakeholders within the unmanned systems community. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/math/operations-research-analysts.htm>

Experience and pre-requisite undergraduate education relating to operations research, mathematics, probability, statistics, mathematical logic, science, or subject-matter recommended (e.g., B.S. in Aeronautics, Aeronautical Science, Business Administration, Computer Science, Engineering, Mathematics, Robotics, UAS)

- BSUSA – Operations or Development tracks
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Human Factors, Space Systems, Safety/Emergency Response, Operations, Education, Aviation/Aerospace Management, and/or Aviation/Aerospace Research

- MSUASE (with undergraduate engineering degree)

### **Electrical/Electronics Specialist/Engineer**

These positions typically perform design, development, and testing of electrical/electronic components, subsystems, and systems (e.g., integrated computer chips, circuit boards, computer systems, electrical components, integrated electrical systems, electric motors, radar and navigation systems, communications systems, and power generation equipment). Responsibilities include designing new or modifying existing products; developing technical specifications for production and test; analyzing hardware configuration and processing solutions; and testing hardware conformance to specifications. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/electrical-and-electronics-engineers.htm>

Experience and pre-requisite undergraduate education relating to electrical engineering or scientific discipline recommended (e.g., B.S. in Electrical Engineering, Physics, Mathematics, or Computer Science)

- BSUSA-Development track
- BSET-UAS or Aeronautical Science
- MSUS -applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE

### **Electromechanical/Mechanical Specialist/Engineer**

These positions typically perform design, development, construction/assembly, and testing of electrical, mechanical, and thermal devices (e.g., tools, engines, and machines). Responsibilities include supporting and formulating technical responses and design solutions for structural, mechanical, crew, and ground support system challenges; documenting and communicating design solutions as part of a multi-disciplined team; interface with all disciplines on the team to generate optimized solutions; coordinate segments of a specific project and may have frequent inter-organization and customer contact on difficult technical issues; and troubleshoot, analyze, and repair systems utilizing standard engineering and scientific principles. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm>

Experience and pre-requisite undergraduate education relating to engineering or scientific discipline recommended (e.g., B.S. in Aerospace, Aeronautical, Electrical, or Mechanical Engineering)

- BSUSA-Development track
- BSET-UAS or Aeronautical Science
- MSUS (with undergraduate engineering degree)-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE (with undergraduate engineering degree)

### **Financial Analyst**

See description under *Acquisition/Business Development Positions*

### **Flight Controls/Guidance, Navigation and Control Specialist/Engineer**

These positions typically develop and analyze flight control and navigational algorithms, simulation models, and documentation. Responsibilities include developing algorithms and tools; performing mathematical modeling; navigation and control system design and optimization; conducting flight data analysis; developing documentation and flight test plans; and providing flight test support. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional

information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/flight-controls-engineer-salary-SRCH\\_KO0,24.htm](http://www.glassdoor.com/Salaries/flight-controls-engineer-salary-SRCH_KO0,24.htm)

Experience and pre-requisite undergraduate education relating to engineering or scientific discipline recommended (e.g., B.S. in Aerospace, Aeronautical, Electrical, or Mechanical Engineering)

- BSUSA-Development track
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Space Systems, and/or Aviation/Aerospace Research
- MSUASE

### **Flight Test/Test Engineer**

These positions typically support the planning, execution, and reporting test operations of aerospace vehicles for the purpose of research, development and certification. Responsibilities include test planning; evaluating test readiness; ensuring safety of flight and test operations; communicating planning, status and results of tests; overseeing and confirmation configuration for test; and conducting preliminary review and processing of specific test planning documents. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/test-engineer-salary-SRCH\\_KO0,13.htm](http://www.glassdoor.com/Salaries/test-engineer-salary-SRCH_KO0,13.htm)

Experience and pre-requisite undergraduate education relating to engineering or scientific discipline recommended (e.g., B.S. in Aerospace, Aeronautical, Electrical, or Mechanical Engineering)

- BSUSA – Operations or Development tracks
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Space Systems, Operations, Aviation/Aerospace Management, and/or Aviation/Aerospace Research
- MSUASE
- MSA- sUAS Operations or UAS (UAS related testing positions only)

### **Geospatial Specialist**

This position supports geospatial information and services (GIS) and provides technical and analytical support. Responsibilities include requirement document staffing; review and development of requirements for geospatial data and products; provide GIS support for exercises, experiments studies, and other operational support analyses; and develop, implement and deliver GIS databases; and make recommendations for process/procedure improvements to streamline and improve quality and efficiency of GIS models and geospatial data management. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/surveying-and-mapping-technicians.htm>

Experience and pre-requisite undergraduate education relating to GIS, geography, or related scientific discipline recommended (e.g., B.S. in Geographic Information Science, Planning, or Engineering)

- BSUSA – Operations or Development tracks
- MSUS (with related undergraduate GIS degree or experience)-applicable concentrations include sUAS Operations, UAS, Space Systems, Operations, and/or Aviation/Aerospace Research
- MSUASE (with related undergraduate GIS degree or experience)

### **Information Assurance Specialist/Engineer**

These positions typically establish and work to address complex system-wide information security requirements based upon the analysis of user, policy, regulatory, and resource demand. Responsibilities

include ensuring compliance with any modifications, changes and updates to associated documentation, obtaining Certification and Accreditation (C&A) of developed system; and developing all required information assurance (IA) documentation. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):  
[http://www.glassdoor.com/Salaries/information-assurance-engineer-salary-SRCH\\_KO0,30.htm](http://www.glassdoor.com/Salaries/information-assurance-engineer-salary-SRCH_KO0,30.htm)

Experience and pre-requisite undergraduate education relating to computer science, engineering, or related scientific discipline recommended (e.g., B.S. in Computer Science, Engineering, Management Information Systems, or IA Systems Management)

- BSUSA – Development track
- BSET-UAS and Management of Information Systems
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Aviation/Aerospace Management, and/or Aviation/Aerospace Research
- MSUASE
- MSA- sUAS Operations or UAS (UAS related positions only)

**Integration/Architectural/Systems Engineer**

These positions typically support the development of new systems, capabilities, and business associated with integrated unmanned systems. Responsibilities include development of concepts of operation, product plans, and business; provide support for business development, proposals, and other deliverables; assume responsibility for system requirements management, documentation, and component selection and integration. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):  
[http://www.glassdoor.com/Salaries/systems-engineer-salary-SRCH\\_KO0,16.htm](http://www.glassdoor.com/Salaries/systems-engineer-salary-SRCH_KO0,16.htm)

Experience and pre-requisite undergraduate education relating to development and management disciplines recommended (e.g., B.S. in Engineering or Engineering Management)

- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, and Aviation/Aerospace Management
- MSUASE
- MSA- sUAS Operations or UAS (UAS related positions only)
- MSYSE- technical track with unmanned systems electives

**Human Factors Specialist/Engineer**

This position applies human performance principles, methodologies, and technologies towards the design and evaluation of human-machine-interfaces (HMI)s and unified systems. Responsibilities include development and implementation of research methodologies and statistical analysis plans, test and evaluation of developmental prototypes, collaborative work with design engineers, and identification and analysis of technological problems and risks. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):  
[http://www.glassdoor.com/Salaries/human-factors-engineer-salary-SRCH\\_KO0,22.htm](http://www.glassdoor.com/Salaries/human-factors-engineer-salary-SRCH_KO0,22.htm)

Experience and pre-requisite undergraduate education relating to a human performance or human factors discipline recommended (e.g., B.S. in Human Factors, Industrial Design, or Psychology)

- MSUS-concentration courses in Human Factors, sUAS Operations, UAS, or Aviation/Aerospace Research
- MSUASE
- MSA- sUAS Operations or UAS (UAS related positions only)

### **Manufacturing/Process Engineer**

These positions typically provide technical and engineering support for processes associated with manufacturing or development. Responsibilities include troubleshooting of processes issues; development of documentation; design and evaluation of new/existing equipment, methods, specifications, and standards; and identifying and recommending new technologies to support business. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/manufacturing-engineer-salary-SRCH\\_KO0,22.htm](http://www.glassdoor.com/Salaries/manufacturing-engineer-salary-SRCH_KO0,22.htm)

Experience and pre-requisite undergraduate education relating to engineering, manufacturing, or other technical field recommended (e.g., B.S. in Engineering or Industrial Design)

- MSUS-concentration courses in sUAS Operations, UAS, Human Factors, Safety/Emergency Response, Operations, or Aviation/Aerospace Management
- MSUASE (with undergraduate engineering degree)

### **Materials Specialist/Engineer**

This position provides material and process support to the design, development, prototype fabrication, and design verification testing of unmanned systems and constituent elements. Responsibilities include the analysis, research, and development of materials and their related fabrication and application processes to develop and optimize materials for use in engineering design of and/or use, the identification and capture of metrics, conducting of capability assessment, updating materials specifications, and recommending corrective actions to address non-conformance or failures. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/materials-engineers.htm>

Experience and pre-requisite undergraduate education relating to an Engineering or Materials Science discipline recommended (e.g., B.S. in Material Science and Engineering, Chemical Engineering, Electrical Engineering, or Mechanical Engineering)

- BSET-UAS or Aeronautical Science
- MSUS (with undergraduate engineering degree)-applicable concentrations include Aeronautics and Design or Aviation/Aerospace Research
- MSUASE (with undergraduate engineering degree)

### **Modeling and Simulation Specialist/Engineer**

These positions typically serve to lead or support development, refinement, or application of modeling, simulation, analysis, and visualization for research, training, analytical, or educational projects. Responsibilities include cooperative and collaborative work with multi-disciplinary teams, development of program documentation and project plans, performance of peer review, provide systems engineering support, conduct briefings, facilitate and coordinate communication between customer(s) and development teams, and support the integration, assessment, and revision of models and software elements. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/simulation-engineer-salary-SRCH\\_KO0,19.htm](http://www.glassdoor.com/Salaries/simulation-engineer-salary-SRCH_KO0,19.htm)

Experience and pre-requisite undergraduate education relating to an Engineering, Technical, or Analytical discipline recommended (e.g., B.S. in Engineering, Computer Science, Mathematics, Statistics, or Physics)

- BSUSA – Development track

- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, and Aviation/Aerospace Research
- MSUASE
- MSA- sUAS Operations or UAS (UAS related modeling and simulation positions only)

### **Optical Engineer**

This position applies various aspects of mechanical and optical engineering to the development of unmanned optical systems, investigating current optics problems, and developing next generation optics systems and methods to support the development of optics with advanced designs. Responsibilities include design, integration, and testing applied to the development of complex optical hardware from conceptual design through fabrication and performance evaluation, development and maintenance of specifications, oversight of component fabrication, and performance of system alignment and testing. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/optical-engineer-salary-SRCH\\_KO0,16.htm](http://www.glassdoor.com/Salaries/optical-engineer-salary-SRCH_KO0,16.htm)

Experience and pre-requisite undergraduate education relating to an Engineering or Science discipline recommended (e.g., B.S. in Physics, Optical Engineering, or Electrical Engineering)

- MSUS (with undergraduate engineering degree)-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, and Aviation/Aerospace Research
- MSUASE (with undergraduate engineering degree)

### **Program/Systems Analyst**

These positions typically provide support for detailed definition, development, and analysis of prototype/conceptual systems or methods, integration and demonstration of advanced concepts, and analysis of perceived or exhibited needs to determine functional requirements. Responsibilities include coordination of integrated product teams (IPTs), development of schedules, review and administration of change requests (CRs), verification of system issue capture, management of system integration, and creation of applicable documentation and deliverables. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/systems-analyst-salary-SRCH\\_KO0,15.htm](http://www.glassdoor.com/Salaries/systems-analyst-salary-SRCH_KO0,15.htm)

Experience and pre-requisite undergraduate education relating to an engineering, operations research, mathematics, probability, statistics, mathematical logic, science, or subject-matter discipline recommended (e.g., B.S. in Computer Science, Aeronautical Science, Engineering, or Mathematics)

- BSUSA – Operations or Development tracks
- BSET-UAS or Aeronautical Science
- MSUASE
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design or Aviation/Aerospace Research
- MSA- sUAS Operations or UAS (UAS related positions only)

### **Propulsion Engineer**

This position leads or participates in the design, fabricating and testing of propulsion systems for unmanned systems. Responsibilities include management of personnel, schedule, and budget; specification design and development; procurement of the engine installations; produce installation layouts, component designs, solid models, and drawings; prepare requisite data for airworthiness certification; review and validate propulsion installations and components through simulation, analysis, and test data interpretation; perform failure analysis, lead propulsion-related testing, analyze test data,

identify issues, and document results in detailed test reports. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/propulsion-engineer-salary-SRCH\\_KO0,19.htm](http://www.glassdoor.com/Salaries/propulsion-engineer-salary-SRCH_KO0,19.htm)

Experience and pre-requisite undergraduate education relating to an Engineering discipline recommended (e.g., B.S. in Aerospace or Mechanical Engineering)

- MSUS (with undergraduate engineering degree)-applicable concentrations include sUAS Operations, UAS, or Aeronautics and Design
- MSUASE (with undergraduate engineering degree)

### **Quality Analyst/Engineer**

These positions typically support unmanned system development, manufacturing, and lifecycle support through confirmed compliance with quality assurance programs, policies, processes, and procedures. Responsibilities include verification of requirements and performance of system inspection; providing subject matter expertise and guidance relating to policies, regulations, and guidelines to assure compliance; and supporting multidisciplinary teams to ensure that inspections, process control analyses or audits are conducted on a continuing basis. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/quality-engineer-salary-SRCH\\_KO0,16.htm](http://www.glassdoor.com/Salaries/quality-engineer-salary-SRCH_KO0,16.htm)

Experience and pre-requisite undergraduate education relating to an Engineering, Technical, or Science discipline recommended (e.g., B.S. in Computer Science, Aeronautical Science, Engineering, Mathematics, Physics, or technical)

- BSUSA – Operations or Development tracks
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, Human Factors, Operations, or Aviation/Aerospace Research
- MSUASE

### **Reliability Engineer**

This position specializes in the performance of reliability, maintainability, system safety, testability, human factors, and logistics engineering tasks to support the design, production, and fielding of advanced unmanned systems technology and equipment. Responsibilities include performing reliability modeling and analysis, including prediction and assessment, trade studies, Failure Mode, Effects and Criticality Analysis (FMECA); planning and management of Failure Reporting, Analysis and Corrective Action System (FRACAS); conducting Failure Review Boards (FRBs); and preparing/presenting status and findings to customers/stakeholders. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/reliability-engineer-salary-SRCH\\_KO0,20.htm](http://www.glassdoor.com/Salaries/reliability-engineer-salary-SRCH_KO0,20.htm)

Experience and pre-requisite undergraduate education relating to an Engineering or Science discipline recommended (e.g., B.S. in Engineering, Human Factors, Aeronautical Science, Computer Science, Mathematics, or Physics)

- MSUS (with undergraduate engineering degree or experience)-applicable concentrations include UAS, Aeronautics and Design, Human Factors, Space Systems, Operations, or Aviation/Aerospace Research
- MSUASE (with undergraduate engineering degree or experience)

### **Researcher/Research Scientist**

These positions typically develop and support research, including innovative use of emerging technology to address business needs, application of complex modeling and statistical analysis techniques, and

pursuit of funding for future research projects. Responsibilities include review and dissemination of current literature; design, validation, and implementation of algorithms, data analysis, and/or theoretical techniques and methods; providing subject matter expertise to stakeholders and larger community; supporting multidisciplinary teams across the organization; ensuring compliance with standards and best practice guidelines; lead data research and analysis projects, providing oversight and plan corrections; and status project metrics to benchmark effectiveness and milestone achievement. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/research-scientist-salary-SRCH\\_KO0,18.htm](http://www.glassdoor.com/Salaries/research-scientist-salary-SRCH_KO0,18.htm)

Experience and pre-requisite undergraduate education relating to a research, mathematics, probability, statistics, mathematical logic, subject-matter discipline recommended (e.g., B.S. in Applied Mathematics, Computer Science, Engineering, Human Factors, Mathematics, Statistical Modeling, Machine Learning, Neural Networks, Statistics, and other technical fields)

- BSUSA – Operations or Development tracks
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include sUAS Operations, UAS, Human Factors, Aeronautics and Design, or Aviation/Aerospace Research
- MSUASE
- MSA- sUAS Operations or UAS (UAS related positions only)

#### **Sensor Specialist/Engineer**

This position serves as a technical contributor on multidisciplinary teams focused on the conceptualization, design, and development of sensor/sensing solutions to meet project or product requirements, transitioning concepts from prototype to product. Responsibilities include supporting research and development projects, including nondestructive evaluation (NDE) systems and probe technologies, through concept development, design, prototype construction, and testing; identifying and development of advanced exteroceptive and/or proprioceptive sensor/sensing technology; evaluation experimental requirements in the design of advanced sensing systems; interfacing with customers; development of proposals and presentations; and field evaluation of developed technologies, including transfer of technology to external partners. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/sensor-engineer-salary-SRCH\\_KO0,15.htm](http://www.glassdoor.com/Salaries/sensor-engineer-salary-SRCH_KO0,15.htm)

Experience and pre-requisite undergraduate education relating to an Engineering, Technical, or Fundamental discipline recommended (e.g., B.S. in Engineering, Computer Science, Mathematics, or Physics)

- BSUSA – Operations or Development tracks
- BSET-UAS
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, or Aviation/Aerospace Research
- MSUASE

## Assembly/Technician Positions

The following represent those positions and roles necessary to assemble, construct, inspect, modify, and/or install elemental or subsystem components of unmanned systems.

**NOTE:** Technician positions typically require appropriate experience and FAA issued certificate to work unsupervised and approve equipment to return to service (e.g. mechanics certificate with airframe rating, power plant rating or A&P). See the following for details: <https://www.faa.gov/mechanics/become/basic/>



### Airframe and Powerplant/Maintenance Technician

These positions typically perform inspections, maintenance, and repairs of moderate to advanced complexity on unmanned (aircraft) systems and structures. Responsibilities include performing complex aircraft inspections, repairs, and modifications with minimal supervision; work with requisite organizations to ensure compliance with internal and FAA inspection and documentation requirements; provide quality assurance inspection to ensure work meets quality standards and specifications; follow standard operating procedures when operating ground support equipment; coordinate aircraft movement in hangar and ramp areas; and provide training to less experienced technicians. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems):

<http://www.bls.gov/ooh/installation-maintenance-and-repair/aircraft-and-avionics-equipment-mechanics-and-technicians.htm>

Experience and pre-requisite undergraduate education relating to a technical discipline recommended (e.g., B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSA-UAS or sUAS Operations minor (in combination with a maintenance minor or coursework)
- BSUSA – Operations or Development tracks
- MSUS-applicable concentrations include sUAS Operations, UAS, or Operations
- MSA- sUAS Operations or UAS (UAS related positions only)

### Avionics Technician

This position supports and performs the installation, inspection, testing, adjustment, or repair of avionics equipment, such as radar, radio, navigation, and operational control systems in unmanned aircraft or space systems. Responsibilities include installation and troubleshooting of wiring and

equipment in accordance with technical specifications and engineering instructions; fabrication, installation, and testing of installation, routing, clamping, and wiring harnesses; review of wiring diagrams and blueprint; supporting operating locations; perform maintenance, disassembly, rework, repair, replacement, re-assembly or adjustment of various systems; and perform analysis and evaluation of products and related performance; and troubleshoot and diagnose malfunctions to eliminate problem in minimum time. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/installation-maintenance-and-repair/aircraft-and-avionics-equipment-mechanics-and-technicians.htm>

Experience and pre-requisite undergraduate education relating to a technical discipline recommended (e.g., B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSA-UAS or sUAS Operations minor (in combination with a maintenance minor or coursework)
- BSUSA – Operations or Development tracks
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, or Operations
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations or Aviation/Aerospace Management recommended)

### **Composite Technician**

This position builds up, fabricates, cures and assembles various types of composite materials, interprets engineering drawing and diagrams, and provides direction and guidance to less experienced staff. Responsibilities include review and use of blueprints, diagrams, process sheets, and assembly and schematic drawings; providing instruction to team; analyzing and resolving work problems; configuring and operation of equipment for testing; inspection of product for defects and verification of specified tolerances; completion of appropriate production records, logs and other report forms; create estimates for task assignment; maintains work procedures to meet production schedules and recommends measures to improve production methods; and assumes responsible for observing all laws, regulations and other applicable obligations when business is conducted on behalf of the company. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/composite-technician-salary-SRCH\\_KO0,20.htm](http://www.glassdoor.com/Salaries/composite-technician-salary-SRCH_KO0,20.htm)

Experience and pre-requisite undergraduate education relating to a technical discipline recommended (e.g., B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSA-UAS minor
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include UAS, Aeronautics and Design, or Operations
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations or Aviation/Aerospace Management recommended)

### **Electronics Technician**

This position works with a multidisciplinary team to develop the emerging unmanned system technology by applying working technical knowledge to perform simple or routine tasks in assembly or configuration of various types of equipment at the component level, following detailed instructions. Responsibilities include assembly and testing of wiring harness, connectors, PCB, and mechanical components; diagnostics; review and implementation of wiring diagrams and engineering drawings; and development or maintenance of documentation. Job related information from U.S.

Bureau of Labor Statistics (not specific to unmanned systems):

<http://www.bls.gov/oes/current/oes173023.htm>

Experience and pre-requisite undergraduate education relating to a technical discipline recommended (e.g., B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSUSA – Operations or Development tracks
- BSET-UAS
- MSUS-applicable concentrations include UAS, Aeronautics and Design, or Operations
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations or Aviation/Aerospace Management recommended)

### **Field Technician/Specialist**

These positions typically support the delivery of products to end users by performing a wide range of tasking in a team environment, including those technician task relating to specific unmanned system platforms and configurations. Responsibilities include applying applicable technical knowledge (e.g., mechanical, hydraulic, aeronautical, and/or electrical principles); supporting communication and interface among stakeholders; performance of duties at locations abroad, both with and without established procedures; performing a variety of nonstandard complex tasks; using advanced techniques of preventive and corrective maintenance; and conducting formal end-user training. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/field-technician-salary-SRCH\\_KO0,16.htm](http://www.glassdoor.com/Salaries/field-technician-salary-SRCH_KO0,16.htm)

Experience and pre-requisite undergraduate education relating to a technical discipline recommended (e.g., B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSA- sUAS Operations or UAS minor
- BSUSA – Operations or Development tracks
- BSET-UAS
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, or Operations
- MSUASE
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations or Aviation/Aerospace Management recommended)

### **Geospatial/Survey and Mapping Technician**

These positions typically provide support for the use and maintenance of GIS/geospatial data, work closely with GIS Database Administrator and Analysts to complete enterprise geodatabase tasks, and perform geospatial data creation, processing, and publishing of data into enterprise geodatabases. Responsibilities include confirmed completion of data updates; facilitating resolution of data quality issues; implementing geodatabase design and metadata standards; providing assistance with completion of geodatabase design documents, metadata, data models, and schema; maintaining knowledge of organization GIS priorities and support expanding use of spatial data to inform management decision-making; participating on collaborative project teams; and providing technical support, as needed. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/surveying-and-mapping-technicians.htm>

Experience and pre-requisite undergraduate education relating to GIS, geography, computer science, management information systems (MIS), information technology (IT), or related scientific or technical discipline recommended (e.g., B.S. in Engineering Technology, Geographic Information Science, Computer Science, Management Information Systems, Information Technology, or Planning)

- BSA- sUAS Operations or UAS minor
- BSUSA – Operations or Development tracks
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, or Operations

### **Maintenance Coordinator**

This position coordinates maintenance servicing, repairing and overhauling of unmanned system components and subsystems, including Ground Support Equipment (GSE), to ensure that system is ready for operational or ground testing. Responsibilities include assuming responsibility for coordinating maintenance servicing, repairing and overhauling of subsystems (e.g. unmanned aircraft, ground control station [GCS], and ground data terminals [GDT]s) to ensure equipment is in good mechanical condition and safe for operation; coordinates schedules for maintenance and inspections; verifies approvals are in place to release vehicle for operation; and develops plans for hardware acquisition, coordinating with applicable stakeholders within and aligned with the organization. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/maintenance-coordinator-salary-SRCH\\_KO0,23.htm](http://www.glassdoor.com/Salaries/maintenance-coordinator-salary-SRCH_KO0,23.htm)

Experience and pre-requisite undergraduate education relating to a technical discipline recommended (e.g., B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSA- sUAS Operations or UAS minor (in combination with a maintenance minor or coursework)
- BSUSA – Operations or Development tracks
- BSET-UAS or Aeronautical Science
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, or Operations
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations or Aviation/Aerospace Management recommended)

## Support Positions

The following represent those positions and roles necessary to support the development, design, testing, application, or operation of unmanned systems and the related business activities.



### **Configuration Management Specialist**

This position develops and maintains configuration management tools to support configuration identification, control, reporting, and delivery of both internally developed and externally purchased commercial-off-the-shelf (COTS) products. Responsibilities include performing configuration management and release engineering tasks to ensure new product operating parameters are documented, comply with standard hardware configurations, and are logistically sustainable; designs, develops, automates, and maintains productivity tools using programming, database or scripting languages to improve software modeling and development; creates and implements build procedures used to support product development and use; develop enterprise-wide configuration standards; and train developers in the use of configuration management tools and implementation of quality standards. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/configuration-management-salary-SRCH\\_KO0,24.htm](http://www.glassdoor.com/Salaries/configuration-management-salary-SRCH_KO0,24.htm)

Experience and pre-requisite undergraduate education relating to a technical, software development, or engineering discipline recommended (e.g., B.S. in Computer Science, Engineering, or related technical topic)

- BSA- sUAS Operations or UAS minor
- BSUSA – Operations or Development tracks
- MSUS-applicable concentrations include sUAS Operations, Aeronautics and Design, or Aviation/Aerospace Management
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Cost Account Manager**

This position leads management efforts related to growing unmanned system business markets by following business growth processes and generating applicable artifacts. Responsibilities include

establishing, maintaining and expanding strong customer relationships with acquisition personnel, key-decision makers, end-mission users and influencers; disposition new opportunities, recommend pursuit strategies, and lead responses to related requests for information (RFIs), broad agency announcements (BAAs), and other pre-request for proposal (RFP) solicitations; generating pursuits with maximum probability of occurrence and competitiveness; identifying and exhibiting the discriminating value proposition to customers; and leading the development of initial approach for technical, cost, schedule and risk bid elements. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/cost-account-manager-salary-SRCH\\_K00,20.htm](http://www.glassdoor.com/Salaries/cost-account-manager-salary-SRCH_K00,20.htm)

Experience and pre-requisite undergraduate education relating to business management, engineering, or technical specialization recommended (e.g., undergraduate in Management, B.S. in Engineering, Engineering Technology, or related technical topic)

- BSA-UAS minor
- BSUSA – Operations or Development tracks
- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, or Aviation/Aerospace Management
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

**Drafter**

This position uses Computer-Aided Design software (CAD) to develop engineering models and drawings from predetermined, basic design data in the general fields of composite (airframe) structures, mechanical systems, and fuel systems. Responsibilities include developing mathematical calculations, preparing complete production drawings, and contributing design modifications to improve quality of product or facilitate manufacturing operations. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/architecture-and-engineering/drafters.htm>

Experience and pre-requisite undergraduate education relating to advanced drafting techniques and 3D CAD solid modeling skills with a basic working knowledge of manufacturing or operational processes and equipment recommended (B.S. in Engineering, Engineering Technology, or related technical degree)

- BSA-UAS minor (in combination of CAD training/experience)
- BSET-UAS or Aeronautical Science
- BSUSA –Development track
- MSUS-applicable concentrations include Unmanned Aerospace Systems or Aeronautics and Design
- MSA-UAS (UAS related positions only)

**Information Technology/Computer Support Specialist/System Administrator**

These positions typically maintain consistent and reliable operation of dedicated and multiple user computer systems, including coordination with network administrators. Responsibilities include interacting with users, evaluating vendor products, coordinating installation and backup recovery, and development and monitoring of policies and standards for allocation related to the use of computing resources. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/computer-and-information-technology/computer-support-specialists.htm>

Experience and pre-requisite undergraduate education relating to management of software and computational resources, network administration, software development, computer science, IT, management, or related scientific or technical discipline recommended.

- BSUSA –Development tracks
- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research
- MSUASE

### **Instructor/Curriculum/Training Developer/Specialist**

These positions typically develop and coordinate curriculum and training programs for operational users, maintainers, or customers in accordance with technical specifications, engineering instructions, technical orders and procedures and military regulations. Responsibilities include development of course content, coordination of training-aid development, conducting training sessions, identifying criteria for evaluating effectiveness of training activities, establishing training schedules, administering examinations, and maintenance of certification records for trained personnel. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems):

<http://www.bls.gov/oes/current/oes131151.htm>

Experience and pre-requisite undergraduate education relating to a research, Engineering, science, or subject-matter discipline recommended (e.g., B.S. in Computer Science, Engineering, Human Factors, Aeronautical Science, Aeronautics, and other technical fields)

- BSA- sUAS Operations or UAS minor
- BSUSA –Administration, Operations, or Development tracks
- MSUS-applicable concentrations include sUAS Operations, UAS, Aeronautics and Design, or Education
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Education Technology or Aviation/Aerospace Operations recommended)

### **Logistician/Logistics Development Specialist**

These positions typically monitor and assess user equipment logistics and sustainment engineering processes to verify requisite elements are captured and synchronized between development, production, and sustainment to maximize the availability, effectiveness, and capability at the lowest Total Ownership Cost. Responsibilities include reviewing and commenting on Logistics Management Information (LMI) summaries, Integrated Support Plans (ISP), and contract data requirement lists (CDRLs); developing and maintaining logistics and sustainment plans, packages, and schedules; and participating in depot planning activities. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/business-and-financial/logisticians.htm>

Experience and pre-requisite undergraduate education associated with logistics planning, obsolescence planning, sustainment, manufacturing, logistics, or technical discipline recommended (e.g., undergraduate in Supply Chain and Logistics Management, Management, Business, B.S. in Engineering Technology, Transportation, or related technical field)

- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research

### **Logistics/Supply Chain/Purchasing Manager**

These positions typically support current and future sourcing needs by providing business, technical, and strategic information to suppliers on a regular basis and foster business relationships to enable key suppliers to apply internal investment to improve their position in meeting current and future sourcing needs. Responsibilities include developing and maintaining relationships with suppliers within the

domain, relevant information to suppliers on a regular basis, fostering business relationships, and identifying and capturing critical performance metrics. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/business-and-financial/purchasing-managers-buyers-and-purchasing-agents.htm>

Experience and pre-requisite undergraduate education associated with logistics planning, obsolescence planning, sustainment, manufacturing, logistics, business, management, or technical discipline recommended (e.g., undergraduate in Supply Chain and Logistics Management, Management, Business, B.S. in Engineering Technology, Transportation, or related technical field)

- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research

### **Management/Strategic Planning Analyst**

These positions typically develop and implement strategies to improve an organization's efficiency, providing advice and guidance to managers regarding techniques and methods to improve profitability, reduce costs, and increase revenue. Responsibilities include leading the capture and analysis of key performance metrics, delivering transparency into performance through regular status reporting, participating in and leading substantial research and analysis projects across operations, finance, product, and performance teams.

Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/business-and-financial/management-analysts.htm>

Experience and pre-requisite undergraduate education associated with economics, finance, computer science, business, research, mathematics, probability, statistics, mathematical logic, science, or subject-matter discipline recommended (e.g., undergraduate in Business, Finance, Project Management, B.S. in Applied Mathematics, Computer Science, Engineering, Human Factors, Mathematics, Statistical Modeling, or related technical discipline)

- MSUS-applicable concentrations include UAS, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research
- MSUASE
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Manufacturing/Materials/Coordinator Planner**

These positions typically support manufacturing/materials build efforts to enable reasonable planning and forecast techniques for collaborative execution of requirements in adherence to the applicable directives, detailed scheduling management, and affiliated intermediate master schedule milestones. Responsibilities include providing daily status and input to management; interfacing with program, production and engineering resources; supporting schedule changes and short range recovery planning activities using leveling techniques and planning factors to optimize performance; and taking action make, buy and/or Bill of Material (BOM) planning activities associated with related Manufacturing Resource Planning (MRP) transactions. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/manufacturing-planner-salary-SRCH\\_KO0,21.htm](http://www.glassdoor.com/Salaries/manufacturing-planner-salary-SRCH_KO0,21.htm)

Experience and pre-requisite undergraduate education relating to a manufacturing, logistics, business, management, or technical discipline recommended (e.g., undergraduate in Supply Chain and Logistics

Management, Management, Business, B.S. in Engineering Technology, Transportation, or related technical field)

- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research
- MSUASE (with undergraduate engineering degree)
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Planning and Documentation Specialist/Technical Writer/Editor**

These positions typically develop and maintain technical, training, and other documentation, utilizing industry best practices and standards for knowledge content. Responsibilities include creation and maintenance of knowledge content for supported systems and software for use by technical support personnel and end users; responding to knowledge submissions and feedback to determine applicable and format of documentation change; and collaborating with subject matter experts to obtain technical information needed to create or maintain knowledge content. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/media-and-communication/technical-writers.htm>

Experience and pre-requisite undergraduate education relating to a research, Engineering, science, or subject-matter discipline recommended (e.g., undergraduate in Communications, B.S. in Aeronautical Science, Aeronautics, Computer Science, Engineering, Human Factors, Aeronautical Science, Aeronautics, and other technical fields)

- BSA-UAS minor
- BSUSA –Administration, Operations, or Development tracks
- BSET-UAS
- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Education, or Aviation/Aerospace Management
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Education Technology or Aviation/Aerospace Operations recommended)

### **Program/Project Scheduler/Analyst**

These positions typically plan, track, analyze, and report on projects of varying contract type, size and complexity. Responsibilities include coordination of subcontractor schedules, preparing customer deliverables, assisting with variance analysis, and supporting the uniform application of applicable procedures and standards. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/program-scheduler-salary-SRCH\\_KO0,17.htm](http://www.glassdoor.com/Salaries/program-scheduler-salary-SRCH_KO0,17.htm)

Experience and pre-requisite undergraduate education relating to management and/or business administration recommended (e.g., undergraduate in Business Administration or Management)

- BSUSA –Administration or Operations track
- MSUS-applicable concentrations include Operations, and/or Aviation/Aerospace Management
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

## Management Positions

The following represent those positions and roles necessary to manage unmanned system development, design, testing, application, operation, and/or related business activities.



### Acquisition and Technology Lead

See description under *Acquisition/Business Development Positions*

### Aviation/Flight Department/Operations Manager

These positions typically monitor and assess activities in providing ground handling services, identify strategic and tactical initiatives, and enable the department to anticipate and exceed needs of the customer and/or organization. Responsibilities include reviewing reports and records to ascertain data required for planning department operations; monitoring and assessing all fueling and ground handling functions; ensuring personnel and equipment are available; maintaining effective relations with customers; providing input to budgetary process; investigating causes of accidents and recommending safety measures for preventing further occurrences; carrying out supervisory responsibilities in accordance with the organization's policies and applicable laws; ensuring disciplinary procedures are conducted in a fair, timely, and consistent manner; reporting all accidents and injuries and investigating ways to prevent reoccurrence; and ensuring personnel successfully complete applicable training programs; and confirming compliance with standards and policies. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems):

<http://www.bls.gov/oes/current/oes111021.htm>

Experience and pre-requisite undergraduate education relating to a business or technical discipline recommended (e.g., undergraduate in business, B.S. in Aviation Maintenance, Aeronautical Science with Aviation Maintenance Operations [minor], or Engineering Technology)

- BSA- sUAS Operations or UAS minor (in combination with maintenance or management minor/coursework)
- BSUSA –Operations track
- MSUS-applicable concentrations include sUAS Operations, UAS, Operations, Aviation/Aerospace Management
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Business Development Manager**

See description under *Acquisition/Business Development Positions*

### **Contracts Manager**

This position provides direct contract support such as review and approval of contractual documents to ensure protection of organization's contractual positioning (risk posture), satisfaction of contractual requirements, adherence to policies, and cooperative engagement with subcontract managers to determine appropriate flow downs for subcontract formation. Responsibilities include providing proposal support; managing cost proposal volumes; supporting fact-finding and negotiation; review and analysis of solicitations to understand requirements and advise Program Management of all relevant contract issues; ensuring proposals are fully responsive to prospective customer requirements; collaboration with International Trade Compliance to ensure program(s) adhere to all Export/Import requirements; oversee contract performance by monitoring budget, compliance documents, schedules, deliverables, and recommend actions to ensure mutually satisfactory performance; advise management of contractual rights and obligations; provide interpretation of terms and conditions; maintain official program records; and interface with senior management and customer counterparts. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems): [http://www.glassdoor.com/Salaries/contracts-manager-salary-SRCH\\_KO0,17.htm](http://www.glassdoor.com/Salaries/contracts-manager-salary-SRCH_KO0,17.htm)

Experience and pre-requisite undergraduate education relating to legal, regulatory, contract administration, or management discipline recommended (e.g., undergraduate in Government Contract Management, Acquisition and Contract Management, Management, or Business)

- MSUS-applicable concentrations include Operations or Aviation/Aerospace Management
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

### **Cost Account Manager**

See description under *Support Positions*

### **Engineering/Product/Project Manager**

These positions typically provide planning, managing, and technical performance of one or more programs associated with newly developed unmanned systems or related technology. Responsibilities include management of subsystems and other components for new production, spares, and depot repairs; coordination of program efforts with other departments and units to support on time delivery performance; provides tracking and expediting support for production of programs, including scheduling, cost and performance monitoring, bill-of-material support, and technical analysis reporting; managing the configuration of pre-production systems; development and management of program plans, Work Breakdown Structures (WBS), integrated master schedules, and budgets; leading technical staff in the development and implementation of current, annual, and long-term technical, schedule, quality, business, and financial objectives for the projects. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems):

<http://www.bls.gov/ooh/management/architectural-and-engineering-managers.htm>

Experience and pre-requisite undergraduate education relating to an engineering, business, management, or technical discipline recommended (e.g., undergraduate in Management, Business, B.S. in Engineering, Engineering Technology, or related technical field)

- BSUSA –Development track

- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research
- MSUASE
- MSA-UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Management recommended)

**Information Technology/Computer/Information Systems Manager**

These positions typically provide leadership, direction, and support of IT solutions, including software requirements, architecture, design, testing, deployment, implementation, and support. Responsibilities include providing tactical and strategic IT leadership and coordination for management of software, including configuration management, quality assurance, and tools; supporting strategy development, budget and cost management, proposal development, product/service acquisition and delivery, teaming relationships, and communication activities; ensuring expedient, cost effective delivery and customer satisfaction; collaboration with equivalent level managers and customer representatives concerning special projects, operational decisions, internal reviews, scheduling requirements, or contractual clarifications; and conducting briefings and technical meetings for internal and external representatives. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>

Experience and pre-requisite undergraduate education relating to software development, computer science, IT, management, or related scientific or technical discipline recommended.

- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research
- MSUASE

**Logistics/Supply Chain/Purchasing Manager**

See description under *Support Positions*

**Production/Manufacturing/Assembly Supervisor/Manager**

These positions typically directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators. Responsibilities include managing the planning, preparation, issue, control and coordination of production schedules and material requirements to ensure a controlled flow of materials; managing work in progress and material availability, and resolves complex problems to ensure projects are completed on schedule and within budget; recommends modifications to operating policies when needed; providing leadership and direction of daily activities of assigned staff; and performing analysis and processing of work orders, sales orders, purchase requisitions, and material transactions for disposition. Job related information from U.S. Bureau of Labor Statistics (not specific to unmanned systems): <http://www.bls.gov/oes/current/oes511011.htm>

Experience and pre-requisite undergraduate education relating to a manufacturing, logistics, business, management, or technical discipline recommended (e.g., undergraduate in Supply Chain and Logistics Management, Management, Business, B.S. in Engineering Technology, Transportation, or related technical field)

- MSUS-applicable concentrations include UAS, Aeronautics and Design, Operations, Aviation/Aerospace Management, or Aviation/Aerospace Research

## Operations Positions

The following positions and roles represent those associated with the operation and application of unmanned systems and related business activities.



### Aviation/Flight Department Manager

See description under *Management Positions*

### Data/Operations Research Analyst

See description under *Analysis, Development, and Engineering Positions*

### Instructor Operator/Pilot

These positions typically perform as Instructor Operator in both (flight) simulators and actual (flight) operations to train applicable personnel in the operation of unmanned systems and related technology by utilizing various forums (e.g., formal classroom training, flight simulators, course facilitation, asynchronous methods [online], or workshops). Responsibilities include assessment of training scenarios, approaches, objective plans, tools, aids, curriculums and other training technologies; identifying best approaches to training; development and maintenance of knowledge bases; preparation of training material; and maintenance of currency in the area of expertise. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (specific to UAS): [http://www.glassdoor.com/Salaries/operator-uas-salary-SRCH\\_KO0,8\\_KE9,12.htm](http://www.glassdoor.com/Salaries/operator-uas-salary-SRCH_KO0,8_KE9,12.htm)

Experience and pre-requisite undergraduate education relating to an engineering, scientific, or technical discipline, in addition to required flight ratings (UAS only) recommended (e.g., B.S. in Aeronautical Science, Aeronautics, Engineering, Engineering Technology, or related technical field)

- BSA- sUAS Operations
- BSUSA –Operations track
- MSUS-applicable concentrations include sUAS Operations or if already FAA licensed, UAS, Operations, or Aviation/Aerospace Research
- MSA- sUAS Operations (UAS related positions only, dual-specialization with Aviation/Aerospace Operations recommended)

### Operations Specialist/Analyst

These positions typically support unmanned systems operations, including monitoring and enforcement of operational (flight), fire and life safety regulations/procedures, provide crash response services to unmanned systems, and preparation of site for follow-on investigation in accordance with the facility

pre-mishap plan. Responsibilities include supporting fire prevention activities and services throughout the operational area (airfield/facility); responding to other emergencies as necessary; coordinating with public emergency services; implementing wildlife control/dispersal/disposal methods; ensuring compliance with required training and maintenance of required certifications; observation of all laws, regulations, and other applicable obligations. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (not specific to unmanned systems):

[http://www.glassdoor.com/Salaries/operations-specialist-salary-SRCH\\_KO0,21.htm](http://www.glassdoor.com/Salaries/operations-specialist-salary-SRCH_KO0,21.htm)

Experience and pre-requisite undergraduate education relating to an engineering, scientific, or technical discipline recommended (e.g., B.S. in Fire Services, Emergency Response, Operations, Aeronautical Science, Aeronautics, Engineering Technology, or related technical field)

- BSA- sUAS Operations or UAS minor (UAS only)
- BSUSA –Operations track
- MSUS-applicable concentrations include sUAS Operations, UAS, Operations, or Aviation/Aerospace Research
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations recommended)

### **Operator/Pilot**

These positions typically provide support for the planning, coordination, and execution of testing, training, and commercial missions through safe and effective operation of ground control stations; performing all necessary system field maintenance, while serving as an Operator, in accordance with established operating procedures. Responsibilities include supporting planning, coordination and execution of missions/applications; operation of systems in accordance with established operating procedures; providing performance feedback to support improvement; providing technical advice and employment recommendations to customer; configuring equipment and sensor payloads to meet mission requirements; performance of limited data processing. No job related information available from U.S. Bureau of Labor Statistics, see the following for additional information (specific to UAS):

[http://www.glassdoor.com/Salaries/operator-uas-salary-SRCH\\_KO0,8\\_KE9,12.htm](http://www.glassdoor.com/Salaries/operator-uas-salary-SRCH_KO0,8_KE9,12.htm)

Experience and pre-requisite undergraduate education relating to an engineering, scientific, or technical discipline, in addition to required flight ratings (e.g., Remote Pilot Certificate; UAS only) recommended (e.g., B.S. in Aeronautical Science, Aeronautics, Engineering, Engineering Technology, or related technical field)

- BSA- sUAS Operations
- BSUSA –Operations track
- MSUS-applicable concentrations include sUAS Operations or, if already FAA licensed, UAS, Operations or Aviation/Aerospace Research
- MSA- sUAS Operations or UAS (UAS related positions only, dual-specialization with Aviation/Aerospace Operations recommended)

## Companies

This section identifies examples of organizations that have advertised openings or are anticipated to experience growth relating to unmanned systems. The following subsections contain references to specific companies associated with each operational domain or system type.

### Unmanned Aircraft/Aerial/Aerospace Systems (UAS)

The following organizations have identified career/job opportunities or perceived growth associated with unmanned systems in the air and/or space operational domains, including UAS, remotely piloted aircraft (RPA), optionally piloted aircraft (OPA), and unmanned exo-atmospheric systems (e.g., X-37B, satellites, and space-borne probes).



- AeroVironment
- Aeryon Labs
- Amazon
- Arcturus UAV
- Aurora Flight Sciences
- BAE Systems
- Battlespace Flight Services
- Boeing/Insitu
- Booz Allen Hamilton
- Camber Corporation
- CDI Corporation
- Crane Aerospace & Electronics
- Decisive Analytics Corporation
- DCS Corp
- DJI
- Engility Corporation
- Federal Aviation Administration (FAA)
- General Atomics Aeronautical Systems
- General Dynamics
- GE Energy Management
- Google/Titan Aerospace
- IAP World Services
- KBRWyle
- Lockheed Martin
- L3 Technologies
- Leidos
- Marotta Controls
- Modern Technology Solutions, Inc.
- National Aeronautics and Space Administration (NASA)
- National Robotics Engineering Center
- Northrop Grumman
- OneALPHA Corporation
- Paradigm Precision
- PAE
- Parrot
- Pinnacle Solutions
- PrecisionHawk Unmanned Systems
- QinetiQ North America
- Raytheon
- Riverside Research
- Rockwell Collins
- Rolls-Royce
- SAIC
- Sierra Nevada Corporation
- SRC
- System Dynamics International
- Swift Navigation
- System One
- Tellus Solutions
- Textron
- ThoughtWorks
- US Department of Defense (US DOD; including US Air Force, Army, and Naval Research Laboratories and DARPA)

## Unmanned Ground Systems

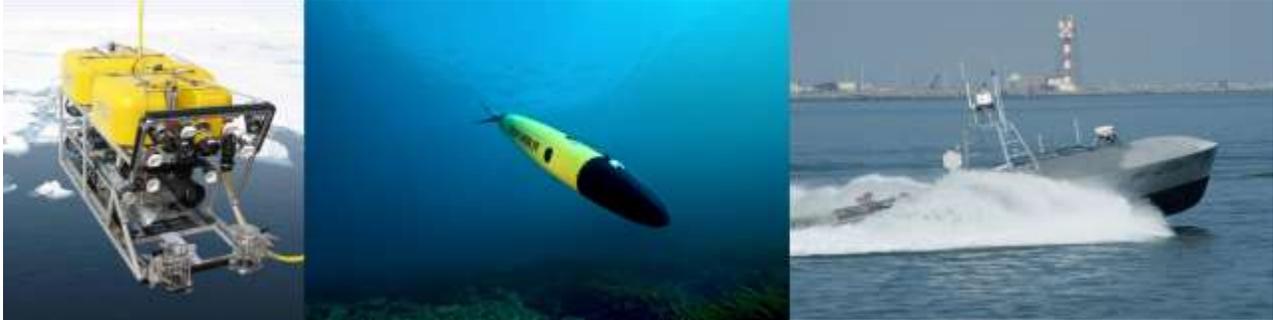
The following organizations have identified career/job opportunities or perceived growth associated with ground-based unmanned systems, including mobile robotics, unmanned ground vehicles (UGV), mobile robotics, autonomous automobiles, and surface rovers.



- Alion Science and Technology
- Amazon
- Anki
- Applied Research Associates
- Amazon Robotics
- Autonomous Solutions
- Automotive Robotics
- Boeing
- Corning
- Ford Motor Company
- General Motors
- IBM
- iRobot Corporation
- Kratos Defense & Security Solutions
- Lockheed Martin
- McKim & Creed
- Nauto
- Northrop Grumman
- Omron Adept Technologies
- QinetiQ North America
- Southwest Research Institute
- Tesla Motors
- Toyota Research Institute
- Uber
- US DOD (including US Air Force, Army, and Naval Research Laboratories and DARPA)

## Unmanned Maritime Systems

The following organizations have identified career/job opportunities or perceived growth associated with maritime-based unmanned systems, including underwater autonomous vehicles (AUV)s, remotely operated vehicles (ROV)s, unmanned surface vessels (USV)s, and unmanned undersea (or underwater) vessels (UUV)s.



- Alion Science and Technology
- Booz Allen Hamilton
- Camber Corporation
- Exelis
- Exocetus Autonomous Systems
- General Dynamics
- L3 Technologies
- Leidos
- Liquid Robotics
- Lockheed Martin
- QinetiQ
- SAIC
- STS International
- Teledyne Technologies Incorporated
- The John Hopkins Applied Physics Laboratory
- US DOD (including US Air Force, Army, and Naval Research Laboratories and DARPA)

## Current Career Opportunities (2018)

This section identifies the attributes and characteristics of current career field, based on advertised positions. The information presented in this section was captured January 2018 and is subject to change, based on market and workforce conditions.

### Location Specific Information

The following depicts a sample of advertised number of positions associated with unmanned system technology development, management, manufacturing, support, or operations at specific locations across the U.S.:



- **Alabama**
  - Huntsville (197)
- **California**
  - Greater Los Angeles area (277)
  - Greater San Francisco area (679)
  - San Diego (210)
- **District of Columbia**
  - Greater Washington area (490)
- **Florida**
  - Melbourne (8)
  - Tampa (7)
- **Georgia**
  - Greater Atlanta area (5)
- **Indiana**
  - Greater Indianapolis area (33)
- **Louisiana**
  - New Orleans (13)
- **Massachusetts**
  - Greater Boston area (138)
- **Maryland**
  - Greater Baltimore area (45)
- **Michigan**
  - Greater Detroit area (82)
- **New York**
  - Central NY area (9)
  - NYC area (42)
- **Ohio**
  - Dayton (15)
- **Pennsylvania**
  - Greater Pittsburgh area (106)
- **Texas**
  - Austin (45)
  - Greater Dallas-Fort Worth area (28)
  - Houston (11)
  - San Antonio (18)
- **Utah**
  - Salt Lake City (8)
- **Washington**
  - Bingen (7)
- **United States**
  - Unspecified Locations (2779)

## Number of Positions and Salary Ranges

The following represent the number of available unmanned systems related positions advertised across the U.S. at varying salary levels and associated with specific categories (total value 6,810 advertised positions equal to an estimated \$744.75 million):

- **Unmanned Systems** (all subject domains; 6,810 positions)
  - <\$50,000 (1,215)
  - \$50,000-\$69,999 (964)
  - \$70,000-\$89,999 (1,318)
  - \$90,000-\$109,999 (1,707)
  - \$110,000-\$129,999 (1,076)
  - \$130,000+ (530)

## Domain Specific Information

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <b>Unmanned Aircraft/Aerial Systems</b> (1,412) <ul style="list-style-type: none"> <li>○ &lt;\$50,000 (246)</li> <li>○ \$50,000-\$69,999 (236)</li> <li>○ \$70,000-\$79,000 (280)</li> <li>○ \$90,000-\$109,000 (372)</li> <li>○ \$110,000-\$129,999 (222)</li> <li>○ \$130,000+ (56)</li> </ul> </li> <li>• <b>Unmanned/Mobile Robotic Systems</b> (2,786) <ul style="list-style-type: none"> <li>○ &lt;\$50,000 (438)</li> <li>○ \$50,000-\$69,999 (414)</li> <li>○ \$70,000-\$79,000 (592)</li> <li>○ \$90,000-\$109,000 (746)</li> <li>○ \$110,000-\$129,999 (431)</li> <li>○ \$130,000+ (165)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Unmanned Ground/Autonomous Vehicle</b> (2,538) <ul style="list-style-type: none"> <li>○ &lt;\$50,000 (518)</li> <li>○ \$50,000-\$69,999 (303)</li> <li>○ \$70,000-\$79,000 (419)</li> <li>○ \$90,000-\$109,000 (575)</li> <li>○ \$110,000-\$129,999 (419)</li> <li>○ \$130,000+ (304)</li> </ul> </li> <li>• <b>Unmanned Maritime/ROV</b> (74) <ul style="list-style-type: none"> <li>○ &lt;\$50,000 (13)</li> <li>○ \$50,000-\$69,999 (11)</li> <li>○ \$70,000-\$79,000 (27)</li> <li>○ \$90,000-\$109,000 (14)</li> <li>○ \$110,000-\$129,999 (4)</li> <li>○ \$130,000+ (5)</li> </ul> </li> </ul> |
|--|--|

**NOTE:** The following search terms were used to capture and calculate the presented data from Indeed.com: “unmanned aircraft”; “unmanned aerial”; “unmanned system”; “unmanned robotic”; “mobile robotics”; “unmanned ground”; “autonomous vehicle”; “unmanned maritime”; and “remotely operated vehicle.”