



Developed in Cooperation with the
U.S. Department of Labor
Office of Apprenticeship

Registered Apprenticeship Program Standards

Approved by the U.S. Department of Labor
Office of Apprenticeship.

Sponsored By

- National Program Standards
- National Guidelines for Apprenticeship Standards
- Local Apprenticeship Standards



Registration Date:

2 June, 2021

Program Number:

2021-NE-88214

EIN:

46-4011539

2051 Florence Blvd.
Omaha, NE 68110
(816)-777-9363

Occupation(s)	O*Net Code	RAPIDS Code
Commercial Drone Software Developer	15-1133.00	2072
Commercial Drone Pilot	17-3024.00	0167

Approved by:

Jim Wightman

Jim Wightman, State Director
USDOL - Office of Apprenticeship



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SECTION I – STANDARDS OF APPRENTICESHIP 29 CFR § 29.5

A. Responsibilities of the sponsor: Infinite 8 Institute must conduct, operate, and administer this program in accordance with all applicable provisions of Title 29 Code of Federal Regulations (CFR) parts 29 and 30, and all relevant guidance issued by the Office of Apprenticeship (OA). The sponsor must fully comply with the requirements and responsibilities listed below and with the requirements outlined in the document “Requirements for Apprenticeship Sponsors Reference Guide.”

Sponsors shall:

1. Ensure Participating Employers are under an Employer Participation Agreement.
2. Ensure Employer’s Name, address NAICS and EIN are annotated into RAPIDS 2.0.
3. Act as single point of contact to company business partners, human resources, institutional leaders where applicable and Department of Labor resources to resolve issues and facilitate modifications to program requirements where applicable.
4. Ensure adequate and safe equipment and facilities for training and supervision and provide safety training for apprentices on-the-job and in related instruction.
5. Ensure there are qualified training personnel and adequate supervision on the job.
6. Ensure that all apprentices are under written apprenticeship agreements incorporating, directly or by reference, these standards and the document “Requirements for Apprenticeship Sponsors,” and that meets the requirements of Title 29, CFR part 29.7. Form ETA 671 may be used for this purpose and is available upon logging into RAPIDS.
7. Register apprenticeship standards with the U.S. Department of Labor.
8. Arrange for periodic evaluation of apprentices’ progress in skills and technical knowledge, and maintain appropriate progress records.
9. Notify the U.S. Department of Labor and participating employers within 45 days of all new registration agreements, modifications, and amendments; credit granted to apprentices; suspensions for any reason; reinstatements; extensions; cancellations; transfers; and any requests for Certificates of Completion; and notice of transfers, suspensions, and cancellations and a statement of the reasons therefore. Notification may be made in RAPIDS.
10. Provide each apprentice with a copy of these standards and Appendix A, any applicable written rules and policies, and require apprentices to sign an acknowledgment of their receipt. If the sponsor alters these standards or any Appendices to reflect changes it has made to the apprenticeship program, the



sponsor will obtain approval of all modifications from the Registration Agency, then provide apprentices a copy of the updated standards to the participating employers and Appendices and obtain another acknowledgment of their receipt from each apprentice.

11. Provide all apprentices instruction in safe and healthful work practices both on the job and in related instruction that are in compliance with the Occupational Safety and Health Administration standards promulgated by the Secretary of Labor under 29 U.S.C. 651 et seq., or State standards that have been found to be at least as effective as the Federal standards.
12. Have the necessary facilities to assure effective training in all aspects of the occupation(s).
13. Exercise precaution for the health and safety of apprentices in the workplace at all times.
14. Provide a positive learning environment and encourage training at all levels.
15. Provide fair and equitable treatment for all apprentices.

Duties and Responsibilities of the participating employers

1. Have the necessary facilities to assure effective training in all aspects of the occupation(s).
2. Assure apprentices are under the supervision of qualified professionals.
3. Exercise precaution for the health and safety of apprentices in the workplace at all times.
4. Provide a positive learning environment and encourage training at all levels.
5. Provide fair and equitable treatment for all apprentices.
6. Notify the Sponsor of any change in status of apprentices.
7. Provide the Sponsor with all necessary and requested documentation concerning the apprentice.

B. Minimum Qualifications - 29 CFR § 29.5(b)(10)

An apprentice must be at least 16 years of age, except where a higher age is required by law, and must be employed to learn an apprenticeable occupation. Please include any additional qualification requirements as appropriate.

- **Educational Requirements:** Applicant must be enrolled in High School and/or shall be a high school graduate, or its equivalent. Applicant must provide an official transcript(s) for high school and if applicable post high school education and training. All /GED records must be submitted. Educational requirements must be met before the end of the related instruction portion of this program.
- **Physical requirements:** Applicants will be physically capable of performing the essential functions of the apprenticeship program, with or without a reasonable accommodation, and without posing risk to the health and safety of the individual or others.
- **Other:** Applicants must submit a DD-214 to verify military training and/or experience if they are a veteran and wish to receive consideration for such training/experience.
- **Other:** All selected applicants must pass the current illegal drug test

C. Apprenticeship Approach and Term - 29 CFR § 29.5(b)(2)

The apprenticeship program(s) will select an apprenticeship training approach. See Appendix A to select approach.

D. Work Process Schedule and Related Instruction Outline - 29 CFR § 29.5(b)(4)

Every apprentice is required to participate in related instruction in technical subjects related to the occupation.



Apprentices **may** be paid for hours spent attending related instruction classes based on policies of the Participating Employers. This will be stated in writing prior to hiring.. Insert Work Process Schedule and Related Instruction Outline at Appendix A.

E. Credit for Previous Experience – 29 CFR § 29.5(b)(12)

Apprentice applicants seeking credit for previous experience gained outside the apprenticeship program must furnish such transcripts, records, affidavits, etc. that may be appropriate to substantiate the claim. Infinite 8 Institute//participating employer will evaluate the request for credit and make a determination during the apprentice’s probationary period.

F. Probationary Period –29 CFR § 29.5(b)(8) and (20)

Every applicant selected for apprenticeship will serve a probationary period which may not exceed 25 percent of the length of the program or 1 year whichever is shorter. Insert probationary period at Appendix A.

G. Ratio of Apprentices to Journeyworkers - 29 CFR § 29.5(b)(7)

Every apprenticeship program is required to provide an apprenticeship ratio of apprentices to journeyworkers for adequate supervision. Insert ratio at Appendix A.

H. Apprentice Wage Schedule - 29 CFR § 29.5(b)(5)

Apprentices must be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate. Insert the progressive wage schedule at Appendix A.

I. Equal Employment Opportunity and Affirmative Action

1. Equal Opportunity Pledge - 29 CFR §§ 29.5(b)(21) and 30.3(c)(1)

Infinite 8 Institute//participating employer will not discriminate against apprenticeship applicants or apprentices based on race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, genetic information, or because they are an individual with a disability or a person 40-years old or older.

Infinite 8 Institute//participating employer will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required under Title 29 of the Code of Federal Regulations, part 30.

2. Affirmative Action Program - 29 CFR §§ 29.5(b)(21), 30.4, and 30.10

Infinite 8 Institute acknowledges that it will adopt an affirmative action plan in accordance with 29 Title CFR § 30.4-30.9 (required for sponsors with five or more registered apprentices by two years from the date of the sponsor’s registration or by two years from the date of registration of the program’s fifth (5th) apprentice). Information and technical assistance materials relating to the creation and maintenance of an affirmative action plan will be made available on the Office of Apprenticeship’s



website.

3. Selection Procedures - 29 CFR § 30.10

Every sponsor will adopt selection procedures for their apprenticeship programs, consistent with the requirements set forth in 29 CFR § 30.10(b). See Appendix A to enter your selection procedures for each occupation for which the sponsor intends to train apprentices.

J. Complaint Procedures - 29 CFR §§ 29.5(b)(22), 29.7(k), 29.12, and 29 CFR § 30.14

If an applicant or an apprentice believes an issue exists that adversely affects the apprentice's participation in the apprenticeship program or violates the provisions of the apprenticeship agreement or standards, the applicant or apprentice may seek relief. Nothing in these complaint procedures precludes an apprentice from pursuing any other remedy authorized under another Federal, State, or local law. Below are the methods by which apprentices may send a complaint:

- 1. Complaints regarding discrimination.** Complaints must contain the complainant's name, address, telephone number, and signature, the identity of the respondent, and a short description of the actions believed to be discriminatory, including the time and place. Generally, a complaint must be filed within 300 days of the alleged discrimination. Complaints of discrimination should be directed to the following contact:

U.S. Department of Labor, Office of Apprenticeship
200 Constitution Ave. NW, Washington, DC 20210
(202) 693-2796
ApprenticeshipEEOcomplaints@dol.gov
Division Chief, Division of Registered Apprenticeship and Policy
Attn: Apprenticeship EEO Complaints

You may also be able to file complaints directly with the EEOC, or State fair employment practices agency.

- 2. Other General Complaints.** The sponsor will hear and attempt to resolve the matter locally if written notification from the apprentice is received within 15 days of the alleged violation(s). The sponsor will make such rulings as it deems necessary in each individual case within 30 days of receiving the written notification (To be completed by

Ean Mikale, J.D. - Chief Innovation Officer
2051 Florence Blvd.
Omaha, NE 68110
(816)-777-9363
ean@infinite8institute.com

Any complaint described above that cannot be resolved by the program sponsor to the satisfaction of all parties may be submitted to the Registration Agency provided below in Section K.

K. Registration Agency General Contact Information 29 CFR § 29.5(b)(17)

The Registration Agency is the United States Department of Labor's Office of Apprenticeship. General



inquiries, notifications and requests for technical assistance may be submitted to the Registration Agency using the contact information below (To be completed by OA):

Jim Wightman-Nebraska State Director
U.S. Department of Labor/Office of Apprenticeship
Central Park Plaza, South Tower
222 South 15th Street Suite 504-C
(757) 630-9375
wightman.james.e@dol.gov

L. Reciprocity of Apprenticeship Programs 29 CFR § 29.13(b)(7)

States must accord reciprocal approval for Federal purposes to apprentices, apprenticeship programs and standards that are registered in other States by the Office of Apprenticeship or a Registration Agency if such reciprocity is requested by the apprenticeship program sponsor.

Program sponsors seeking reciprocal approval must meet the wage and hour provisions and apprentice ratio standards of the reciprocal State.

M. Veterans' Educational Assistance as Mandated by Public Law 116-134 (134 STAT.276)

Pursuant to section 2(b)(1) of the Support for Veterans in Effective Apprenticeships Act of 2019 (Pub. L. 116-134, 134 Stat. 276), by signing these program standards, the program sponsor official whose name is subscribed below assures and acknowledges to the U.S. Department of Labor's Office of Apprenticeship the following regarding certain G.I. Bill and other VA-administered educational assistance referenced below (and described in greater detail at the VA's website at: <https://www.va.gov/education/eligibility>) for which current apprentices and/or apprenticeship program candidates may be eligible:

1. The program sponsor is aware of the availability of educational assistance for a veteran or other eligible individual under chapters 30 through 36 of title 38, United States Code, for use in connection with a registered apprenticeship program;
2. The program sponsor will make a good faith effort to obtain approval for educational assistance described in paragraph (1) above for, at a minimum, each program location that employs or recruits an veteran or other eligible individual for educational assistance under chapters 30 through 36 of title 38, United States Code; and
3. The program sponsor will not deny the application of a qualified candidate who is a veteran or other individual eligible for educational assistance described in paragraph (1) above for the purpose of avoiding making a good faith effort to obtain approval as described in paragraph (2) above.

NOTE: *The aforementioned requirements of Public Law 116-134 shall apply to "any program applying to become a registered apprenticeship program on or after the date that is 180 days after the date of enactment of this Act" (i.e., September 22, 2020). Accordingly, apprenticeship programs that were registered by a Registration Agency before September 22, 2020, are not subject to these requirements.*



SECTION II - APPENDICES AND ATTACHMENTS

- Appendix A** – *Work Process Schedule, Related Instruction Outline, Apprentice Wage Schedule, Ratio of Apprentices to Journeyworkers, Type of Occupation, Term of Apprenticeship, Selection Procedures, and Probationary Period*
- Appendix B** – *ETA 671 - Apprenticeship Agreement and Application for Certification of Completion of Apprenticeship (To be completed after registration)*
- Appendix C** – *Affirmative Action Plan (Required within two years of registration unless otherwise exempt per 29 CFR §30.4(d))*
- Appendix D** – *Employer Acceptance Agreement (For programs with multiple-employers only)*



SECTION III - SIGNATURES

OFFICIAL ADOPTION OF APPRENTICESHIP STANDARDS

The undersigned sponsor hereby subscribes to the provision of the Apprenticeship Standards formulated and registered by *Infinite 8 Institute*, on this 2nd day of June, 2021.

The signatories acknowledge that they have read and understand the document titled “Requirements for Apprenticeship Sponsors Reference Guide” and that the provisions of that document are incorporated into this agreement by reference unless otherwise noted.

A handwritten signature in black ink, appearing to read "Ean Mikale", is written above a horizontal line.

Ean Mikale, J.D.

SECTION IV - DISCLOSURE AGREEMENT (*Optional*)

I, *Ean Mikale, J.D.*, acting on behalf of *Infinite 8 Institute* authorize OA to share the Work Process Schedule and Related Instruction Outline in Appendix A with other potential apprenticeship sponsors.

Ean Mikale, J.D.

June 2nd, 2021



WORK PROCESS SCHEDULE

<i>Occupation(s)</i>	<i>O*Net Code</i>	<i>RAPIDS Code</i>
Commercial Drone Software Developer	15-1133.00	2072

This schedule is attached to and a part of these Standards for the above identified occupation.

APPRENTICESHIP APPROACH

- Time-based
 Competency-based
 Hybrid

TERM OF APPRENTICESHIP

The term of the apprenticeship is 1 1/2 years with an OJL attainment of 3,360 hours, supplemented by the minimum required 504 hours of related instruction.

RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 Apprentice(s) to 1 Journeyworker(s).

APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate, which is: **\$10.50**

Months	Wages/Hour
0-6	\$9.00
6-12	\$9.50
12 -Completion	\$10.00

PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of 500 hours.



SELECTION PROCEDURES

Candidates will be selected through a screening process by individual participating employers that includes an application and group or individual interview. Candidates will be reviewed and selected based on qualifications related to the position. Employment decisions will be based on merit, regardless of race, color, creed, gender, religion, marital status, age, national origin or ancestry, physical or mental disability, medical condition, genetic information, gender identity, sexual orientation, military status, or any other consideration made unlawful by federal, state, or local laws. All such discrimination is unlawful and prohibited.

The sponsor has adopted the following selection procedures, consistent with the requirements set forth in 29 CFR § 30.10(b):



APPENDIX A 1

ON THE JOB LEARNING		
(OJL)		
Commercial Drone Software Developer	15-1133.00	2072

TARGETED QUARTERS	DESCRIPTION	APROXIMATE HOURS
1st	Drone Computer Languages – Students are to learn the fundamentals of drone-based computer languages, such as the C languages, Ruby on Rails, and Python through applied application. Students will explore within the organizational framework, the most effective languages for integrating and communicating drone-based processes, and efficiency in terms of scalability for technology commercialization.	480
2nd	Artificial Intelligence/Robotics Basics – Students will work within organization to introduce artificial intelligence and write reports on the feasibility of integrating AI for new and existing use cases for drone based products and/or services to enhance productivity and efficiency. Students may write original algorithms and conduct machine learning utilizing visual and pattern recognition technology for the purpose of commercial applications.	480
3rd	Intermediate Cognitive Applications & Robotics – Students will work with the creation of artificial neural networks and deep learning applications in the field. Students will conduct assessments and reports regarding the potential for cognitive applications to be used within organizational work environments, as well as utilizing robots for depth perception and solutions for logistics and supply chain management. Students will also explore the feasibility of integrating IBM’s Watson supercomputer into commercial drone applications, which is capable of speech to text, visual recognition, emotional intelligence, and other varied services.	480
4 th	Internet of Things – Students will work to solve real-world workplace problems, and providing industry solutions through the applied development of IoT applications, prototype development and Lean business model development, for the conceptual design and potential implementation of IoT technology into the organizational structure and business vision.	480
5 th	Localization Laboratory – Students will become exposed to various types of propulsion systems for aquatic, amphibious, land, air, low-orbit, and space based autonomous systems. Specifically, students will focus on a common thread in each module, concerning an emphasis on sensory localization in dynamic environments.	480



APPENDIX A 1

6th	Disruptive Drone Innovations – Students will learn about emerging technologies within the commercial drone sector, and how to adapt organizational behavior, strategy, or resource allocation in order to maximize future opportunities and product value. Students will work with emerging technologies such as edge computing, swarm technology, quantum computing, block chain technology, cyber security for embedded systems, virtual reality, and augmented reality to name a few.	480
7th	Drone Laboratory – Students will work on original, proprietary, or open-source research topics, and/or the development of commercial drone prototypes utilizing any of the development languages, engineering techniques, artificial intelligence and machine learning models for the furthering of the student learning experience, benefit of potential or current employers, and overall advancement of the overall STEM eco-system and Commercial Drone industry in America.	480
Total Hours		3,360

Work Process Schedule: Approximate Hours:



APPENDIX A 1

RELATED INSTRUCTION OUTLINE		
(RTI)		
Commercial Drone Software Developer	15-1133.00	2072

RTI provider **Infinite 8 Institute, L3C**
 Ean Mikale, J.D.
 Chief Innovation Officer
 950 S 10th Street
 Omaha, NE 68108
 (816) 777-9363
 ean@infinite8institute.com

Class Subject	Hours
Part 107 Regulations	24
Introduction to Python	24
C++ for Beginners	24
Linux 101	24
C++ Applied(DroneCode.org)	24
Drone Software Developer Market Analysis/ Career Counseling	24
Machine Vision and the NVIDIA Jetson TX2	24
Building Autonomous Systems with ROS	24
Low-orbit Propulsion Systems and Satellite Technology	24
Space Propulsion Systems (Airforce Institute of Technology)	24
Propulsion Technologies- Uninhabited Air Vehicles (Commission on Engineering and Technical Systems)	24
Underwater and Land-based Autonomous Systems Laboratory	24
Blockchain Applied Commercialization	24
Quantum Theory/Lab	24
Deep Neural Network Applied Basics	24
The Applied Science of IoT	24
Swarm Technology in Motion	24
Masternodes and Decentralized Networks	24
Cybersecurity for Embedded Systems	24
Drone Laboratory	48
Total Hours	504



APPENDIX A 2

WORK PROCESS SCHEDULE

<i>Occupation(s)</i>	<i>O*Net Code</i>	<i>RAPIDS Code</i>
Commercial Drone Pilot	17-3024.00	0167

This schedule is attached to and a part of these Standards for the above identified occupation.

APPRENTICESHIP APPROACH

- Time-based Competency-based Hybrid

TERM OF APPRENTICESHIP

The term of the apprenticeship is 2 1/2 years with an OJL attainment of 5,580 hours, supplemented by the minimum required 304 hours of related instruction.

RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 Apprentice(s) to 1 Journeyworker(s).

APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate, which is: *\$10.50*

Months	Wages/Hour
0-12	\$9.00
12-24	\$9.50
24 -Completion	\$10.00

PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of 500 hours.

SELECTION PROCEDURES

Candidates will be selected through a screening process by individual participating employers that includes an application and group or individual interview. Candidates will be reviewed and selected based on qualifications related to the position. Employment decisions will be based on merit, regardless of race, color, creed, gender, religion, marital status, age, national origin or ancestry, physical or mental disability, medical condition, genetic information, gender identity,



APPENDIX A 2

sexual orientation, military status, or any other consideration made unlawful by federal, state, or local laws. All such discrimination is unlawful and prohibited.

The sponsor has adopted the following selection procedures, consistent with the requirements set forth in 29 CFR § 30.10(b):



APPENDIX A 2

ON THE JOB LEARNING		
(OJL)		
Commercial Drone Pilot	17-3024.00	0167

Work Process		
Targeted Quarter	Description	Hours
1st	<p>Simulations/Visual Observer – Apprentices will gain initial flight experience by utilizing ultra-realistic 3D technology to control unmanned vehicles in simulators using Unity, Unreal Engine, and, hardware-in-the loop systems to accurately emulate realistic flying conditions. The student will spend 4 weeks initially as a visual observer upon initial intake into the program. These students will learn how to properly scan and secure flight paths, organizational workflow, parts and accessories, while studying for the FAA Knowledge-exam. Upon a favorable recommendation form the instructor, the VO shall continue training as a person manipulating the controls.</p>	300
2nd	<p>Person Manipulating the Controls – Person-Manipulating-the Controls (PMC) of Multirotor/Fixed-winged Aircraft. The PMC will be assigned to a Remote Pilot in Command (PIC) of a multirotor/fixed-winged aircraft until meeting the requirements of 14 CFR Part 107, which require a pilot to hold the following:</p> <ul style="list-style-type: none"> • Certificates: Remote Pilot in Command with a Small UAS Rating • Flight Times: 700 hours total flight time as a PMC <p>500 Urban Hours 100 Rural Hours 100 Simulator Hours</p>	480
3rd	<p>Remote Pilot in Command – PIC of a Multirotor/Fixed winged/Land-based/Underwater Vehicles:</p> <ul style="list-style-type: none"> • Piloting unmanned multirotor/fixed-winged systems • Pre and post flight checks, checking weather forecasts, filling flight plans, and completing associated mission paperwork • Aerial Videography • Aerial Photography • Post Editing 	480
4th	<p>Aerial Mapping/Point Cloud – Apprentices will utilize powerful 3D imaging technology, such as the ZED Camera, to allow machines to not only actively map their spaces and surroundings, but also to learn how to adapt and purposefully navigate complex environments, whether self-driving cars, delivery drones, or package delivery rovers. Students will also utilize the technology for other uses, such as preservation, archeology, land-surveying, agriculture, arborists, and commercial/residential developers, by gaining experiential training in these areas, in accordance with student skill, focus, and professional background. Students also will work with point cloud technology, learning how to manage data acquisitions and analysis, while learning how to commercially apply such technology.</p>	480
5th	<p>Energy and Propulsion Systems – Students will work on creating practical augmented reality applications for industrial and commercial use cases for heightened efficiencies</p>	480



APPENDIX A 2

	and worker productivity within the organizations business model structure and future growth plans.	
6th	Renewable Energy Propulsion Technology/Underwater/Land-based Autonomous Systems/Capstone Project – Students will hands-on and practical experience utilizing either underwater or land-based autonomous systems, which are capable of navigating obstacles, delivering parcels, or performing any series of tasks designed to empower organizations to solve unique business and consumer problems through creative and innovative application of autonomous systems. Students will also present a Capstone Project of their choosing, due at the end of the 6 th Quarter. Students, however, will initially learn of, and have time to develop a Capstone Project over the course of the initial six quarters.	480
7th	Obstacle Avoidance Technology – Students will work closely with various automated aerial, ground-based, and/or aquatic systems, implementing localization algorithms, utilizing Lidar Technology, Laser scanning technology, stereo imaging, and Global positioning systems to navigate through rural, urban, and exotic settings.	480
8th	Thermal Imaging Technology – This hands-on course will take students on real-world jobs, whether roofing, preservation, insurance claims, or energy efficiency, to build their professional portfolio and scope of work. Further, students will learn about low-light imaging, infra-red technology, temperature detection, and heat sourcing. Additionally, students will learn how to provide quotes and write detailed thermal imaging reports for thermal imaging commercial applications.	480
9th	Artificial Intelligence – Students will learn what artificial intelligence is, how it is disrupting industries across disciplines, how it can and is being integrated into autonomous systems, as well as it's short-comings and gaps in technological capability. Also, students will learn how computer vision works by creating their own data sets, and artificial intelligence models, utilizing IBM's Watson and Nvidia's DIGITS for data processing and model creation. Students will also learn about machine learning, and how to advance the accuracy and robustness of A.I. models. Students will finally test and execute their final models in simulations, such as Gazebo and Microsoft's AirSim.	480
10th	Accelerated Computing – Students will learn about the differences and varieties of Graphical Processing Units versus Central Processing Units. Students will learn how to work with embedded supercomputers, such as the Nvidia Jetson TX2, in order to enhance the capabilities of autonomous systems (i.e., such as Commercial Drones, Rovers, and Submersibles), in areas related to or similarly relevant to the following: Computer Vision, Localization, Active 3D Mapping, Edge Detection, and Point Cloud-	480
11th	Internet-of-Things – Students will learn how to utilize the Linux software development language. Additionally, students will learn about the Ubuntu operating system, which is a platform for many software and hardware companies in robotics and accelerated computing, and which also is a dominant player in the IoT space. Furthermore, students will learn how to utilize the Raspberry Pi, as well as various sensors, actuators, and shields for the chipset.	480
12th	Swarms/Virtual Reality/Augmented Reality – Students will utilize Unreal Engine and AirSim, in order to create various 3D simulations and virtual worlds, where students will learn to place innumerable drones into realistic environments for the execution of various missions, such as Search and Rescue, enhanced 3D Mapping, and the creation of Nodes for Networking and Communications. Furthermore, students will also explore the most cutting-edge methods for tracking and controlling commercial drone swarms. Students will utilize powerful tools, such as Microsoft's Hololense, the HTC Vive, the Virb 360, and the HP Mixed Reality headset to explore the possibilities of utilizing	480



APPENDIX A 2

	virtual/augmented technology alongside autonomous systems, for enhanced integration capability, increased usability and commercialization potential.	
Total		5,580



APPENDIX A 2

RELATED INSTRUCTION OUTLINE		
(RTI)		
Commercial Drone Pilot	17-3024.00	0167

RTI provider **Infinite 8 Institute, L3C**
 Ean Mikale, J.D.
 Chief Innovation Officer
 950 S 10th Street
 Omaha, NE 68108
 (816) 777-9363
 ean@infinite8institute.com

RELATED TRAINING		Hours
1. Pilot-in-Command(PIC)/Person Manipulating the Controls (PMC) Multi-rotor General Purpose Curriculum		
1.1. Initial Aircraft Training		
1.1.1. Basic Indoctrination		30.5
1.1.2. Aircraft Ground		18.0
1.1.3. General Emergency		4.0
1.1.4. Special Segments		7.0
1.1.5. Aircraft Flight (12 hrs. in-house simulator)		12.0
1.1.6. Carriage of Hazardous Materials		3.5
1.1.7. Qualification		7.5
1.1. Upgrade Training		
1.2.1. Aircraft Ground		2.0
1.2.2. Special Segments		3.0
1.2.5. Qualification		2.0
1.3. Recurrent Aircraft Training		
1.3.1. Aircraft Ground		2.0
1.3.2. General Emergency		1.0
1.3.3. Special Segments		5.0
1.3.4. Aircraft Flight		5.5
1.3.5. Carriage of Hazardous Materials		1.0
1.3.6. Company Ground		3.0
1.3.7. Qualification		2.5
Subtotal		109.5
2. PIC/SIB Turboprop and SFAR		
2.1. Initial Aircraft Training		
2.1.1. Aircraft Ground		14.0
2.1.2. General Emergency		4.0



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2.1.3. Special Segments	7.0
2.1.4. Aircraft Flight	6.5
2.1.5. Qualification	3.0
2.2 Recurrent Aircraft Training	
2.2.1. Aircraft Ground	4.0
2.2.2. General Emergency	1.0
2.2.3. Special Segments	7.0
2.2.4. Aircraft Flight	1.5
2.2.5. Carriage of Hazardous Materials	1.0
2.2.6. Company Ground	3.0
2.2.7. Qualification	2.5
Subtotal	54.5
3. PIC/SIC Transport Curriculum	
3.1. Initial Aircraft Training	
3.1.1. Aircraft Ground	49.5
3.1.2. General Emergency	4.0
3.1.3. Special Segments	7.0
3.1.4. Aircraft Flight (1.5hrs in the field/12.5 hrs. in-sim)	14
3.1.5. Qualification	3.0
3.2. Recurrent Aircraft Training	
3.2.1. Aircraft Ground	12.0
3.2.2. General Emergency	1.0
3.2.3. Special Segments	5.0
3.2.4. Aircraft Flight	9.0
3.2.5. Carriage of Hazardous Materials	1.0
3.2.6. Company Ground	3.0
3.2.7. Qualification	3.0
3.3. Transport Category Upgrade to PIC	
3.3.1. Aircraft Ground	12.0
3.3.2. Special Segments	5.0
3.3.3. Aircraft Flight	9.0
3.3.4. Qualification/Airline Transport	3.0
Subtotal	140.5
GRAND TOTAL	304



EMPLOYER PARTICIPATION AGREEMENT

Commercial Drone Software Developer

Commercial Drone Pilot

Select all that apply

The undersigned employer hereby subscribes to the provisions of the Apprenticeship Standards formulated and registered by **Infinite 8 Institute** and agree(s) to carry out the intent and purpose of said Standards for selected occupation (s) and accompanying Appendices and to abide by the rules and decisions of the Sponsor established under these Apprenticeship Standards **Infinite 8 Institute**. has been furnished a copy of the Standards and has read and understood them, and request certification to train apprentices under the provisions of these Standards. On-the-job, the apprentice is hereby assured qualified training personnel and adequate supervision during the apprenticeship. The training should follow the approved Work Process Schedule and Related Instruction Outline including the rotation of tasks. The employer further agrees to follow the selection procedures per the approved Standards or develop alternative selection procedures in the Employer Acceptance Agreement that are consistent with the requirements set forth in 29 CFR § 30.10(b). This employer acceptance agreement will remain in effect until canceled voluntarily or revoked by the Sponsor, Employer or the Office of Apprenticeship.

Name of Company: _____

Federal Tax ID Number _____

(Print Name of Employer Representative)
Representative)

(Print Name of Sponsor

Signature: _____

(On Behalf of Employer)

Signature: _____

(On Behalf of Sponsor)

Date: _____

Date: _____

Address: _____

City/State/Zip Code: _____

Phone Number: _____ Email: _____

Mentor Wage(s) _____

Total Workforce: _____

Female _____

Minority _____

Total Mentor Workers Employed: _____

Female _____

Minority _____

Apprentices Will / Apprentices Will Not be paid for hours spent attending class

cc: Registration Agency