Registered Apprenticeship Standards

☐ National Program Standards ☐ National Guidelines for Apprenticeship Standards

☒ Local Apprenticeship Standards

Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School

2751 East San Miguel St Suite #101
Colorado Springs, CO 80909
(816) 777-9363

Occupations: To all Applicable Occupations within the Standard

O*NET-SOC Codes: See Appendix A   **RAPIDS Codes:** See Appendix A

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

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

Registered By: **CYNTHIA S. MCLAIN**

(For Government Use Only)

Signature: *Cynthia S. McLain*
(Sign here for National or Local Apprenticeship Standards)

Title: OA State Director
 U. S. DOL/Office of Apprenticeship _____

Date: September 16, 2021   ☐ Check here if these are revised standards

Registration Number: 2021-CO-94035

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SECTION I – STANDARDS OF APPRENTICESHIP 29 CFR § 29.5

A. **Responsibilities of the sponsor:** <u>Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School</u> must conduct, operate, and administer this program in accordance with all applicable provisions of Title 29 Code of Federal Regulations (CFR) part 29, subpart A and part 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:

- Ensure adequate and safe equipment and facilities for training and supervision and provide safety training for apprentices on-the-job and in related instruction.
- Ensure there are qualified training personnel and adequate supervision on the job.
- 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 29 CFR § 29.7. Form ETA 671 may be used for this purpose and is available upon logging into RAPIDS.
- Register all apprenticeship standards with the U.S. Department of Labor, including local variations, if applicable.
- Submit apprenticeship agreements within 45 days of enrollment of apprentices.
- Arrange for periodic evaluation of apprentices' progress in skills and technical knowledge, and maintain appropriate progress records.
- Notify the U.S. Department of Labor within 45 days of all suspensions for any reason, reinstatements, extensions, transfers, completions and cancellations with explanation of causes. Notification may be made in RAPIDS or using the contact information in Section K.
- Provide each apprentice with a copy of these standards, Requirements for Apprenticeship Sponsors Reference Guide, and Appendix A, any applicable written rules and polices, 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 and Appendices and obtain another acknowledgment of their receipt from each apprentice.

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

An apprentice must be at least <u>16</u> years of age, except where a higher age is required by law, and must be employed by a participating employer to learn the apprenticeable occupation. Additional qualification requirements include:

There is an educational requirement of
- <u>Youth applicants must have completed at least the Sophomore year of High School. Youth applicants must remain in high school and demonstrate progress towards graduation with at least a 2.5 GPA or better to remain in the apprenticeship program. Youth applicants must provide an official transcript(s) for high school and any post-high school education.</u>
- <u>Adult applicants must have and be able to provide documentation of a high school diploma, General Educational Development (GED) equivalency or other high school equivalency credential.</u>
- <u>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.</u>

There is a physical requirement of <u>being physically capable of performing the essential functions of the apprenticeship program, with or without a reasonable accommodation, and without posing a direct threat to the health and safety of the individual or others.</u>

<u>Participating employers may require a drug screen post selection/pre-employment.</u>

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

The apprenticeship program has selected apprenticeship training approach. See Appendix A for the Apprenticeship Approach and Term.

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 will not be paid for hours spent attending related instruction classes. See Appendix A for Work Process Schedule and Related Instruction Outline.

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. <u>Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School</u> 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. See Appendix A for the Probationary period.

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. See Appendix A for the Ratio of Apprentices to Journeyworkers.

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. See Appendix A for the Apprentice Wage Schedule.

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, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School 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, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School 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), 30.4-30.9

Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School acknowledges that it will adopt an affirmative action plan in accordance with 29 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

Telephone Number: (202) 693-2796

Email Address: ApprenticeshipEEOcomplaints@dol.gov

Point of Contact: Director, 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:

Name: Ean Mikale, J.D.
Address: 2751 East San Miguel St Suite #101 Colorado Springs, CO 80909
Telephone Number: (816) 777-9363
Email Address: 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:

Name: Patrina Walker
Address: 721 19th St Denver CO 80202
Telephone Number: (303) 844-6362
Email Address: walker.patrina.n@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.

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 - 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 IV - SIGNATURES

OFFICIAL ADOPTION OF APPRENTICESHIP STANDARDS

The undersigned sponsor hereby subscribes to the provisions of the foregoing Apprenticeship Standards formulated and registered by <u>Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics the Drone School</u>, on this ___15th___ day of <u>September 2021.</u>

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.

_____   _____
Signature of Sponsor (designee)   *Signature of Sponsor (designee)*

Ean Mikale, J.D.

_____   _____
Printed Name   *Printed Name*

SECTION V - DISCLOSURE AGREEMENT *(Optional)*

I, _____ Ean Mikale, J.D. _____ *(Sponsor Representative)*, acting on behalf of <u>Infinite 8 Institute, L3C</u> _____ *(Sponsor)* authorize OA to share the Work Process Schedule and Related Instruction Outline in Appendix A with other potential apprenticeship sponsors.

_____   09/15/2021
_____
Signature   *Date*

Ean Mikale, J.D.

_____
Printed Name

Appendix A

Commercial Drone Pilot

WORK PROCESS SCHEDULE

AND

RELATED INSTRUCTION OUTLINE

Appendix A

WORK PROCESS SCHEDULE

Commercial Drone Pilot
O*NET-SOC CODE: 17-3024.00   RAPIDS CODE: 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 3 years with an OJL attainment of 5580 hours, supplemented by the minimum required 305 hours of related instruction.

RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 Apprentice to 1 Journeyworker on the jobsite.

APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a dollar amount of the current hourly journeyworker wage rate, which is: $16.87.

Period of Apprenticeship	Requirements for advancement	Wage Rate
1st Start of Apprenticeship	Completion of 2000 OJL hours	$15.87/hour
2nd	Completion of 3580 OJL hours	$16.37/hour
3rd At completion	Completion of 5580 OJL hours and 305 RI hours	$16.87/hour

PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of 1000 OJL hours or one year, whichever is shorter.

SELECTION PROCEDURES

1. Applicants will complete an application for the apprenticeship opportunity.
2. Applications will be reviewed to ensure minimum qualifications have been met.
3. Once a list of qualified applicants is developed, the sponsor will interview each applicant and forward appropriate applications to participating employers.
4. The Human Resources Manager, the Department Manager, or equivalent role with each participating employer will make the final selection.

WORK PROCESS SCHEDULE
Commercial Drone Pilot

O*NET-SOC CODE: 17-3024.00   RAPIDS CODE: 0167

On the Job Learning Outline

Work Process		
Targeted Quarter	**Description**	**Hours**
1st	**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.	**300**
2nd	**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: • Certificates: Remote Pilot in Command with a Small UAS Rating • Flight Times: 700 hours total flight time as a PMC 500 Urban Hours 100 Rural Hours 100 Simulator Hours	**480**
3rd	**Remote Pilot in Command –** PIC of a Multirotor/Fixed winged/Land-based/UnderwaterVehicles: 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	**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, andprofessional 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.	**480**
5th	**Energy and Propulsion Systems –** Students will work on creating practical augmentedreality applications for industrial and commercial use cases for	**480**

	heightened efficiencies and worker productivity within the organizations business model structure and futuregrowth plans.	
6th	**Renewable Energy Propulsion Technology/Underwater/Land-based AutonomousSystems/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, dueat the end of the 6th 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 theirprofessional 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 howto advance the accuracy and robustness of A.I. models. Students will finally test and execute their final models in simulations, such as Gazeebo 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 towork with embedded supercomputers, such as the Nvidia Jetson TX2, in order to enhancethe 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 isa platform for many software and hardware companies in robotics and accelerated computing, and which also is a dominant player in the IoT space. Furthermore, studentswill 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 andAirSim, in order to create various 3D simulations and virtual worlds, where students willlearn to place innumerable drones into realistic environments for the execution of variousmissions, 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	480

| | tools, such as Microsoft's Hololense, the HTC Vive, the Virb 360, and the HP Mixed Reality headset to explore the possibilities of utilizing virtual/augmented technology alongside autonomous systems, for enhanced integrationcapability, increased usability and commercialization potential. | |

TOTAL MINIMUM HOURS   5580

RELATED INSTRUCTION OUTLINE
Commercial Drone Pilot

O*NET-SOC CODE: 17-3024.00   RAPIDS CODE: 0167

Related instruction - This instruction shall include, but not be limited to:

Vendor of RI Curriculum: Infinite 8 Institute, L3C
Address: 950 S. 10th Street, Omaha, NE 68109
Phone Number: (816) 777-9363
RI Point of Contact: Ean Mikale, J.D.
Email Address: ean@infinite8institute.com

Instruction shall include, but not be limited to:

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
1.2. 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
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	5.5
3.3.3. Aircraft Flight	9.0
3.3.4. Qualification/Airline Transport	3.0
Subtotal	**141**
Grand Total RI Hours	**305**

Appendix A

Commercial Drone Software Developer

WORK PROCESS SCHEDULE

AND

RELATED INSTRUCTION OUTLINE

Appendix A

WORK PROCESS SCHEDULE

Commercial Drone Software Developer
O*NET-SOC CODE: 15-1252.00   RAPIDS CODE: 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 2 years with an OJL attainment of 3360 hours, supplemented by the minimum required 504 hours of related instruction.

RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 Apprentice to 1 Journeyworker on the jobsite.

APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a dollar amount of the current hourly journeyworker wage rate, which is: $16.87.

Period of Apprenticeship	Requirements for advancement	Wage Rate
1st Start of Apprenticeship	Completion of 2000 OJL hours	$15.87/hour
2nd	Completion of 1360 OJL hours	$16.37/hour
3rd At Completion	Completion of 3360 OJL hours And 504 hours of RI	$16.87/hour

PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of 1000 OJL hours or one year, whichever is shorter.

SELECTION PROCEDURES

1. Applicants will complete an application for the apprenticeship opportunity.
2. Applications will be reviewed to ensure minimum qualifications have been met.
3. Once a list of qualified applicants is developed, the sponsor will interview each applicant and forward appropriate applications to participating employers.
4. The Human Resources Manager, the Department Manager, or equivalent role with each participating employer will make the final selection.

WORK PROCESS SCHEDULE
Commercial Drone Software Developer

O*NET-SOC CODE: 15-1252.00   RAPIDS CODE: 2072

On the Job Learning Outline

TARGETED QUARTERS	DESCRIPTION	HOURS
1st	**Drone Computer Languages** – Students are to learn thefundamentals 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 patternrecognition 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 andsupply 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**
4th	**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**

5th	**Localization Laboratory** – Students will become exposed to various types of propulsion systems for aquatic, amphibious, land, air, low-orbit, and space basedautonomous systems. Specifically, students will focus ona common thread in each module, concerning an emphasis on sensory localization in dynamic environments.	**480**
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 MINIMUM HOURS 3360

RELATED INSTRUCTION OUTLINE
Commercial Drone Software Developer

O*NET-SOC CODE: 15-1252.00   RAPIDS CODE: 2072

Related instruction - This instruction shall include, but not be limited to:

Vendor of RI Curriculum: Infinite 8 Institute, L3C
Address: 950 S. 10th Street, Omaha, NE 68109
Phone Number: (816) 777-9363
RI Point of Contact: Ean Mikale, J.D.
Email Address: ean@infinite8institute.com

Instruction shall include, but not be limited to:

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 MINIMUM HOURS 504

Appendix D

EMPLOYER ACCEPTANCE AGREEMENT

ADOPTED BY

**Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc.
DBA Infinite 8 Aeronautics The Drone School**

**DEVELOPED IN COOPERATION WITH THE
U. S. DEPARTMENT OF LABOR
OFFICE OF APPRENTICESHIP**

EMPLOYER ACCEPTANCE AGREEMENT

The undersigned employer hereby subscribes to the provisions of the Apprenticeship Standards formulated and registered by the Infinite 8 Institute, L3C DBA Infinite 8 Institute, Inc. DBA Infinite 8 Aeronautics The Drone School and agree(s) to carry out the intent and purpose of said Standards for Commercial Drone Pilot and Commercial Drone Software Developer and accompanying Appendices and to abide by the rules and decisions of the Sponsor established under these Apprenticeship Standards. *Insert Employer Name* have been furnished a copy of the Standards and have 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.

(Manual signatures required)

_____   _____
(Print Name of Employer Representative)   *(Print Name of Sponsor Representative)*

Signed: _____   **Signed:** _____
(On Behalf of Employer)   *(On Behalf of Sponsor)*

Date: _____   **Date:** _____

Employer Title: _____

Name of Company: _____

Address: _____

City/State/Zip Code: _____

Phone Number:_____

Fax: _____

Email:_____

cc: Registration Agency