



BETZ ENGINEERING & TECHNOLOGY ZONE

Educational & Research Division

AWS-CWENG PART#1 & 2

American Welding Society

Certified Welding Engineer Part# 1&2

BETZ ENGG & TECH ZONE

Certification Programs for the Year 2018

Authorized International Agency:

BETZ ENGINEERING & TECHNOLOGY ZONE

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Door#74, Jeevan Nagar 1st Street
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Training Facility

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<https://www.google.co.in/maps/place/BETZ+Engineering>

<https://www.google.co.in/maps/place/BETZ+Educational>

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About Us...

BETZ Engineering & Technology Zone is an accredited International Agency for American Welding Society, Florida, U.S.A., to conduct Seminars and Certification Programs for AWS in India and Worldwide. BETZ has been assessed and accredited by NABL in accordance with the standard ISO/IEC/17025 in the field of Testing , Non-Destructive & Mechanical Testing. Certificate # TC 5030, BETZ is an ISO 9001:2008 company, also BETZ is the Only

‘ATF – Accredited Test Facility’ of AWS to evaluate and certify welders in India.

“The AWS/CWI Certification is one of the industry’s most reputed Stamps of approval. Industry professional who qualify for CWI are highly regarded and sought after throughout the Welding and QA/AC industry, because certification adheres to a highly documented level of skill & capability”

Month	Seminar City	AWS-CWEng Part # 1 & 2		
		Seminar Dates	Exam Date	Exam City
January	Chennai	Jan – 24 to 30	Jan 31,2018	Chennai
February	Chennai	Feb- 21 to 27	Feb 28, 2018	Chennai
March	Chennai	Mar- 24 to 30	Mar 31, 2018	Pondicherry
April	Chennai	Apr- 23 to 29	Apr 30, 2018	Chennai
May	Chennai	May- 24 to 30	May 31, 2018	Chennai
June	Chennai	Jun – 23 to 29	Jun 30, 2018	Pondicherry
July	Chennai	Jul – 24 to 30	Jul 31, 2018	Chennai
August	Chennai	Aug – 24 to 30	Aug 31,2018	Chennai
September	Chennai	Sep – 23 to 29	Sep 30, 2018	Pondicherry
October	Chennai	Oct – 24 to 30	Oct 31, 2018	Chennai
November	Chennai	Nov – 23 to 29	Nov 30, 2018	Chennai
December	Chennai	Dec – 23 to 28	Dec 29, 2018	Chennai

As the slots are limited to Four Candidates per seminar the allocation would be on“ FIRST COME – FIRST SERVED” basis

You are invited to make use of this opportunity and we look forward to interact with you during this Technical Qualification Program.

Thanks and Regards
RG.Ganesan@9840175179

American Welding Society-Certified Welding Engineer

A person with AWS Certified Welding Engineer certification have demonstrated their skills for preparing or reviewing written instructions for the production of welded joints. They are thoroughly familiar with various codes, specifications, standards and other aspects of fabrication and assembly.

The CWEng often prepares and produces reports, which accurately reflect professional judgment and is able to work with management representatives, inspection personnel, welders and support crafts, understanding the integrated role of each in the development of weldments.

The pivotal role of engineers: pre-production to final completion

The welding engineer's activities begin before production or construction welding begins and continues through the production process...ending when the production process is complete. Each employer is responsible for defining the specific duties of the CWEng in their place of employment

Eligibility

In order to qualify for a certified welding engineer the candidate must be an individual

Having Bachelor of Engineering (B.E) degree and a minimum of one (1) year relevant experience.

Having Bachelor of Technology (B.Tech.) degree and a minimum of two (2) years relevant experience.

Having other related Bachelor of Science (B.Sc.) degrees and a minimum of five (5) years of relevant experience.

Having an Associate in Applied Science (A.A.Sc.) degree and a minimum of ten (10) years of relevant experience.

who have successfully completed high school or an equivalent program and a minimum of fifteen (15) years relevant experience.



Exam pattern

The AWS Certified Welding Engineer (CWEng.) examination consists of four parts. Parts 1 and 2 must be successfully completed in order to take Parts 3 and 4. The first two parts (1 and 2) of the exam are closed book and covers fundamentals of basic science and applied science. Exam will be of two hours for each part of written type with multiple-choice questions (total time of four hours). Part 1 consists of 35 questions of multiple choice and Part 2 has 25 questions of multiple choice. Both the Parts are given together and must be passed together. If the candidate fails in any one part, only that part must be repeated.

Examinations for Parts 3 and 4 are open book examinations on welding related disciplines and practical welding and related applications. Each examination is three hours in length (Duration). Part 3 has 45 questions of essay type. Part 4 has 39 questions of multiple choice type. Candidates that successfully pass Parts 1 and 2 will be invited to sit for Part 3 and Part 4 examinations and a separate application must be submitted to AWS.

Candidates must pass each of the four examinations with an individual score of not less than 60% and attain a minimum weighted percentage of 70% for all 4 Parts.

Seminar Pattern – Parts # 1&2

This Six days course focuses on the fundamental knowledge in Basic Sciences (Part #1) of Mathematics, Physics, Chemistry and applied sciences of (Part # 2) strength of Materials, Heat Transfer & Fluid Mechanics and Electricity.

2 days seminar will be conducted to cover the fundamentals of basic sciences of Part-1 examination that covers all the facets of AWS B5.16, knowledge of mathematics, physics and chemistry.

3 days seminar will be conducted to cover the Applied science fundamentals of Part-2 examination that covers the area of strength of materials, heat transfer, fluid mechanics and electricity.

1 day will be totally dedicated to discussion & review of Parts-1 and 2.

Part #1 – Basic Science Fundamentals

Mathematics:

Simple Calculations (multiple choices)

Special Functions (exp, log)

Trigonometric Functions (sin, cos, tan, cot, sec, csc, degrees, radians)

Algebraic Equations (linear, quadratic, polynomial)

Graphs And Equations (slope, intercept, roots, derivatives, minimum, maximum, interpolation and extrapolation)

Geometry (common geometric shapes)

Hyperbola, Parabola

Complex Numbers

Calculus (fundamentals of differential equations)

Statistics (population and samples: normal distribution, mean, standard deviation and variance)

Simple correlation: linear regression via least squares method, r2 correlation)

Physics:

Unit Conversion (dimension, mass, temperature, time, energy, power)

Mass, Weight, Volume, Density

Force, Energy, Work Done, Power

Stress, Strain, Hooke's Law (elasticity)

Moment And Momentum

Temperature, Heat, Temperature Measurement, Thermocouples, Pyrometers

Thermal Properties of Materials (Thermal Conductivity, Thermal Expansion, Thermal stress and strain)

Chemistry:

Symbols (elements and inorganic compounds—gases, fluxes, etc.)

Molecular Weight and Stoichiometry

Acids and Bases

Balance Chemical Equations

Gas Combustion Reactions (chemical heat generation) and oxidation-reduction reactions

Ideal Gas Law (pressure, volume, temperature)

Mass Balance (as in E7018 coating decomposition to gas, slag and metal)

Bulk and Chemical Analysis Methodologies

Reactivity, Toxicity, Environmental Effect, Disposal.

Part #2 – Applied Science Fundamentals

Strength of Materials:

Load, Deformation (elastic and plastic, buckling), Stress- Strain, Young's Modulus, Shear Modulus, Stress- Strain Curve (yield stress, ultimate tensile stress, elongation) and tensile stress

Shear stress computation

Welded member cross-section effect

Mechanical testing (tensile, bend, fracture toughness, hardness, creep, and fatigue) and data interpretation

Law of Conservation of Energy/Momentum

Stress analysis

Typical engineering material properties

Heat Transfer and Fluid Mechanics:

Heat Conduction, Convection and Radiation, Thermal Conductivity and Diffusivity, Heat Transfer Coefficients of Engineering Materials and Fourier's Law

Heating Rate and Cooling Rate

Industrial Heating Methods, Power Consumption and Gas Flow Rates

Laminar and Turbulent Flow (reynold's number), Dew Point and Relative Humidity, Pressure and Regulators Venturi Effect and Gas Velocity Calculation

Atmospheric Pressure and Hyperbaric Conditions

Vacuum Equipment and Measurements

Electricity:

Current, Voltage, Resistance, Impedance and Circuits

Ohm's Law

Kirchhoff's Law

Resistance Loss and Current Rectification

Power Generation

AC/DC, polarity

Power Factor

Electromagnetic Properties

Right-Hand Rule

Current and Voltage Measurements (devices and principles)

Registration Process.

All the registrations are to be completed preferably 5 weeks prior to the commencement of seminar with full payment to avoid disappointment. For more information call us on 9840175179 / 9551665681.

E-mail: registration@welding-certification.com/betzzone@vsnl.net. Upon completion of registration process, candidates can collect their soft copy of study materials and AWS QC1:2007 certification handbook. This will help candidates to start their preparations immediately.

Mode of payment:

The seminar fees for Parts-1 and 2 as mentioned below can be given as D.D drawn in favour of "BETZ ENGINEERING & TECHNOLOGY ZONE" payable at Chennai, India.

For the examination fee to be given in US\$, a separate D.D. drawn in favour of "American welding society" payable at Florida, USA, Should be submitted.

Fee Details	
Seminar	Rs.35000/-
Examination	US\$ 750
A/C Accommodation Charges	Rs.5000/-

Training Venue

All seminars will be conducted in our own state of the art training & research division situated in 12000 Sq.ft. premises.



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Training Facilities

**Door#21 Dharakeswari Nagar 1 st Street
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ALL THE BEST
BETZ ENGG & TECH ZONE
&
GOOD LUCK

