# SpaceTEC Partners, Inc.















# **Certification Products**









SPACETEC PARTNERS, INC (321) 567-5193 SPACETEC.US

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# **About SPI**







#### History

Founded as a National Science Foundation Advanced Technological Education Center supporting aerospace technological education in 2002, SpaceTEC has invested more than \$10M in grant funding over the past 15 years building a robust aerospace, aviation and advanced manufacturing education and technician credentialing resource.

SpaceTEC Partners, Inc. (SPI), formed in 2009 to manage activities directly or indirectly related to aerospace technician credentialing, was formally recognized as a 501c3 educational non-profit corporation by the US Internal Revenue Service in 2016.

Under the auspices of FAA Office of Commercial Space, SPI's SpaceTEC programs support the nation's space industry with curriculum and coursework development and administration of performance-based certifications for technicians engaged in space vehicle manufacturing, integration, launch and recovery and operations.

Cert*TEC* was established in 2010 to provide credentials assessing relevant skills and competencies desired in prospective employees throughout aviation, aerospace and related industries nationwide.

Credential Testing Services (CTS) was established in 2016 to provide accredited written only (knowledge) examinations for technician certification and third-party computer-based testing services for an array of educational and industry organizations.

SPI programs support commercial space, aviation manufacturing, maintenance and operations, the military and many advanced manufacturing technology education centers across the country with program outcome, skills validation and internationally accredited certifications.

#### Accreditation

SPI's programs provide industry-driven, nationally recognized credentials reflecting competencies employers demand for aerospace technicians seeking employment in the aerospace and aviation industries. SPI's certification process is accredited by the International Certification Accreditation Council (ICAC). ICAC is an alliance of organizations dedicated to assuring competency, professional management, and service to the public by encouraging and setting standards for licensing, certification, and credentialing programs.







#### **SPI Examination Process**

- All computer-based knowledge exams have 70—150 questions, selected from SPI's examination question banks.
- For performance-based exams, an oral exam on any topics scored less than 70% on the written exam is required. Minimum of 5 of 7 questions from each topic must be answered correctly (70%).
- Practical "hands-on" exercise for each exam topic are performed using a Student Reference Manual with task instructions. Each is scored using a standardized rubric with 70% on each exercise required to pass.

#### Standardized Practical Testing

- Practical testing is administered using common processes, tools, and materials.
- If exam materials are not available at testing sites, exam kits can be sent to testing locations.
- Kits are pre-staged at many locations across the country.

#### **Examination Delivery**

- Testing is through SPI's cloud-based Examination Management System (EMS).
- Test takers register online; payment can be made through Square, PayPal, an invoicing system or pre-paid voucher system can also be arranged.
- All examinations are proctored and test takers receive immediate feedback upon completion.
- Test proctors and practical examiners can also receive blind Coaching Reports with topic scores to improve learning content or to select appropriate practical tasks.

#### Proctoring

- Proctor relationships are established through an SPI Proctor Agreement.
- A Proctor Guide is provided and a Proctor orientation teleconference on test requirements can also be scheduled.
- Remote Proctoring is also available for online exams.







#### **Certified Testing Centers**

- Industry-driven technician performance standards translate to higher levels of productivity, safety, and dependability.
- SPI examinations provide professional development opportunities and recognition for technicians through nationally recognized certifications.
- SPI Testing Center approval allows training sites to conduct examination testing at their location.
- Training Provider approval based on a review of education and training programs is also available, thereby ensuring industry standards are met.

#### STE/CTE Examiners

- Candidates wishing to become SpaceTEC or CertTEC Examiners must first pass the certification examinations.
- They must then complete an application form and undergo Examiner training.
- Once accepted, Examiners are issued configuration-controlled Examiner manuals.
- A series of exams are conducted under the supervision of an experienced Examiner.
- Recurrent training is required if Examiners have not conducted exams in the preceding year.



#### **Credential Testing Services**

- A division of SPI, Credential Testing Services (CTS), offers computer-based examination administration for a variety of professional applications.
- CTS is powered by Questionmark, SPI's cloud-based, scalable Assessment Management System.
- CTS provides ASTM/NCATT, SAE PRI, and PMA knowledge-based certifications, third party end-of-course testing, and instructor professional development.





#### **ASTM International**

- Development and administration of all ASTM/NCATT credentials is managed by SpaceTEC Partners, Inc.
- In 2014, ASTM International absorbed NCATT, the National Center for Aerospace and Transportation Technologies "to provide non-regulatory, industry-recognized personnel certifications for aviation and aerospace technicians".
- In 2017, ASTM International entered into a contractual agreement with SPI and its Credential Testing Services division "to work jointly to help certify aircraft maintenance technicians and other aerospace workers".
- Under the agreement, SPI will manage all ASTM NCATT written exams. Separately, SPI will continue to offer its own job-oriented, practical performance-based certification examinations.
- Additionally, SPI is transitioning all its certification standards to ASTM International for inclusion in their Consensus Standards process.



# SpaceTEC Certification Products



#### Certified Aerospace Technician® Certifications 1

The SpaceTEC Certified Aerospace Technician examination process offers certification in two categories:

- 1. A Core certification for entry-level employees covering general knowledge in six areas: Introduction to Aerospace, Applied Mechanics, Basic Electricity, Test & Measurements, Materials and Processes, and Aerospace Safety; and
- 2. Endorsements for advanced standing in one of the following three areas: Aerospace Vehicle Processing; Aerospace Manufacturing; Aerospace Composites.

#### Qualifications:

Applicants must meet at least one of the following verifiable criteria to sit for the exam:

- 1. Have a 2 year technical college program degree
- 2. Have/had a two year technical military assignment
- 3. Hold a FAA Airframe/Powerplant certificate
- 4. Two or more years of on the job training and experience in the Aerospace industry
- 5. Endorsements require a Core certification

#### Core Certification

The Core exam is a three part exam consisting of a 70 question, computer-based written exam, followed by an oral and practical evaluation of an individual's technical knowledge and skills. The certification includes an optional Prep Course, pre-test, and the three part exam (Written, Oral, and Practical)

#### **Exam Information**

Price: \$625 ea.

Certification Term: 3 Year Hands-On Required: Yes



#### **Certified Aerospace Technician Endorsements**

- Composites
- Vehicle (Spacecraft) Processing

#### **Exam Information**

Price: \$550 ea.
Certification Term: 3 Year
Hands-On Required: Yes





#### Aerospace Coatings Application Specialist (ACAS)

#### SPI has partnered with experts in the field of Aerospace Coatings Application to develop a certification program for aircraft paint personnel conforming to SAE specification AS7489. Proper application of aerospace coatings is vital to prevent corrosion and cracking. Applying these

 Training providers conduct training based on the AS7489 Body of Knowledge and individuals are able to validate their skills through a network of certifying agencies.

and manual skill.

coatings requires a high level of proficiency

#### **Exam Information**

Aerospace Coating Application Specialist - Phase 1

Hands-On Required: No
Questions on Exam: 50
Passing Score: 84%
Time Limit: 60 min.
Price: \$225

Phases 2 through 5 are in development

Hands-On Required: Yes
Questions on Exam: TBD
Passing Score: TBD
Time Limit: TBD
Price: TBD





#### **Aviation Structures**

The Aviation Structures certification is a comprehensive assessment of technician skills and knowledge focused on structures knowledge, fabrication methods, health and safety, inspection and repair, and regulations and documentation.

#### **Exam Information**

Price: \$450 Certification Term: 3 Years Hands-On Required: Yes



#### Aviation Structures Level 2

- The Aviation Structures Level 2 certification demonstrates advanced skills in all facets of aircraft sheet metal and structures repairs, including interpreting technical manuals, engineering drawings, blueprints and schematics; planning, lay-out, fabrication and installation of modifications; conducting inspections, performing corrosion repairs; and assembly and installation of replacement parts to include final operational checks.
- Qualification: 3 years minimum documented experience in aircraft sheet metal and structures fabrication, repair, maintenance, and modification.

#### **Exam Information**

Price: \$550 Certification Term: 3 Years Hands-On Required: Yes







#### **Aviation Basics**

- Aviation Basics certification demonstrates the foundational skills applicable to entry-level positions in aviation/aerospace maintenance and manufacturing operations.
- Applicants are required to complete an 8-week training program to qualify for the written exam. A practical examination to demonstrate mastery of the skills as directed by a qualified CertTEC examiner is also required. Topics include Safety and Tool Usage, Human Factors, Regulations & Record-keeping, Technical Data, Flight Control Systems, Materials and Hardware, Sheetmetal, Electrical and other related subjects.
- The Aviation Basics certification is designed for those with minimal or no experience in aviation, aerospace, or manufacturing fields.

#### Exam Information

Price: \$225 Hands-On Required: Yes







#### **Basic Composites**

- The Basic Composites certification is a comprehensive assessment of technician skills and knowledge focused on composite history, fiber reinforcements, matrix systems, and processes related to basic composite fabrication, inspection, damage assessment and repair using methods common to industry.
- Applicants will be required to complete a written examination and demonstrate the ability to properly apply composites construction techniques using appropriate materials and tooling to produce composite components, perform material evaluation techniques, and perform composite repairs as directed by a qualified CertTEC examiner.

#### **Exam Information**

Price: \$450 Certification Term: 3 Years Hands-On Required: Yes



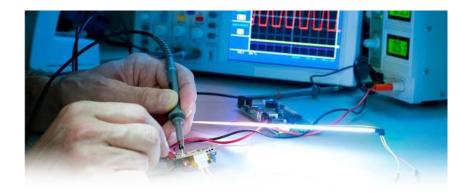


#### Basic Electricity and Electronics (BEE) 2

- The Basic Electricity and Electronics (BEE) certification challenges the candidate to demonstrate their skills and knowledge in measuring, analyzing, and troubleshooting basic DC, AC, Analog and Digital electronic circuits.
- The candidates are presented live electronic circuits that emulate circuits found in industrial applications. Each circuit is capable of providing numerous scenarios, signal levels, and faulted conditions.
- Successful candidates correctly measure electronic parameters at various test points, follow normal circuit signal flow, and identify faults as they are presented in the circuit.
- Each discipline utilizes 2 assessment circuit cards. A trainer base unit, common to all the assessment circuit cards, provides power, circuit protection, and non-destructive faulting to the circuit cards.
- The BEE consists of 4 individual certifications focusing on basic electricity and electronics fundamentals in the following four subject areas: DC, AC, Analog, and Digital.

#### **Exam Information**

Price: \$100
Certification Term: 3 Years
Hands-On Required: Yes
Questions on Exam: 50
Passing Score: 70%
Time Limit: 60 min





#### Advanced Electricity and Electronics (AEE) 3

- The Advanced Electricity and Electronics (AEE) certification challenges the candidate to demonstrate their skills and knowledge in measuring, analyzing, and troubleshooting complex DC, AC, Analog and Digital electronic circuits.
- The candidates are presented live electronic circuits that emulate circuits found in industrial applications. Each circuit is capable of providing numerous scenarios, signal levels, and fault conditions.
- Successful candidates correctly measure electronic parameters at various test points, follow normal circuit signal flow, and identify faults as they are presented in the circuit.
- Each discipline utilizes three assessment circuit cards that offer progressively more complex circuits as the candidate progresses from the beginning of the assessment to the end.
- A trainer base unit, common to all the assessment circuit cards, provides power, circuit protection, and non-destructive faulting to the circuit cards.
- The AEE consists of 4 individual certifications focusing on advanced electricity and electronics concepts in the following four subject areas: DC, AC, Analog, and Digital.

#### **Exam Information**

Price: \$150
Certification Term: 3 Year
Hands-On Required: Yes
Questions on Exam: 50
Passing Score: 70%
Time Limit: 90 min



# Credential Testing Services Certification Products





Nida Corporation Avionics Computer-Based Training 4	Exam Information	
• Basic Electricity for Avionics—AV1 CBT Exam	Price:	\$75
◆ Basic Electronics for Avionics—AV2 CBT Exam	Price:	\$75
<ul> <li>Analog for Avionics—AV3 CBT Exam</li> </ul>	Price:	\$75
<ul> <li>Digital for Avionics—AV4 CBT Exam</li> </ul>	Price:	\$75



#### Applied Skills Inventory (ASI)

**Exam Information** 

Employers need to ensure employees they hire have the right knowledge and skills to hit the ground running.

Price: \$29.99

- SPI Applied Skills Inventories can help to:
  - 1) Identify whether new or temporary recruits have the right skills
  - 2) Identify whether they need gap training
- SPI's Applied Skills Inventories are fully customizable and can be adapted for individuals, companies or specialized groups as needed.
- Derived from the SPI certification programs, ASIs are 60minute, 70-question surveys that provide a summary of technical knowledge for shops, labs, and related operations in many industries.





#### PMA Metalforming Technician

PMA Metalforming Technician certification provides applicants access to entry-level jobs such as Machine Operator, Press Operator, Grinder Trainee, Assembler, and General Laborer. The job skills demonstrated through the certification can also be leveraged into living wage careers as machine programmers, welders, robotics technicians, and machine repair and maintenance technicians.

- To qualify, applicants complete 3 weeks of training through PMA's Metalform EDU to learn a combination of industry knowledge, technical skills, and career-readiness skills.
- Topics include Math, Measurement, Quality, Safety, Manufacturing Processes, Technology and Information, Blueprint Reading and Workplace Readiness.

#### **Exam Information**

Member Price: \$99

Non-Member Price: \$299

Questions on Exam: 131

Passing Score: 65%

Time Limit: 120 min



## **ASTM Certification Products**





#### Health and Safety in Nanotechnology

- The Health and Safety in Nanotechnology certificate is the first in a series of industryendorsed stackable credentials validating the basic skill sets for the nanotechnology workforce. The certificate is based on ASTM E2996 – Standard Guide for Workforce Education in Nanotechnology Health and Safety.
- This certificate provides employers with a basis for evaluating knowledge and qualifications of current and future employees, thereby allowing certificate holders to differentiate themselves from others in their profession and to advance their careers.

#### **Exam Information**

Price: \$65
Hands-On Required: No
Questions on Exam: 50
Passing Score: 65%
Time Limit: 1 hour

#### Nanotechnology Workforce Characterization

- Nanotechnology Workforce Characterization certificate is the second in a series of industryendorsed stackable credentials validating the basic skill sets for the nanotechnology workforce. The certificate is based on ASTM 3001 Standard Practice for Workforce Education in Nanotechnology Characterization.
- This certificate provides employers with a basis for evaluating knowledge and qualifications of current and future employees, thereby allowing certificate holders to differentiate themselves from others in their profession and to advance their careers.

#### **Exam Information**

Price: \$65
Hands-On Required: No
Questions on Exam: 50
Passing Score: 60%
Time Limit: 1 hour

# **ASTM Certification Products**





#### Workforce Certificate for Nanotechnology Workforce Fabrication and Related Infrastructure

- The Nanotechnology Fabrication and Related Infrastructure certificate is the third in a series of industry-endorsed stackable credentials validating the basic skills for the nanotechnology work
  - force. The certificate is based on three ASTM education standards. ASTM E3034 Standard Guide for Workforce Education in Nanotechnology Pattern Generation, ASTM E3059 Standard Guide for Workforce Education in Nanotechnology Infrastructure and ASTM E3071 Standard Guide for Nanotechnology Workforce Education in Materials Synthesis and Processing
- This certificate provides employers with a basis for evaluating knowledge and qualifications of current and future employees, thereby allowing certificate holders to differentiate themselves from others in their profession and to advance their careers.

#### **Exam Information**

Price: \$65
Hands-On Required: No
Questions on Exam: 50
Passing Score: 60%
Time Limit: 1 hour

# **ASTM NCATT Certification Products**







Aircraft Electronics Technician (AET) 5

**Exam Information** 

Price: \$175
Certification Term: 5 Years
Hands-On Required: No
Questions on Exam: 90
Passing Score: 73%
Time Limit: 2 hours

**AET Endorsements** 

 Aircraft Electronics Installation (AEIT)

Autonomous Navigation Systems (ANS)

Dependent Navigation Systems (DNS)

 Onboard Communication & Safety Systems (OCS)

 Radio Communication Systems (RCS) Exam Information

Price: \$150
Certification Term: 5 Years
Hands-On Required: No
Questions on Exam: 106
Passing Score: 70%
Time Limit: 2 hours

Price: \$150 each
Certification Term: 5 Years
Hands-On Required: No
Questions on Exam: 50
Passing Score: 70%
Time Limit: 1 hour

Note: Candidate must first pass the AET to become eligible to sit for one of the AET endorsements

# Foreign Object Elimination (FOE) Price: \$175 Certification Term: 5 Years Hands-On Required: No Questions on Exam: 80 Passing Score: 83% Time Limit: 2 hours

# **ASTM NCATT Certification Products**







#### Aerospace Aircraft Assembly (AAA)

#### **Exam Information**

Price: \$175
Certification Term: 5 Years
Hands-On Required: No
Questions on Exam: 100
Passing Score: 70%
Time Limit: 2 hours

#### Unmanned Aircraft System Maintenance (UAS)

#### **Exam Information**

Price: \$225
Certification Term: 5 Years
Hands-On Required: No
Questions on Exam: 150
Passing Score: 70%
Time Limit: 3 hours

#### **Business Aviation Cabin Crew**

#### **Exam Information**

◆ The Business Aviation Cabin Crew certification challenges the candidate to demonstrate their knowledge of and skills in aircraft safety procedures, as well as professionalism, discretion and cabin service safety that exceeds regulatory requirements, for ensuring the comfort and safety of both domestic and international passengers. Price: \$175
Certification Term: 5 Years
Hands-On Required: No
Questions on Exam: 170
Passing Score: 78%
Time Limit: 4 hours







# Aircraft Electronics Technician (AET) Practical Skills Certificate <sup>6</sup>

- The CertTEC AET Practical Skills Certificate is the only Avionics practical skills assessment available that meets ASTM International's F3245-19 Standard Guide for Aircraft Electronics Technician standard practical skills requirements. The assessment is also closely aligned with the European Aviation Safety Agency's (EASA) Part-66 B2 practical testing requirements.
- The CertTEC AET Practical Skills Certificate challenges the candidate to demonstrate their skills and knowledge in measuring, analyzing, and troubleshooting Avionics systems and equipment.
- The CertTEC Avionics performance assessment is segmented into four distinct sections; 1) DC and AC Electricity, 2) A/D and D/A Conversion, 3) Connector Troubleshooting and 4) Aircraft Systems. The four sections must be challenged all at one time.

#### **Exam Information**

Price: \$175 Hands-On Required: Yes Passing Score: 70% Time Limit: 4 hours









Aircraft Electrician—Electrical Wiring Interconnection System (AE-EWIS) Technician Practical Skills Certificate 7

- ◆ The CertTEC AE-EWIS Practical Skills Certificate meets ASTM International's F3245-19 Standard Guide for Aircraft Electronics Technician standard practical skills requirements and is closely aligned with the European Aviation Safety Agency's (EASA) Part-66 B2 practical testing requirements.
- CertTEC AE-EWIS challenges technicians to demonstrate the ability to interpret engineering drawing symbols, flags, and general notes, use standard tools and equipment to build an aircraft electrical system, and test for conformance to specifications by ensuring signal flow throughout the system.
- CertTEC AE-EWIS also challenges technicians to demonstrate the ability to assemble wire harnesses by cutting, stripping and insulating wire with heat shrink tubing; attaching wires to fixtures and accessories such as circuit breakers, switches and terminal strips; crimping pins, soldering sockets and turrets; routing harnesses properly and mating connectors.

#### **Exam Information**

Price: \$275 Hands-On Required: Yes Passing Score: 70% Time Limit: 4 hours



# SPI Product Hardware

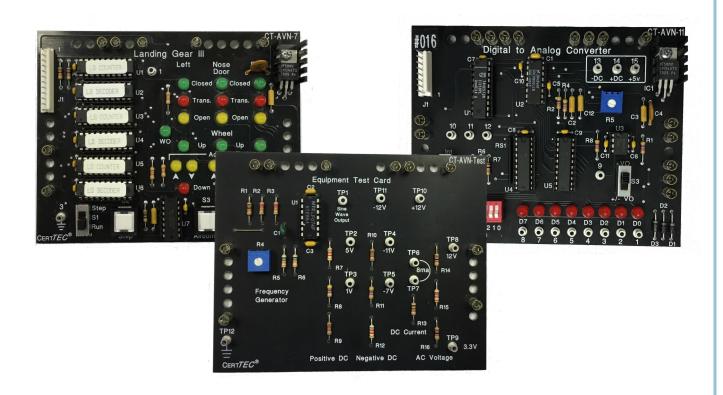




Cert TEC BEE exam circuit card set \$999 Cert TEC AEE exam circuit card set \$1,299 Cert TEC BEE upgrade to AEE circuit card set \$200

Note: Contact SpaceTEC Partners, Inc. to learn about Combo pricing.

Cert TEC Avionics exam circuit card set \$1,299 Aviation Electrician—EWIS circuit card set \$699 Aviation Electrician—EWIS materials kit \$75



# **SPI Certification Product References**





- <sup>1</sup> Requires Nida Corp. Student Trainer (available separately from Nida Corp.)
- <sup>2</sup> Requires Nida Corp. Student Trainer (available separately from Nida Corp.) and Cert*TEC* BEE circuit card set
- <sup>3</sup> Requires Nida Corp. Student Trainer (available separately from Nida Corp.) and Cert*TEC* AEE circuit card set.
  - If a location has BEE circuit cards and is interested in upgrading to AEE, see AEE upgraded circuit card set price on previous page.
- <sup>4</sup> Avionics CBT Written Exam Modules: Electrical, Electronics, Digital Techniques, Materials and Hardware, Maintenance Practices, Avionics Systems, and Engine Instrumentation (requires Nida Corp. Student Trainer and student license, sold separately).
- <sup>5</sup> Based on ASTM International F3245.19 Aircraft Electronics Technician Personnel Certification Standard
- <sup>6</sup> Requires Cert*TEC* Avionics exam circuit card set
- <sup>7</sup> Requires Cert*TEC* Aircraft Electrician—EWIS (AE-EWIS) circuit card set and materials kit (materials kit sold separately).



