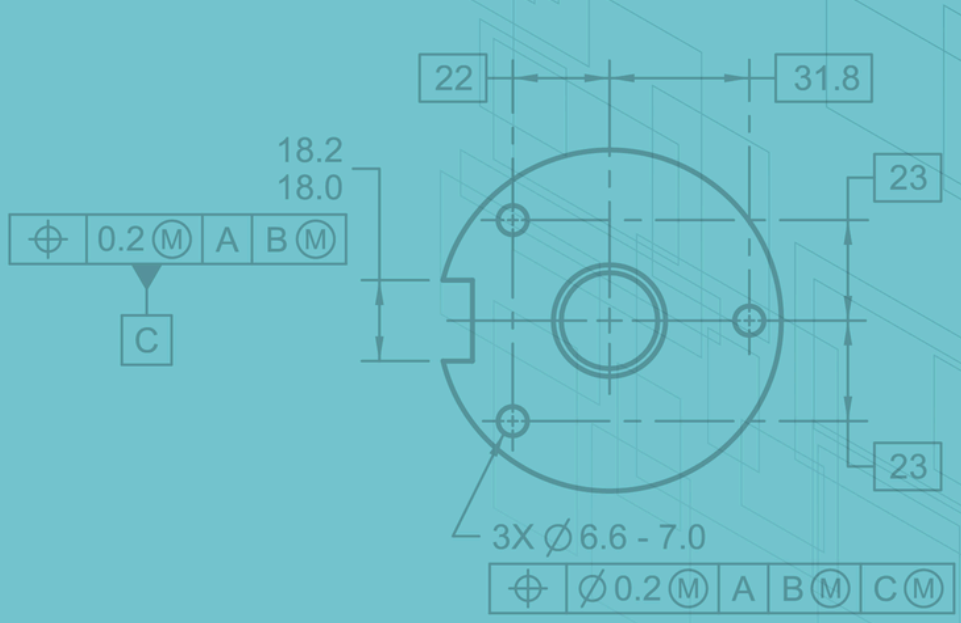
GO.ASME.ORG/GDTP




# ASME Geometric Dimensioning and Tolerancing Professional™ Certification

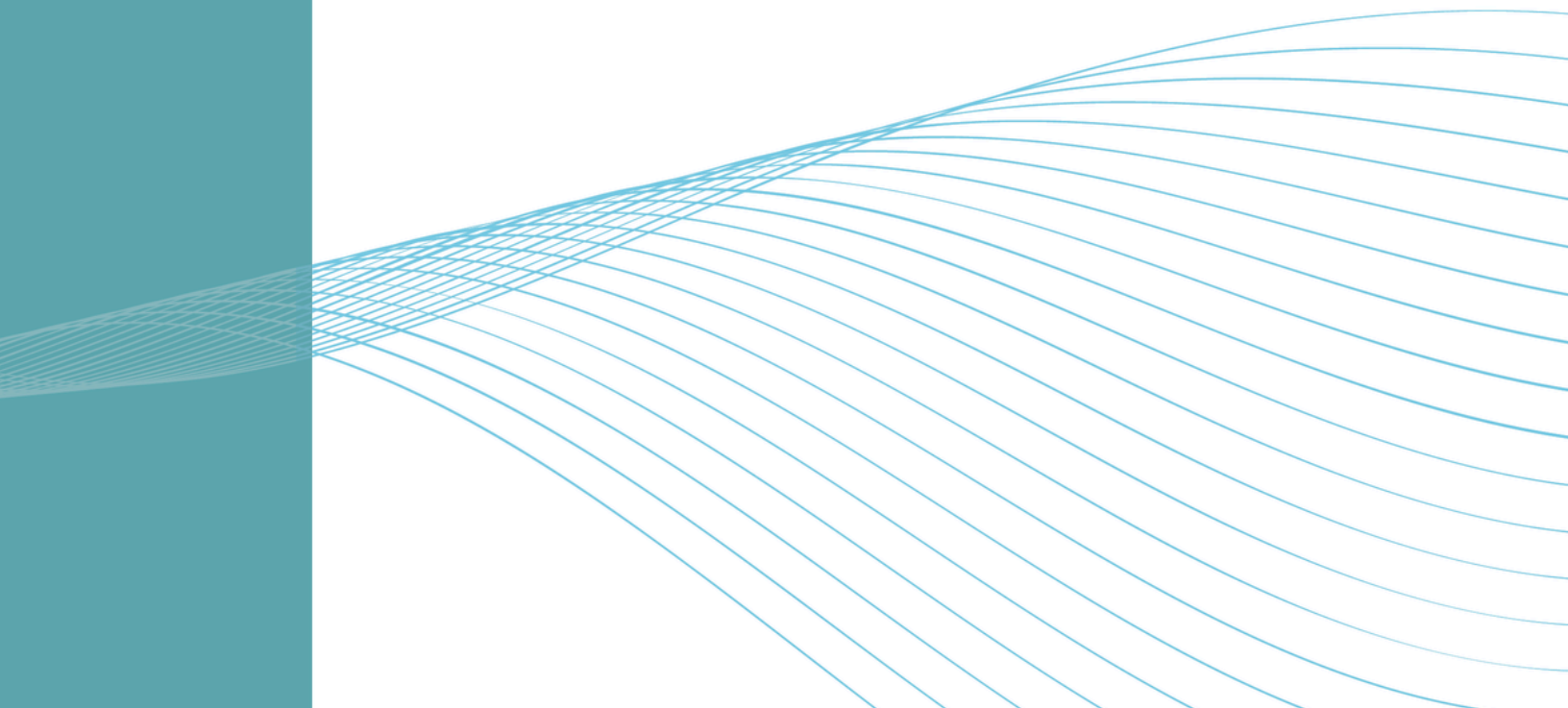
## Applicant Information Handbook

The American Society of Mechanical Engineers®
ASME®

ASME®
SETTING THE STANDARD

# CONTENTS






# GDTP™ CERTIFICATION OVERVIEW


This handbook defines the requirements and qualifications for GDTP certification. These requirements recognize the knowledge, training, and experience necessary to understand, apply, and teach the principles defined in ASME Y14.5-2009 and ASME Y14.5-2018.

The American Society of Mechanical Engineers (ASME) established the Y14.5.2 Subcommittee on Certification in October 1988 to address the need for standardized qualifications for professionals who use the ASME Y14.5 Standard. The Subcommittee was tasked with developing a standard to serve as the foundation for an ASME certification program in Geometric Dimensioning and Tolerancing (GD&T).

The GDTP certification program provides a means to evaluate proficiency in the understanding and application of geometric dimensioning and tolerancing principles as defined in ASME Y14.5-2009 and ASME Y14.5-2018. These principles form a fundamental element of the engineering language used to communicate design intent.

The program offers two levels of certification: Technologist and Senior. The first level, Technologist, measures an individual's ability to read, interpret, and understand engineering drawings prepared using the language of geometric dimensioning and tolerancing as defined in the ASME Y14.5 Standard. Technologist certification is intended for individuals whose responsibilities involve interpreting dimensioning and tolerancing requirements.

The second level, Senior, measures an individual's ability to select, apply, and generate appropriate geometric controls on engineering drawings. Senior certification is intended for individuals responsible for the development and application of dimensioning and tolerancing requirements and reflects a deeper level of technical knowledge and practical application.

# GDTP CERTIFICATION

## WHAT IS ASME GDTP?

### GDTP CERTIFICATION – OVERVIEW

The GDTP Certification Program recognizes professional proficiency in the understanding and application of geometric dimensioning and tolerancing principles as defined in the ASME Y14.5 Dimensioning and Tolerancing Standard.

The program offers two levels of certification: Technologist GDTP and Senior GDTP, which assess an individual's ability to interpret, apply, and generate dimensioning and tolerancing requirements in accordance with the ASME Y14.5 Standard.

Individuals holding GDTP certification may be employed in a wide range of engineering and technical roles, including but not limited to design engineer; manufacturing or production engineer; process engineer; quality engineer; tool or gage engineer; engineering manager; CAD, CAM, or CAE software user, programmer, or developer; drafter or checker; engineering consultant; educator; inspector; contract engineer; project engineer; and technical specialist.

Certification is based on the principles, practices, and applicable appendices of the ASME Y14.5-2009 or ASME Y14.5-2018 editions of the Dimensioning and Tolerancing Standard, as specified in this handbook. A GDTP certificate is issued to applicants who meet the qualifications described herein and is valid for a period of three years from the date of issuance.

## Why Obtain ASME GDTP Certification?

### GDTP CERTIFICATION – BENEFITS

#### Corporate and Engineering Management

1. Verify the GD&T competency of your design, manufacturing, and inspection personnel.

2. Promote consistent interpretation of engineering drawings and documentation across the organization.

3. Improve technical communication among internal teams, suppliers, and customers.

4. Reduce manufacturing and inspection costs through proper application of tolerancing practices.

#### Engineering and Technical Professionals in Design, Drafting, Inspection, Quality, and CAD/CAM

1. The certification provides an industry-recognized way to demonstrate required GD&T knowledge.

2. Enhance your credentials and increase professional recognition among your peers.

3. Confirm your knowledge to work more confidently in advisory and cross-functional roles.

4. Demonstrate your readiness for increased responsibility and career advancement.

# CERTIFICATION LEVELS

## TECHNOLOGIST LEVEL

Technologist GDTP certification indicates that an individual has demonstrated the knowledge and skills required to understand and interpret engineering drawings that apply Geometric Dimensioning and Tolerancing (GD&T) in accordance with the ASME Y14.5 Standard. This includes demonstrated proficiency in recognizing GD&T symbols and modifiers, understanding their relationships, and applying GD&T principles for accurate interpretation of technical documentation.

## SENIOR LEVEL

Senior GDTP certification indicates that an individual has demonstrated advanced competence in the application of Geometric Dimensioning and Tolerancing (GD&T) in accordance with the ASME Y14.5 Standard. This includes the ability to select and apply appropriate GD&T symbols, modifiers, and datum reference frames to document product design intent; perform GD&T-related calculations to determine geometric requirements; and apply GD&T principles in support of manufacturing, quality control, verification, and functional gaging activities associated with engineering drawings and related documentation.

# CERTIFICATION PROCESS

## How to Apply

### 1. Submit Payment

The payment for the examination must be submitted prior to submitting an application. Payment by credit card may be submitted on ASME.org or via phone. Please follow the instructions below to pay by phone.

ASME Customer Care, 8:30 a.m.-5:00 p.m. EDT: 1.800.843.2763 (U.S./Canada) 1.646.616.3100 (outside U.S./Canada)

**Please be prepared to provide the following information**:

- Contact information including: name, title, organization, mailing address, email address, and phone number
- Preferred GDTP certification level (Technologist or Senior) and applicable ASME Y14.5 edition (2009 or 2018)
- Credit card information

You will receive a payment confirmation email shortly after submitting the fee. If you are not paying by credit card**,** please **click here** for more payment options.

### 2. Submit Application

**After completing a GDTP purchase, applicants:**

- Will receive an email confirmation within 24 hours containing instructions for accessing ASME-PC Connect, ASME's online system for submitting applications
- Should refer to the **ASME-PC Connect GDTP User's Guide** for detailed instructions on completing and submitting an online application

Applicants **must complete and submit their application within one year of purchase**. Failure to submit an application within this time period will result in forfeiture of eligibility, although a partial refund may be granted upon request.

All information supplied on this application is subject to verification. Certification may be revoked by ASME for reasons of falsifying or providing inaccurate information during the certification process.

### 3. Schedule Exam

**Once an application has been accepted, candidates:**

- Will receive an email with instructions for scheduling the examination at a Prometric Testing Center
- **Must schedule the examination within 180 days** of acceptance
- Forfeit all fees if an examination appointment is not scheduled within the eligibility period
- May request a one-time 180-day extension prior to the expiration of the original eligibility period, subject to payment of the applicable fee
- Will be subject to a reinstatement fee if Prometric cancellation or rescheduling policies are not followed, resulting in a new eligibility period beginning on the date the fee is processed

### Exam Results

**Notification of results:**

- Will include the percentage of correct answers within each part
- Will be emailed to the applicant within 24-48 hours after the exam
- Grades will **not** be given over the phone

**NOTE:** Candidates who do not pass the exam may take it two times in a period of six months.

### Exam Feedback and Inquiries

**Send to: GDTP@asme.org**

**Do send:**

- General feedback about your testing experience (process, scheduling, technical or administrative issues), without including any exam content.
- If you do not pass and would like your results reviewed: make your intentions known in writing, to be received within 30 days of the date of the notification letter, and include the technical reason(s) upon which the review is based. Submit your request to **GDTP@asme.org**.

**Don't send**

- Any exam content, including remembered questions, answer options, drawings, exhibits, symbols, or reconstructed item details.
- Requests to review, explain, confirm, or debate specific items or scoring outside the formal reconsideration process.
- Personal or proprietary materials as evidence, such as employer drawings, screenshots, or confidential work products.

# CERTIFICATION POLICIES

## Certification

**Applicants who pass the GDTP examination will:**

- Be issued a GDTP certificate
- Receive a certificate that identifies the specific revision of the ASME Y14.5 Standard on which the certification is based
- Receive a certificate that identifies the level of certification achieved
- Receive a certificate that expires three years from the date of issuance
- Be listed as a certificate holder on the ASME-PC Connect website

**Please note:**
Successfully passing the ASME Y14.5-2018 examination confers certification only to the ASME Y14.5-2018 Standard and does not confer certification to any earlier standard (e.g., ASME Y14.5-2009)

## Maintenance of Certification

**Certification may be attained without examination for applicants who:**

- Provide a detailed description of relevant professional experience with GD&T over a period of 24 months

**ASME will notify certificate holders at least six months prior to the expiration date listed on their certificate. To maintain certification, certificate holders must**:

- Log in to ASME-PC Connect
- Pay the applicable recertification fee
- Document and submit their GD&T experience for verification

## Accomodations

**ASME is committed to compliance with Title III of the Americans with Disabilities Act (ADA), as amended. In support of this policy:**

- ASME offers examinations in locations and formats that are accessible to individuals with qualifying disabilities, or provides alternative accessible arrangements where feasible
- ASME may provide auxiliary aids and services and/or make reasonable modifications to examination procedures for candidates who timely request testing accommodations due to a qualifying disability
- All requested accommodations must not fundamentally alter the skills or knowledge being assessed, must not be unduly burdensome, and must not compromise the integrity or security of the examination

## Accomodations Continued

- All accommodation requests must be submitted in advance of the examination date and include supporting documentation sufficient for ASME to determine eligibility under its Policy Manual
- Accommodation requests are evaluated on a case-by-case basis

## Confidentiality

**ASME is committed to protecting confidential and proprietary information related to its certification activities. This confidentiality policy includes the following provisions:**

- Confidential and proprietary information includes information related to applicants, candidates, certificate holders, and the examination development, maintenance, and administration process
- The confidentiality policy applies to all ASME staff, Management Committee members, committee members, consultants, psychometric consultants, and any other individuals authorized to access confidential information
- Candidate information and examination results are released only to the candidate, unless a written authorization is provided by the candidate or disclosure is required by law

**ASME considers certification status to be public information. Accordingly:**

- ASME will provide confirmation of certification status to anyone who requests the information and verification will be accessible via the internet.
- The verification of certification status will include the individual's name, current certification status and credential(s) held, and the city and state where the certificate holder resides.

# CERTIFICATION POLICIES

## Errors or Distruptions in Exam Administration

**Candidates who believe that testing conditions or other examination issues adversely affected their ability to take or complete an examination must report the issue promptly. The following provisions apply:**

- Candidates should notify test center personnel at the time of the examination or contact ASME as soon as possible after the examination
- Examples of qualifying issues may include, but are not limited to: power failures, hardware or software malfunctions, or weather-related disruptions affecting the examination process

**If ASME determines, in its sole discretion, that an issue compromised the integrity of the examination results:**

- ASME will provide the candidate with an opportunity for reexamination
- Reexamination shall be the sole remedy available to the candidate
- Requests to cancel examination results after results have been released will not be considered

ASME shall not be liable for inconvenience, expense, or other damages arising from examination administration issues, including delays in score reporting or the need for retesting. In no circumstance will ASME reduce or alter its certification standards as a means of addressing examination administration problems.

## Code of Ethics

**All individuals involved in the certification process and all Certificate Holders are required to adhere to established ethical and professional standards. These requirements include the following:**

- Individuals involved in the development, administration, and oversight of the certification program, including examination developers and program staff, adhere to the ASME Code of Ethics of Engineers and the ASME Conflict of Interest Policy
- Candidates and Certificate Holders are expected to conduct themselves ethically throughout the certification process and for the duration of time they remain certified
- Candidates and Certificate Holders agree that their professional qualifications and fitness for ASME certification—including professionalism, ethics, integrity, and competence in engineering skills—may be evaluated by ASME, and that ASME's good-faith judgment in such matters shall be final
- Candidates and Certificate Holders are responsible for providing accurate information during application and renewal processes and for complying with all ASME policies throughout the certification period
- Failure by a Candidate or Certificate Holder to comply with the ASME Code of Ethics of Engineers or the ASME Conflict of Interest Policy, as determined by ASME in its sole discretion, may result in invalidation of examination results, suspension or revocation of certification, or exclusion from future examination.

**All ASME examination materials are strictly confidential and protected under federal copyright law. Accordingly:**

- Examination materials include, but are not limited to, examination questions, answers, and candidate performance data
- All ASME examinations are protected by the federal Copyright Act, 17 U.S.C. § 101 et seq.
- Access to ASME examinations is conditioned upon a candidate's agreement to comply with ASME examination policies

**Candidates who take ASME examinations have a continuing obligation to maintain examination confidentiality. Candidates agree that they will:**

- Not copy, reproduce, adapt, disclose, or transmit examination content, in whole or in part, before or after taking an examination, by any means now known or hereafter invented
- Not reconstruct examination content from memory or by any other means
- Not discuss examination or assessment content with others

Candidates acknowledge that disclosure or misuse of examination content constitutes a violation of ASME policies and may result in disciplinary sanctions, including but not limited to invalidation of examination results, exclusion from future examinations, suspension or revocation of certification, and other appropriate sanctions.

**To protect the integrity of the certification process:**

- Test administrators are required to report any observed irregular or improper behavior by a candidate during an examination to ASME
- Irregular or improper behavior identified during an examination, through data forensics or statistical analysis, or by other means constitutes a violation of the certification process
- Such violations may result in invalidation of examination results and disciplinary sanctions, including withholding or revocation of certification or eligibility to participate in the certification program
- ASME investigates all reports of irregular or improper activity
- Failure to fully cooperate with an ASME investigation is considered unprofessional conduct and constitutes grounds for disciplinary action

# TEST REQUIREMENTS

# Y14.5-2018 TECHNOLOGIST EXAMINATION

## Y14.5-2018 TECHNOLOGIST LEVEL EXAMINATION

This certification indicates that the individual has demonstrated proficiency in reading and interpreting engineering drawings prepared in accordance with the ASME Y14.5-2018 Standard.

**The exam competencies include, but are not limited to, the following:**

(a) Understanding the meaning of the symbols, modifiers, and relationships of GD&T as applied to engineering drawings and related documentation.

(b) Making the proper selection with consideration for the function and relationship of part features and of geometric controls, to document the product design intent.

(c) Performing calculations associated with GD&T to determine geometric requirements.

(d) Applying the appropriate geometric control symbols, modifiers, and datum references to the engineering drawings and related documentation.

(e) Applying the principles of GD&T to the operations of manufacturing, quality control, and verification processes associated with engineering drawings and related documentation.

(f) Applying the principles of GD&T to the establishment of functional gaging activities.

**The ASME Y14.5-2018 Technologist Level examination consists of:**

- 150 scored multiple-choice questions
- Maximum duration of 4 hours
- Is closed book
- Evaluates the applicant's knowledge, selection, and application of geometric dimensioning and tolerancing (GD&T) principles and practices in accordance with the ASME Y14.5-2018 Standard.

In order to be certified as a Technologist GDTP, applicants must successfully pass the Technologist GDTP Examination

**The topics covered on the examination, the approximate distribution of questions by topic, and the minimum passing requirements are described below:**

- Candidates **must** achieve an **overall score of at least 74%**
- A **minimum score of 50%** in each section below.

**ASME Y14.5-2018 Technologist Examination by Sections:**

(a) 25% on Sections 3 through 6 (Definitions, Rules, Tolerancing, Symbology)

(b) 20% on Section 7 (Datum Reference Frames)

(c) 5% on Section 8 (Form)

(d) 5% on Section 9 (Orientation)

(e) 25% on Section 10 (Position)

(f) 15% on Section 11 (Profile)

(g) 5% on Section 12 (Runout)

# BODY OF KNOWLEDGE

# Y14.5-2018 TECHNOLOGIST EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2018 Technologist Level certification examination.**

**Domain 1: DEFINITIONS, RULES, TOLERANCING, AND SYMBOLOGY**
**Knowledge/Skill in:**
(a) Fundamental rules
(b) Units of measure
(c) Types of dimensioning
(d) Application of dimensions
(e) Dimensioning features
(f) Location of features

**Domain 2: TOLERANCING, INTERPRETATION OF LIMITS, LIMITS OF SIZE AND MATERIAL CONDITION MODIFIERS**
**Knowledge/skill in:**
(a) General
(b) Direct tolerancing methods
(c) Tolerance expression
(d) Interpretation of limits
(e) Single limit toleranced dimensions
(f) Tolerance accumulations between surfaces
(g) Dimensions related to an origin
(h) Limits of size
(i) Applicability of modifiers on geometric tolerance value and datum feature references
(j) Screw threads
(k) Gears and splines
(l) Boundary conditions
(m) Angular surfaces
(n) Conical tapers
(o) Flat tapers
(p) Radius
(q) Tangent plane
(r) Statistical tolerancing

**Domain 3: SYMBOLOGY**
**Knowledge/skill in:**
(a) General
(b) Use of notes to supplement symbols
(c) Symbol construction
d) Feature control frame symbols
(e) Feature control frame placement
(f) Tolerance zone shape
(g) Tabulated tolerances

**Domain 4: DATUM REFERENCE FRAMES**
**Knowledge/skill in:**
(a) General
(b) Degrees of freedom
(c) Degrees of freedom constrained by primary datum features (RMB)
(d) Constraining degrees of freedom of a part
(e) True geometric counterpart
(f) True geometric counterparts and physical datum features simulators
(g) Datum reference frame
(h) Datum features
(i) Datum feature controls
(j) Specifying datum features in an order of precedence
(k) Establishing datums
(l) Common datum features
(m) Mathematically defined surface
(n) Multiple datum reference frames
(o) Functional datum features
(p) Rotational constraint about a datum axis or point
(q) Application of maximum material boundary (MMB), least material boundary (LMB), and RMB to irregular features of size
(r) Datum feature selection practical application
(s) Simultaneous requirements
(t) restrained condition
(u) Datum reference frame identification
(v) Customized datum reference frame construction
(w) Application of a customized datum reference frame
(x) Datum targets

# BODY OF KNOWLEDGE

# Y14.5-2018 TECHNOLOGIST EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2018 Technologist Level certification examination.**

**Domain 5: TOLERANCES OF FORM**
**Knowledge/skill in:**
(a) General
(b) Form control
(c) Specifying form tolerances
(d) Form tolerances
(e) Average diameter

**Domain 6: TOLERANCES OF ORIENTATION**
**Knowledge/skill in:**
(a) General
(b) Positional tolerancing
(c) Positional tolerancing fundamentals - I
(d) Positional tolerancing fundamentals - II
(e) Pattern location
(f) Coaxial feature controls
(g) Tolerancing for symmetrical relationships

**Domain 7: TOLERANCES OF POSITION**
**Knowledge/skill in:**
(a) General
(b) Positional tolerancing
(c) Positional tolerancing fundamentals - I
(d) Positional tolerancing fundamentals - II
(e) Pattern location
(f) Coaxial feature controls
(g) Tolerancing for symmetrical relationships

**Domain 8: TOLERANCES OF PROFILE**
**Knowledge/skill in:**
(a) General
(b) Profile
(c) Tolerance zone boundaries
(d) Profile applications
(e) Material condition and boundary condition modifiers as related to profile controls
(f) Composite profile
(g) Multiple single-segment profile tolerancing
(h) Combined controls
(i) Profile of a line as a refinement
(j) Dynamic profile tolerance modifer

**Domain 9: TOLERANCES OF RUNOUT**
**Knowledge/skill in:**
(a) General
(b) Runout
(c) Runout tolerance
(d) Types of runout tolerances
(e) Application
(f) Specification

**ASME Y14.5-2018 NONMANDATORY APPENDICES**
Knowledge of the material in ASME Y14.5-2018, Nonmandatory Appendix B, Formulas for Positional Tolerancing is required for the Technologist level examination.

# TEST REQUIREMENTS

# Y14.5-2018 SENIOR EXAMINATION

## Y14.5-2018 SENIOR LEVEL EXAMINATION

Applicants for the Senior GDTP examination must demonstrate a **minimum of 3 years** of relevant GD&T professional experience. The description must include work personally performed by the applicant within the last 3 years and demonstrate independent application of GD&T principles. It is not required to be a certified GDTP Technologist to qualify for Senior Level certification. ASME membership is not an exam requirement.

**The exam competencies include, but are not limited to, the following:**

1. Understanding the meaning of the symbols, modifiers, and relationships of GD&T as applied to engineering drawings and related documentation.
2. Making the proper selection with consideration for the function and relationship of part features and of geometric controls, to document the product design intent.
3. Performing calculations associated with GD&T to determine geometric requirements.
4. Applying the appropriate geometric control symbols, modifiers, and datum references to the engineering drawings and related documentation.
5. Applying the principles of GD&T to the operations of manufacturing, quality control, and verification processes associated with engineering drawings and related documentation.
6. Applying the principles of GD&T to the establishment of functional gaging activities.

**The ASME Y14.5-2018 Senior Level examination consists of:**

- 150 scored multiple-choice questions
- Maximum duration of 6 hours
- Is closed book
- Evaluates the applicant's knowledge, selection, and application of geometric dimensioning and tolerancing (GD&T) principles and practices in accordance with the ASME Y14.5-2018 Standard.

In order to be certified as a Senior GDTP, applicants must successfully pass the Senior GDTP Examination.

**The topics covered on the examination, the approximate distribution of questions by topic, and the minimum passing requirements are described below:**

- Candidates **must** achieve an **overall score of at least 74%**
- A **minimum score of 50%** in each sections below.

**ASME Y14.5-2018 Senior Examination by Sections:**

(a) 10% on Sections 3 through 6 (Definitions, Rules, Tolerancing, Symbology)
(b) 30% on Section 7 (Datum Reference Frames)
(c) 5% on Section 8 (Form)
(d) 5% on Section 9 (Orientation)
(e) 25% on Section 10 (Position)
(f) 20% on Section 11 (Profile)
(g) 5% on Section 12 (Runout)

# BODY OF KNOWLEDGE

# Y14.5-2018 SENIOR EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2018 Senior Level certification examination.**

## Domain 1: DEFINITIONS, RULES, TOLERANCE, AND SYMBOLOGY

### Task 1: Fundamental Rules, Tolerancing Defaults, and Dimensioning Practices

**Knowledge/skill in:**

(a) Fundamental rules
(b) Units of measure
(c) Types of dimensioning
(d) Application of dimensions
(e) Dimensioning features
(f) Location of features

### Task 2: Tolerancing, Interpretation of Limits, Limits of Size, and Material Condition Modifiers

**Knowledge/skill in:**

(a) General
(b) Direct tolerancing methods
(c) Tolerance expression
(d) Interpretation of limits
(e) Single limit toleranced dimensions
(f) Tolerance accumulation between surfaces
(g)Dimensions related to an origin
(h) Limits of size
(i) Applicability of modifiers on geometric tolerance values and datum feature references
(j) Screw threads
(k) Gears and splines
(l) Boundary conditions
(m) Angular surfaces
(n) Conical tapers
(o) Flat tapers
(p) Radius
(q) Tangent plane
(r) Statistical tolerancing

### Task 3: Symbology

**Knowledge/skill in:**

(a) General
(b) Use of notes to supplement symbols
(c) Symbol construction
(d) Feature control frame symbols
(e) Feature control frame placement
(f) Tolerance zone shape
(g) Tabulated tolerances

## Domain 2: DATUM REFERENCE FRAMES

**Knowledge/skill in:**

(a) General
(b) Degrees of freedom
(c) Degrees of freedom constrained by primary datum features regardless of material boundary (RMB)
(d) Constraining degrees of freedom of a part
(e) True geometric counterpart
(f) True geometric counterpart and physical datum feature simulators
(g) Datum reference frame
(h) Datum features
(i) Datum feature controls
(j) Specifying datum features in an order of precedence
(k) Establishing datums
(l) Common datum features
(m) Mathematically defined surface
(n) Multiple datum reference frames
(o) Functional datum features
(p) Rotational constraint about a datum axis or point
(q) Application of maximum material boundary (MMB), least material boundary (LMB), and RMB to irregular features of size
(r) Datum feature selection practical application
(s) Simultaneous requirements
(t) Restrained condition
(u) Datum reference frame identification
(v) Customized datum reference frame construction
(w) Application of a customized datum reference frame
(x) Datum targets

# BODY OF KNOWLEDGE

# Y14.5-2018 SENIOR EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2018 Senior Level certification examination.**

**Domain 3: TOLERANCES OF FORM**
**Knowledge/skill in:**
(a) General
(b) Form control
(c) Specifying form tolerances
(d) Form tolerances
(e) Average diameter

**Domain 4: TOLERANCES OF ORIENTATION**
**Knowledge/skill in:**
(a) General
(b) Orientation control
(c) Specifying orientation tolerances
(d) Tangent plane
(e) Alternative practice

**Domain 5: TOLERANCES OF POSITION**
**Knowledge/skill in:**
(a) General
(b) Positional tolerancing
(c) Positional tolerancing fundamentals - I
(d) Positional tolerancing fundamentals - II
(e) Pattern location
(f) Coaxial feature controls
(g) Tolerancing for symmetrical relationships

**Domain 6: TOLERANCES OF PROFILE**
**Knowledge/skill in:**
(a) General
(b) Profile
(c) Tolerance zone boundaries
d) Profile applications
(e) Material condition and boundary condition modifiers as related to profile controls
(f) Composite profile
(g) Multiple single-segment profile tolerancing
(h) Combined controls
(i) Profile of a line as a refinement
(j) Dynamic profile tolerance modifier

**Domain 7: TOLERANCES OF RUNOUT**
(a) general
(b) runout
(c) runout tolerance
(d) types of runout tolerances
(e) application
(f) specification

**ASME Y14.5-2018 NONMANDATORY APPENDICES**
Knowledge of the material in ASME Y14.5-2018, Nonmandatory Appendix B, Formulas for Positional Tolerancing is required for the Senior level examination.

# TEST REQUIREMENTS

# Y14.5-2009 TECHNOLOGIST EXAMINATION

## Y14.5-2009 TECHNOLOGIST LEVEL EXAMINATION

This certification indicates that the individual has demonstrated proficiency in reading and interpreting engineering drawings prepared in accordance with the ASME Y14.5-2009.

**The exam competencies include, but are not limited to, the following:**

- Understanding the rules, definitions, principles, and meanings of the symbols and modifiers of GD&T as applied to engineering drawings and related documentation
- Understanding the functions and relationships of part features and geometric controls
- Performing calculations associated with GD&T derived from the drawing and related documentation
- Understanding that the application of GD&T has implications for manufacturing, quality control, and verification processes associated with engineering drawings and related documentation
- Applying the principles of GD&T to the establishment of functional gaging activities

**The ASME Y14.5-2009 Technologist Level examination consists of:**

- 150 scored multiple-choice questions
- Maximum duration of 4 hours
- Is closed book
- Evaluates the applicant's knowledge of GD&T principles and practices in accordance with the ASME Y14.5-2009 Standard.

In order to be certified as a Technologist GDTP, applicants must successfully pass the Technologist GDTP Examination

**The topics covered on the examination, the approximate distribution of questions by topic, and the minimum passing requirements are described below:**

- Candidates **must** achieve an **overall score of at least 78%**
- A minimum score of **50%** in each section below.

**ASME Y14.5-2009 Technologist Examination by Sections:**

(a) 10% on Scope
(b) 10% on General Tolerancing
(c) 5% on Symbology
(d) 20% on Datum Referencing
(e) 5% on Form
(f) 5% on Orientation
(g) 25% on Location
(h) 15% on Profile
(i) 5% on Runout

# BODY OF KNOWLEDGE

# Y14.5-2009 TECHNOLOGIST EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2009 Technologist Level certification examination and is detailed in Appendix C of the ASME Y14.5.2-2017 Standard.**

**Domain 1: SCOPE, DEFINITIONS, AND GENERAL DIMENSIONING**
**Knowledge/skill in:**
(a) Scope
(b) References
(c) Definitions
(d) Fundamental rules
(e) Units of measure
(f) Types of dimensioning
(g) Application of dimensions
(h) Dimensioning features
(i) Location of features

**Domain 2: GENERAL TOLERANCING AND RELATED PRINCIPLES**
**Knowledge/skill in:**
(a) General
(b) Direct tolerancing methods
(c) Tolerance expression
(d) Interpretation of limits
(e) Single limits
(f) Tolerance accumulation
(g) Limits of size
(h) Applicability of modifiers on geometric tolerance
values and datum feature references
(i) Screw threads
(j) Gears and splines
(k) Boundary conditions
(l) Angular surfaces
(m) Conical tapers
(n) Flat tapers
(o) Radius
(p) Tangent plane
(q) Statistical tolerancing

**Domain 3: SYMBOLOGY**
**Knowledge/skill in:**
(a) General
(b) Use of notes to supplement symbols
(c) Symbol construction
(d) Feature control frame symbols
(e) Feature control frame placement
(f) Definition of the tolerance zone
(g) Tabulated tolerances

**Domain 4: DATUM REFERENCE FRAMES**
**Knowledge/skill in:**
(a) General
(b) Degrees of freedom
(c) Degrees of freedom constrained by primary datum features regardless of material boundary (RMB)
(d) Constraining degrees of freedom of a part
(e) Datum feature simulator
(f) Theoretical and physical application of datum feature simulators
(g) Datum reference frame
(h) Datum features
(i) Datum feature controls
(j) Specifying datum features in an order of precedence
(k) Establishing datums
(l) Multiple datum features
(m) Mathematically defined surface
(n) Multiple datum reference frames
(o) Functional datum features
(p) Rotational constraint about a datum axis or point
(q) Application of maximum material boundary (MMB), least material boundary (LMB), and RMB to irregular features of size
(r) Datum feature selection practical application
(s) Simultaneous requirements
(t) Restrained condition
(u) Datum reference frame identification
v) Customized datum reference frame construction
(w) Application of a customized datum reference frame
(x) Datum targets

# BODY OF KNOWLEDGE

# Y14.5-2009 TECHNOLOGIST EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2009 Technologist Level certification examination and is detailed in Appendix C of the ASME Y14.5.2-2017 Standard.**

**Domain 5: TOLERANCES OF FORM**
**Knowledge/skill in:**
(a) General
(b) Form control
(c) Specifying form tolerances
(d) Form tolerances
(e) Application of free-state symbol

**Domain 6: TOLERANCES OF ORIENTATION**
**Knowledge/skill in:**
(a) general
(b) orientation control
(c) orientation symbols
(d) specifying orientation tolerances
(e) tangent plane
(f) alternative practice

**Domain 7: TOLERANCES OF LOCATION**
**Knowledge/skill in:**
(a) General
(b) Positional tolerancing
(c) Positional tolerancing fundamentals - I
(d) Positional tolerancing fundamentals - II
(e) Pattern location
(f) Coaxial feature controls
(g) Tolerancing for symmetrical relationships

**Domain 8: TOLERANCES OF PROFILE**
**Knowledge/skill in:**
(a) General
(b) Profile
(c) Tolerance zone boundaries
(d) Profile applications
(e) Material condition and boundary condition modi-fiers as related to profile controls
(f) Composite profile
(g) Multiple single-segment profile tolerancing
(h) Combined controls

**Domain 9: TOLERANCES OF RUNOUT**
**Knowledge/skill in:**
(a) General
(b) Runout
(c) Runout tolerance
(d) Types of runout tolerances
(e) Application
(f) Specification

**ASME Y14.5-2009 NONMANDATORY APPENDICES**
Knowledge of the material in ASME Y14.5-2009, Nonmandatory Appendix B, Formulas for Positional Tolerancing is required for the Technologist level examination.

# TEST REQUIREMENTS

# Y14.5-2009 SENIOR EXAMINATION

## Y14.5-2009 SENIOR LEVEL EXAMINATION

Applicants for the Senior GDTP examination must demonstrate a **minimum of 3 years** of relevant GD&T professional experience. The description must include work personally performed by the applicant within the last 3 years and demonstrate independent application of GD&T principles. It is not required to be a certified GDTP Technologist to qualify for Senior Level certification. ASME membership is not an exam requirement.

**The exam competencies include, but are not limited to, the following:**

1. Understanding the rules, definitions, principles, and meanings of the symbols and modifiers of GD&T as applied
2. To engineering drawings and related documentation
3. Making the proper selection with consideration for the function and relationship of part features and geometric controls, to document the product design intent
4. Performing calculations associated with GD&T to determine the geometric requirements
5. Applying the appropriate geometric control symbols, modifiers, and datum references to the engineering drawings and related documentation
6. Applying the principles of GD&T to the operations of manufacturing, quality control, and verification processes associated with engineering drawings and related documentation
7. Applying the principles of GD&T to the establishment of functional gaging activities

**The ASME Y14.5-2009 Senior Level examination consists of:**

- 150 scored multiple-choice questions
- Maximum duration of 6 hours
- Is closed book
- Evaluates the applicant's knowledge of GD&T principles and practices in accordance with the ASME Y14.5-2009 Standard.

In order to be certified as a Senior GDTP, applicants must successfully pass the Senior GDTP Examination.

**The topics covered on the examination, the approximate distribution of questions by topic, and the minimum passing requirements are described below:**

- Candidates **must** achieve an **overall score of at least 78%**
- A **minimum score of 50%** in each section below.

**ASME Y14.5-2009 Senior Examination by Sections:**

(a) 10% on Scope, General Dimensioning, and Symbology

(b) 30% on Datum Referencing

(c) 5% on Form

(d) 5% on Orientation

(e) 25% on Location

(f) 20% on Profile

(g) 5% on Runout

# BODY OF KNOWLEDGE

# Y14.5-2009 SENIOR EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2009 Senior Level certification examination.**

**Domain 1: SCOPE, DEFINITIONS, AND GENERAL DIMENSIONING**
**Knowledge/skill in:**
(a) Scope
(b) References
(c) Definitions
(d) Fundamental rules
(e) Units of measure
(f) Types of dimensioning
(g) Application of dimensions
(h) Dimensioning features
(i) Location of features

**Domain 2: GENERAL TOLERANCING AND RELATED PRINCIPLES**
**Knowledge/skill in:**
(a) General
(b) Direct tolerancing methods
(c) Tolerance expression
(d) Interpretation of limits
(e) Single limits
(f) Tolerance accumulation
(g) Limits of size
(h) Applicability of modifiers on geometric tolerance values and datum feature references
(i) Screw threads
(j) Gears and splines
(k) Boundary conditions
(l) Angular surfaces
(m) Conical tapers
(n) Flat tapers
(o) Radius
(p) Tangent plane
(q) Statistical tolerancing

**Domain 3: SYMBOLOGY**
**Knowledge/skill in:**
(a) General
(b) Use of notes to supplement symbols
(c) Symbol construction
(d) Feature control frame symbols
(e) Feature control frame placement
(f) Definition of the tolerance zone
(g) Tabulated tolerances

**Domain 4: DATUM REFERENCE FRAMES**
**Knowledge/skill in:**
(a) General
(b) Degrees of freedom
(c) Degrees of freedom constrained by primary datum features regardless of material boundary (RMB)
(d) Constraining degrees of freedom of a part
(e) Datum feature simulator
(f) Theoretical and physical application of datum feature simulators
(g) Datum reference frame
(h) Datum features
(i) Datum feature controls
(j) Specifying datum features in an order of precedence
(k) Establishing datums
(l) Multiple datum features
(m) Mathematically defined surface
(n) Multiple datum reference frames
(o) Functional datum features
(p) Rotational constraint about a datum axis or point
(q) Application of maximum material boundary (MMB), least material boundary (LMB), and RMB to irregular features of size
(r) Datum feature selection practical application
(s) Simultaneous requirements
(t) Restrained condition
(u) Datum reference frame identification
(v) Customized datum reference frame construction
(w) Application of a customized datum reference frame
(x) Datum targets

# BODY OF KNOWLEDGE

# Y14.5-2009 SENIOR EXAMINATION

**This body of knowledge forms the basis of the ASME Y14.5-2009 Senior Level certification examination.**

**Domain 5: TOLERANCES OF FORM**
**Knowledge/skill in:**
(a) General
(b) Form control
(c) Specifying form tolerances
(d) Form tolerances
(e) Application of free-state symbol

**Domain 6: TOLERANCES OF ORIENTATION**
**Knowledge/skill in:**
(a) General
(b) Orientation control
(c) Orientation symbols
(d) Specifying orientation tolerances
(e) Tangent plane
(f) Alternative practice

**Domain 7: TOLERANCES OF LOCATION**
**Knowledge/skill in:**
(a) General
(b) Positional tolerancing
(c) Positional tolerancing fundamentals - I
(d) Positional tolerancing fundamentals - II
(e) Pattern location
(f) Coaxial feature controls
(g) Tolerancing for symmetrical relationships

**Domain 8: TOLERANCES OF PROFILE**
**Knowledge/skill in:**
(a) General
(b) Profile
(c) Tolerance zone boundaries
d) Profile applications
(e) Material condition and boundary condition modifiers as related to profile controls
(f) Composite profile
(g) Multiple single-segment profile tolerancing
(h) Combined controls

**Domain 9: TOLERANCES OF RUNOUT**
**Knowledge/skill in:**
(a) General
(b) Runout
(c) Runout tolerance
(d) Types of runout tolerances
(e) Application
(f) Specification

**ASME Y14.5-2009 NONMANDATORY APPENDICES**
Knowledge of the material in ASME Y14.5-2009, Nonmandatory Appendix B, Formulas for Positional Tolerancing is required for the Senior level examination.

# STATEMENT OF POLICY ON THE USE OF ASME GDTP SYMBOLS AND AUTHORIZATION IN ADVERTISING

ASME Geometric Dimensioning and Tolerancing Professional (GDTP) certification program recognizes individuals who have demonstrated the required competence at the Technologist or Senior level. Individuals who meet these requirements are issued an ASME GDTP certificate. This policy governs the appropriate use of ASME GDTP credentials, symbols, and logos and is intended to protect the integrity and credibility of the GDTP certification program.

**Individual Nature of Certification**

ASME GDTP certification applies only to individuals. It does not apply to organizations, products, services, courses, or activities. ASME does not approve, certify, rate, or endorse any item, construction, service, or activity manufactured, designed, taught, published, or performed by a GDTP certificate holder.

Organizations may reference the certification of specific individuals, provided the reference clearly identifies the credential as individual-based.

**ASME has established two GDTP Symbols and Logos certification trademarks:**

- GDTP Technologist Logo
- GDTP Senior Logo

These logos may be used only by current certificate holders, and only in an individual capacity, to indicate the named individual's GDTP certification level.

**Permitted Use**

Certificate holders may reference their GDTP certification in professional materials such as business cards, resumes, biographies, email signatures, and professional profiles.

When referenced in organizational materials, certification must be attributed to the individual and described using language such as:

"*The instructor, author, or employee is GDTP certified by ASME in accordance with the qualifications of ASME Y14.5.2–2018 at the Technologist or Senior level.*"

GDTP logos may be displayed only where the presence of one or more certified individuals is clearly identified.

**Prohibited Use**

The following uses are strictly prohibited:

- Use of GDTP logos in any manner that is misleading or that implies certification of an organization, product, service, course, group, or activity rather than a specifically identified certified individual.
- Use of GDTP logos when no associated individual holds a current GDTP certificate at the referenced level, or when the certification status cannot be clearly attributed to an individual.
- Application of GDTP logos to products, product packaging, training materials, or review course materials, or in any context suggesting product or service conformity.
- Modification, alteration, or improper reproduction of GDTP logos.
- Any statement or representation implying that ASME approves, certifies, rates, endorses, or is otherwise responsible for any product, service, activity, or outcome, or that an individual or organization acts on behalf of ASME without authorization.

**ASME Logo and Credential Use Policy**

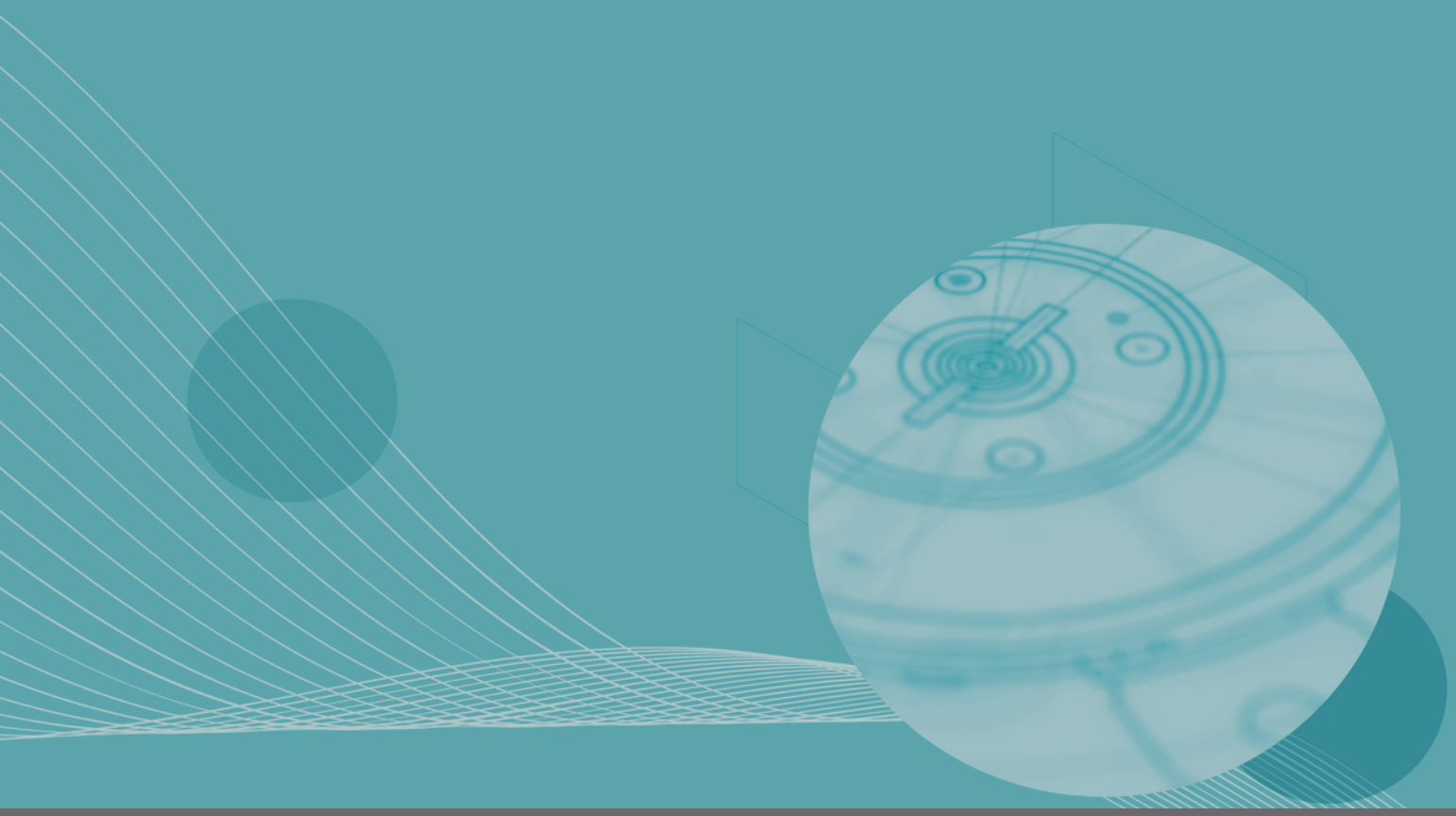
The ASME corporate logo (the cloverleaf containing "ASME") may be used only by ASME, and any misuse of ASME GDTP symbols, logos, or credential references may result in corrective action, including withdrawal of authorization to use the certification marks.

# ASME Geometric Dimensioning and Tolerancing Professional Certification

## Applicant Information Handbook

**For more information on:**
**ASME GDTP (Y14.5)**
**visit: go.asme.org/gdtp**

**ASME Study Guide for Certification of Geometric Dimensioning and Tolerancing Professionals**
**To purchase the Study Guide, visit ASME Study Guide link**



The American Society of Mechanical Engineers®
ASME®

ASME®
SETTING THE STANDARD