



Solidworks Associate (CSWA)-Academic Certification Guidelines

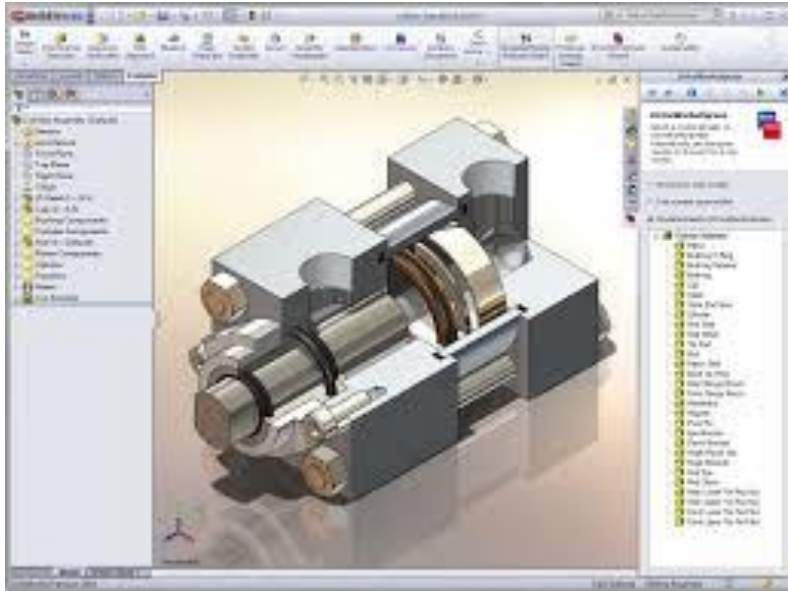
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**What is the Solidworks
Associate (CSWA)
Certification?**

Solidworks Associate (CSWA) Certification



- The [Solidworks](#) Associate exam (CSWA) is the perfect starting point that allows students to showcase 3D modeling, design concepts, and sustainable design skills to employers.
- Solidworks is an great example of how certification can distinguish a standout designer from the rest of the crowd.

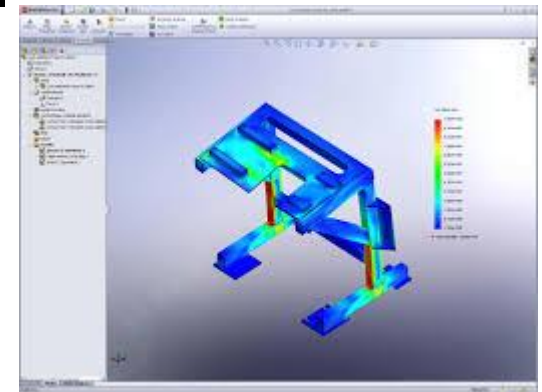
Solidworks Associate (CWSA) Certification

- The Solidworks Associate (CWSA) certification is industry valued and recognized leading to high quality employability that translates into job opportunities above entry level positions.
- Currently, Solidworks is the most widely used CAD software in the world.



Solidworks Associate (CWSA) Certification

- Solidworks allows designers to produce 3D rendering of their designs.
- Solidworks can also be used to design electrical circuits or pipe placements.
- The most unique aspect of Solidworks is that it provides animation capability, so the student can see the design as it would operate in real-world situations.



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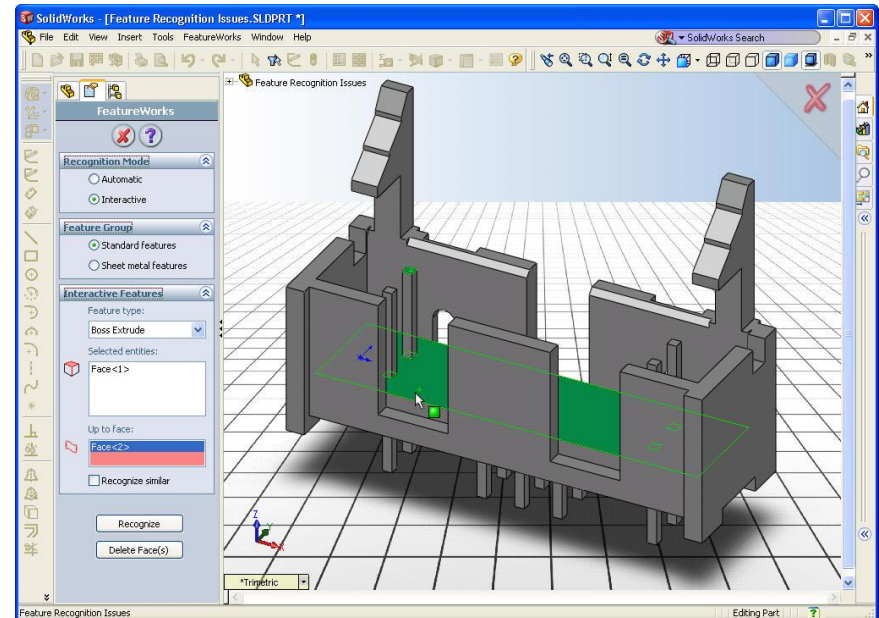
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**Alignment to
Occupations**

Job Alignment

- Solidworks is a CAD program that is used by many large and independent companies specializing in designing products.
- The Solidworks Associate (CSWA) Certification aligns directly to different job titles including, but not limited to:
 - 17-3013.00 – Mechanical Drafters
 - 17-3023.01 – Electronics Engineering Technicians
 - 17-2141.00 – Mechanical Engineers



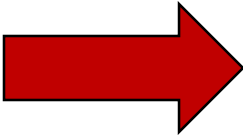
Job Duties

- The Solidworks Associate (CWSA) certification aligns to different occupations requiring computer aided design skills; more specifically, it aligns to the **Mechanical Drafter 17-3013.00** occupation.
- **Mechanical Drafters** are able to:
 - Develop detailed design drawings and specifications for mechanical equipment, dies, tools, and controls, using computer-assisted drafting (CAD) equipment.
 - Lay out and draw schematic, orthographic, or angle views to depict functional relationships of components, assemblies, systems, and machines.
 - Coordinate with and consult other workers to design, lay out, or detail components and systems and to resolve design or other problems.
 - Check dimensions of materials to be used and assign numbers to the materials.
 - Review and analyze specifications, sketches, drawings, ideas, and related data to assess factors affecting component designs and the procedures and instructions to be followed.

17-3013.00 - Mechanical Drafters. (n.d.). Retrieved February 16, 2017, from <https://www.onetonline.org/link/summary/17-3013.00>

Employment Outlook

Tennessee STEM Occupations and Growth



STEM Occupations	2013 Jobs	2023 Jobs	% Change	Median Hourly Earnings
Mathematical Science	2,262	2,756	21.8%	\$30.59
Engineers	28,108	31,667	12.7%	\$38.80
Drafters, Engineering Technicians, and Mapping Technicians	13,226	14,032	6.1%	\$23.32
Life Scientists	3,337	3,676	10.2%	\$30.17
Physical Scientists	4,339	4,800	10.6%	\$34.16
Social Scientists and Related Workers	8,141	9,420	15.7%	\$30.90
Life, Physical, and Social Science Technicians	6,061	6,657	9.8%	\$20.97
Total	65,475	73,009	11.5%	\$31.96

Examination Management Services, Inc. (EMSI) as cited in the "State of Tennessee" presentation by Assistant Commissioner Ted Townsend, April 25, 2014, West Tennessee STEM Hub Conference, Jackson, Tennessee.

Employment Outlook

The table below shows the estimated Employment Wage Statistics for individuals in Tennessee employed as Mechanical Drafters in 2015.

Employment	Entry level	Median	Experienced	Action
1,330	\$37,019	\$50,134	\$66,652	Profile

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, LMI

The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.

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Sample of Current Job Opportunities in Tennessee for Mechanical Drafters

- **BAE Systems-** Kingsport, TN
 - Mechanical Structural Drafter

BAE SYSTEMS

- **Aqua-Chem-** Knoxville, TN
 - Mechanical Designer-Drafter



- **Ingersoll Rand-** Clarksville, TN
 - CAD Designer



- **Thyssenkrupp Elevator Americas-** Memphis, TN
 - CAD Designer/Drafter



- **Lee Company-** Franklin, TN
 - BIM or HVAC Designer



ThyssenKrupp Elevator Americas

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**Appropriate
Pathways for
Solidworks Associate**

Importance of a Pathway

- Industry certifications must be tied to a student's program of study and serve either as a complement or capstone to a student's learning experience.
- Stand-alone certifications with no ties to a student's learning experience place the student in jeopardy of being unprepared not only to sit for the certification, but also not to be able to apply the content moving forward to a career path.

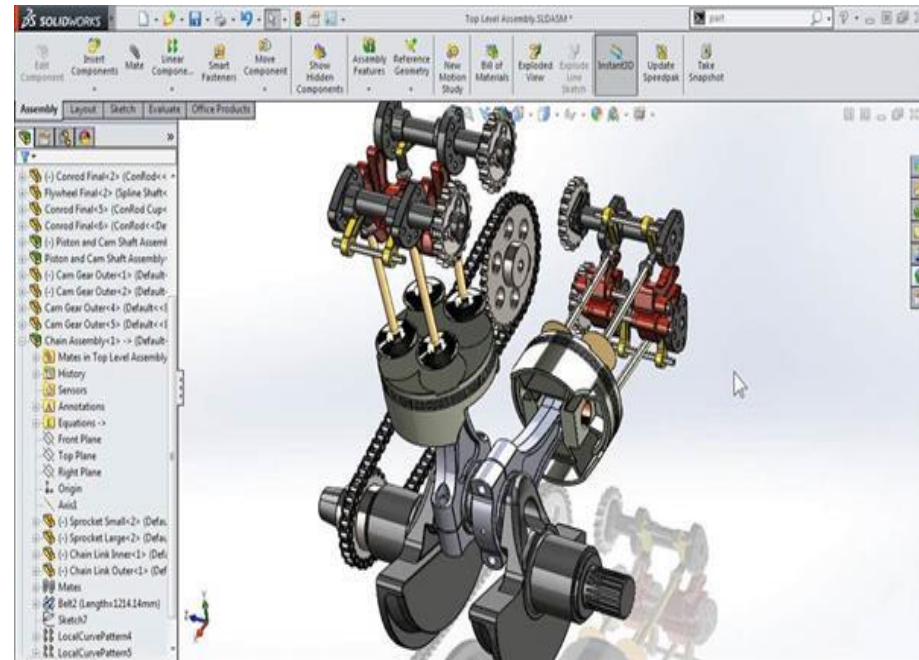


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**Earning a Solidworks
Associate
Certification**

Recommendations

- The CSWA Academic certification is intended for students with a minimum of six to nine months of Solidworks experience and basic knowledge of engineering fundamentals and practices.



- Solidworks recommends that applicants review the online tutorials on Parts, Assemblies, and Drawings as a prerequisite, and have at least 45 hours of classroom time learning Solidworks or using Solidworks with basic engineering design principles and practices.

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Assessment and Registration Details

Assessment Details

Exam Codes	CSWA
Website	https://www.solidworks.com/sw/education/cad-certification-student-program.htm
Number of Questions	<ul style="list-style-type: none">• Basic Theory and Drawing Theory (2 questions, 10 pts total)• Part Modeling (1 question, 30 points)• Assembly Modeling (1 question, 30 points)• Advanced Part Modeling and Analysis (1 question, 20 points)• Advanced Part Modeling and Analysis (1 question, 20 points)
Type of Questions	Performance-based
Length of Test	3 hours
Passing Score	70%
Recommended Experience	6-9 months of Solidworks experience
Languages	English, French, German, Italian, Korean, Spanish, Chinese S, Chinese T, Japanese, and Brazilian Portuguese.
Price	For special pricing information, please click here .

Fees and Registration

Registration and Testing Centers

- The typical fee is \$99. However, students may take these exams for free if their school is a Solidworks Academic Certification Provider and on subscription. Minimum license requirements apply and vary per region. To become a Solidworks Academic Certification Provider click [here](#).
- As a Solidworks Academic Certification Provider, the school must agree to offer the CSWA-Academic Exam in a proctored environment.
- Students who pass the CSWA-Academic Exam receive an electronic certificate listing their certification ID and educational institution name. The certification ID can be verified by schools and employers.
- **For special Tennessee pricing, [click here](#) for more information.**

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Quick Reference

For More Information

<https://www.solidworks.com/sw/education/cad-certification-student-program.htm>

http://www.tn.gov/assets/entities/education/attachments/cte_sic_stem_Solid.pdf

<http://www.tn.gov/education/article/cte-cluster-stem>





Districts and schools in Tennessee will exemplify excellence and equity such that all students are equipped with the knowledge and skills to successfully embark on their chosen path in life.

Excellence | Optimism | Judgment | Courage | Teamwork