

# International Cost Estimating and Analysis Association Professional Certification Program



***PROFESSIONAL  
CERTIFICATION  
PROGRAM***

**ICEAA** International Cost Estimating  
and Analysis Association

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## Acknowledgements

We thank the professionals within the cost community who collaboratively volunteered their time, energies and efforts to put this program and this handbook together. In particular, we thank

*Neil Albert* MCR  
*Peter Andrejev* Booz Allen Hamilton  
*Peter Braxton* Northrop Grumman TASC  
*David Brown* LMI  
*Sharon Burger* SCEA National Office  
*Bob Carlton* Northrop Grumman  
*Lenny Cheshire* SCEA National Office  
*Kevin Cincotta* LMI  
*Elmer Clegg* SCEA National Office  
*Dick Coleman* Northrop Grumman  
*Rick Collins* Technomics  
*Doug Druley* BAE Systems  
*Thomas DuPré* U.S. Air Force (SAF/FMCP)  
*Brian Flynn* U.S. Navy (NCCA)  
*Donna Gravely* U.S. Air Force (ASC)  
*Don Gudzone* Lockheed Martin  
*Rich Hartley* U.S. Air Force (SAF/FMC)  
*Bill Haseltine* U.S. Navy (SOCOM)  
*Carol Hibbard* Boeing  
*Kate Hiebert* Michael Patrick Consulting, LLC  
*Luis James* U.S. Air Force (SAF/FMCP)  
*Dick Janda* Lockheed Martin  
*Ken Kennedy* U.S. Air Force (ACC)  
*Wendy Kunc* U.S. Navy (NCCA)  
*Joe Puckett* U.S. Air Force (EUCOM)  
*Mitch Robinson* Wyle Labs  
*Linda Simmons* U.S. Army (FMC)  
*Bryan Stapleton* Lockheed Martin  
*Susan Wileman* U.S. Navy (NCCA)  
*Ranae Woods* U.S. Air Force (SAF/FMC)  
*Pat Zedaker* Boeing

A special thank you goes to Mr. Richard Hartley for his leadership and support, Mr. Mitch Robinson for his untiring efforts to maintain the program alone, and Mr. Neil Albert and Mr. Peter Andrejev for their constant commitment to excellence.

Bill Haseltine  
President, Society of Cost Estimating and Analysis  
June 2008

## Introduction

The Society of Cost Estimating and Analysis (SCEA) was founded in 1990 with four major long-term objectives: unify the entire cost community; work towards a common understanding of cost estimating techniques and methods; set standards and promote cost estimating and analysis within the federal government and private industry; and uphold the ethical standards of conduct throughout the profession. In June 2012, the Board of Directors of SCEA and of the International Society of Parametric Analysts (ISPA) voted to approve a merger of the two organizations. In November 2012 the merger was legally approved and the International Cost Estimating and Analysis Association (ICEAA) was founded. Continuing in the tradition set forth by SCEA & ISPA, ICEAA remains vigilant in its mission to establish and maintain clearly-defined competency standards that government and private industry alike can recognize as meaningful measures against which practitioners can be tested and ultimately certified for achieving professional proficiency.

Senior leaders in business and government alike have long recognized that accurate cost estimates are invaluable in informing decisions that impact both top-line resource allocations and bottom line performance or profitability. Consequently, employers and clients seek some form of assurance that the cost estimator has the appropriate knowledge and skills needed to generate quality cost estimates efficiently. Likewise, individuals inside the cost community are seeking to improve and distinguish themselves among their peers by demonstrating their cost analysis capabilities.

ICEAA vets and certifies qualified practitioners as a Certified Cost Estimator/ Analyst (CCEA®) through a program that offers training materials, requires minimal experience levels, and culminates in an examination to filter non-proficient individuals. To retain its value in the market, the standards necessary to certify the estimator/analyst's abilities will continually evolve to match employers' expectations of professional competency. The CCEA® moniker is the primary designation of a master practitioner; but to reflect market desires to recognize differing levels of proficiency, ICEAA's certification program includes a Professional Cost Estimator/Analyst (PCEA®) designation for practitioners with less than five years of professional experience, and a specialty designation, CCEA-P® for practitioners who have successfully demonstrated additional expertise in use and application of Parametrics.

The end objective of any certification program is for the practitioner to *attain* a minimum level of proficiency through training and real-world experience, and to demonstrate *retention* of said competency through a recognizable testing standard. With this as our goal, we provide a program that reinforces attainment of enduring knowledge and skills, rather than prompting mastery of short-term test-taking skills. The next several pages detail the specifics of the ICEAA Professional Certification Program. This Professional Certification Program Handbook provides detailed information on experience and eligibility requirements; availability and applicability of training programs and materials; examination format, topics and practice samples; and descriptions of alternative professional designations that can be attained over one's career in the cost field.

We hope that you appreciate the hard work innumerable individuals contributed in creating a program that aims to train, attain, and sustain the high levels of excellence for its constituency in this day and age when certification matters so much. To that end, you can be sure that as the profession grows and evolves that this program will continue to grow and adapt to meet the needs of individuals and organizations, both public and private.

Peter Andrejev  
Director of Certification  
December 2012

## Goal of Certification

The goal of the ICEAA Professional Certification Program is to provide a credential that assures both the individual and the employer that the practitioner is capable of generating accurate cost estimates and analyses. The credential necessarily implies a mastery of cost knowledge, skills and judgment.

The Professional Certification Program also supports a variety of the Association's goals and objectives, which include:

- Promoting and enhancing the profession of cost estimating and analysis
- Fostering the professional growth of its members
- Promoting a common Body of Knowledge as a standard for individual excellence
- Rewarding achievement through an appropriate program of recognition and certification
- Developing and maintaining standards of proficiency and performance
- Establishing standards in the terminology, conduct and application of cost estimating and analysis

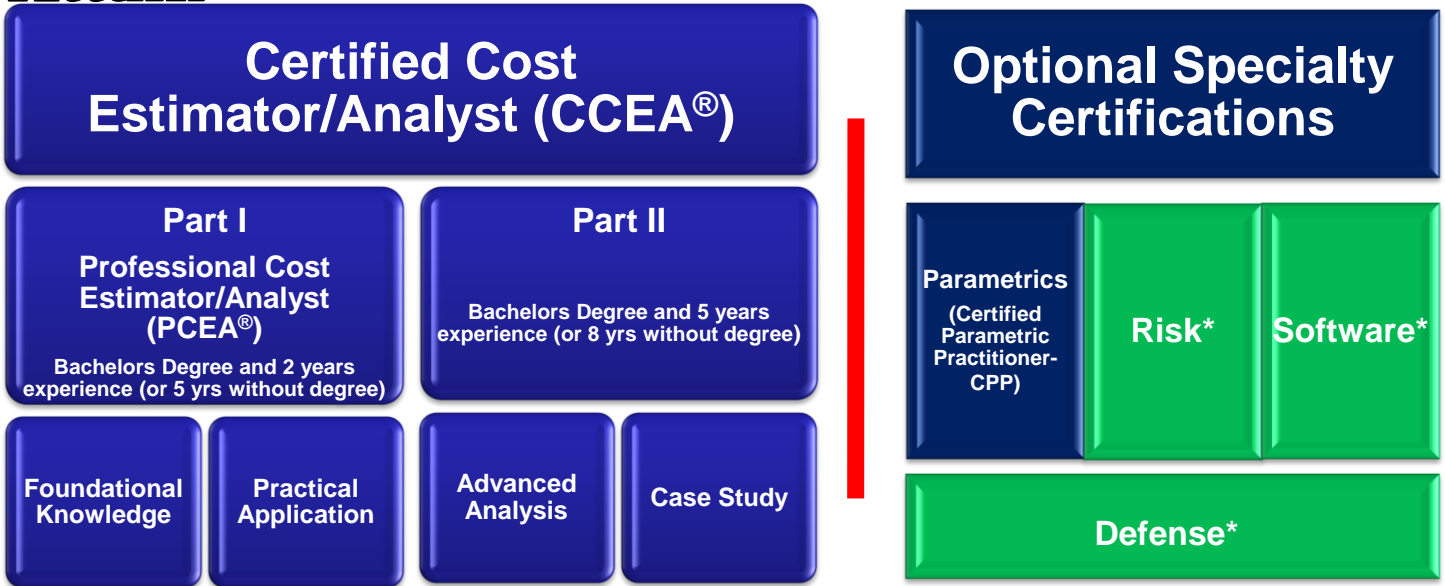
## Overview of Professional Certification Program

The Professional Certification Program is designed to offer members and non-members an opportunity to demonstrate their capabilities at various levels. Because cost estimating and analysis is a profession that combines the understanding of math and statistics principles with engineering, program management, procurement, budgeting and accounting disciplines, the mastery of cost estimating and analysis requires a solid foundation of cost knowledge woven together with a variety of cost experiences. The chart below depicts the entire ICEAA Professional Certification Program, comprised of a two-tier examination program that culminates with the CCEA® (Certified Cost Estimator/Analyst) designation, optional specialty designations, and a sustainment or recertification program that permits one to retain the CCEA® professional designation.

# Train

ICEAA	CEBoK® and Conferences	Parametric Handbook
Gov't	Handbooks, Guidance & OJT	Handbooks
Academic	Courses and Seminars	Text Books and Publications
Commercial	Handbooks, Guidance & Training	Training Courses

# Attain



# Sustain



Figure 1 ICEAA Certification Program

\* Proposed

## Certified Cost Estimator/Analyst (CCEA®) Certification

The CCEA® (Certified Cost Estimator/Analyst) examination has two parts. Its first part, if passed, authorizes the individual with a minimum of two years, but less than five years of experience to use the credential PCEA® (Professional Cost Estimator/Analyst), which validates that the individual has mastered the basic foundational knowledge and is aware and capable of performing basic cost applications. Its second part validates that the individual has mastered more complex cost applications and analyses and is able to evaluate and judge the quality of an estimate in context. The two parts of the examination combine to examine and assess an individual's cost knowledge, skills and abilities. It authorizes the individual to use the credential CCEA® when both parts are passed and the experience criteria of a minimum of five years of cost experience has been met. Because the two parts measure different degrees of cognitive knowledge and levels of experience, they each have different eligibility requirements. However, while the two parts measure different degrees of knowledge, the CEBoK® (Cost Estimating Body of Knowledge), which has been endorsed by ICEAA, provides a comprehensive training program to prepare for both parts of the exam. It will be the individual's preparation using CEBoK® and their own on-the-job experiences that will enlighten him or her enough to pass the second part of the examination.

Once the CCEA® is attained, the individual can use the CCEA® designation for five (5) years. The individual can 'recertify' for another five years by attaining a sufficient number of recertification points via the Recertification Program. The Recertification Program allocates points to individuals for participating in, contributing to, being actively employed in and/or attaining and sharing knowledge with the cost community. For more information on the recertification program, see page 33, the Recertification (Maintenance) Program.

### Professional Cost Estimator/Analyst (PCEA®) Designation

The Professional Cost Estimator and Analyst (PCEA®) certification examination may be taken after an individual meets the eligibility criteria (see page 7, Eligibility Requirements) and schedules the Part I examination (see page 29 for Administrative Information). The intent of this designation is to offer junior cost estimators a chance to validate their knowledge and show progression towards a CCEA®.

### Certified Cost Estimator/Analyst (CCEA®) Designation

The Certified Cost Estimator/Analyst (CCEA®) certification examination may be taken after an individual meets the eligibility criteria (see page 7, Eligibility Requirements) and schedules Part I and Part II of the examination (see page 29 for Administrative Information). The intent of this credential is to assure the individual and the employer of their mastery of cost estimating and analysis knowledge, skills, and judgment. It is not required that an individual possess the PCEA® before achieving the CCEA®. Those who do possess the PCEA® (i.e., have successfully passed the Part I examination in a prior sitting) need only complete Part II of the CCEA® examination to attain CCEA® status. Those who have not completed Part I prior to sitting for the CCEA® examination are encouraged to take both Parts I and II in a single sitting to attain the CCEA® designation.

## Program Standards

### Eligibility Requirements

To qualify for one of the designations/credentials below, an individual must meet the educational and experience requirements shown in Figure 2. Applicants are required to provide supporting documentation for their eligibility sufficient to demonstrate the validity of qualifications (see below for details).

Designation/Credential	Educational Requirement	Experience Requirement	Educational Exception
PCEA®	Bachelor's Degree in any field from an accredited college	Minimum of 2 years of cost experience but less than 5 years	If individual does not have a Bachelor's Degree, then must demonstrate 5 years of cost experience.
CCEA®	Bachelor's Degree in any field from an accredited college	5 years of cost experience	If individual does not have a Bachelor's Degree, then must demonstrate 8 years of cost experience.

Figure 2 Eligibility Requirements

It is important to note that those applying for the PCEA® because they do not meet CCEA® eligibility requirements have the opportunity to take the entire CCEA® examination (Part I and Part II). If they successfully pass both parts, they will be awarded the PCEA® immediately, and, upon reaching five years of cost experience, will automatically receive their CCEA®. If they fail Part I, they are only eligible to re-take Part I, regardless of Part II results. If they pass Part I but fail Part II, they receive the PCEA® designation but must wait until they have reached five years of experience before attempting Part II again. Furthermore, those who pass only Part I of the examination, and have five years of experience will not earn the PCEA®. They will earn credit for Part I and need only to retake Part II of the examination to attain CCEA® certification.

Applicants must provide a copy of diploma or transcripts to support their claims of educational accomplishments – formal or informal transcripts will serve to document course completion; diploma photocopies will serve to document degree attainments.

Applicants must also provide a resume or work history—verified by their employer—detailing their positions or titles, roles and responsibilities, dates and durations of assignments, and any products or outcomes the individual produced to assist in demonstrating and documenting evidence of work experience in a cost-related field.

See the ICEAA Website for more detailed information.



## The Body of Knowledge

A Body of Knowledge is a term most notably employed by professional organizations to represent the sum total of all knowledge in an area of expertise. A body of knowledge is usually made up of knowledge areas that represent the taxonomy of relevant concepts. The list of inclusive topics for the cost estimating and analysis body of knowledge crosses a multitude of disciplines at varying depths. In today's economy, being a cost estimator/analyst requires an individual to understand the strategic context for which a program has been designed down to the minute details of cost accounting techniques and data collection methods. The complexities of the profession put it at the crossroads of being an accountant, operations manager, engineer, statistician, mathematician and contractor, and culminate in the professional function of cost estimator/analyst.

Understanding the complexities of the cost profession, ICEAA, has developed a robust body of knowledge from which a cost estimator/analyst may draw from over the course of a cost career. The Cost Estimating Body of Knowledge (CEBoK®) encompasses a comprehensive perspective on cost estimating and analysis. It is from this Cost Estimating Body of Knowledge that all certification examinations will be founded. Each part of the CCEA® examination can now query the Body of Knowledge for the specific information, depth and/or breadth to determine the boundaries for testing at a particular level or for a particular subject.

### Background

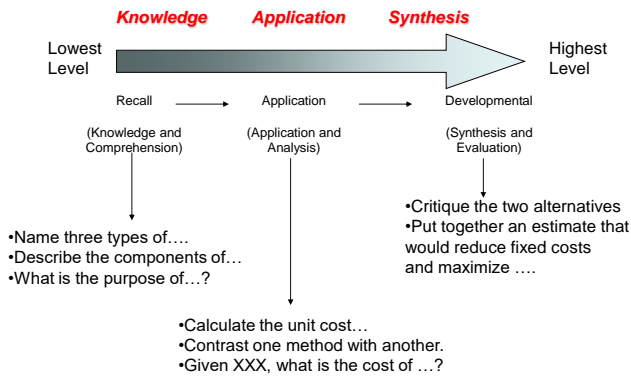
The 2006 SCEA Website Body of Knowledge was vetted through the SCEA Certification Working Group, a group comprised of senior leaders from a variety of companies across SCEA's membership, and other cost organizations like the Secretary of the Air Force Financial Management Cost and Economics (SAF/FMC) office, the Air Force Cost Analysis Agency (AFCAA), the Naval Center for Cost Analysis (NCCA) and the Assistant Secretary of the Army's Financial Management and Cost (ASA-FMC) office. After review and analysis, the reviewing group added and expounded on topics and organized a list of topics according to the CEBoK® titles that included more than 1100 topics from broad foundational knowledge to specific and advanced knowledge in areas like parametrics, risk analysis, and software cost estimating, to name a few.

By 2008, SCEA had developed what is now known as the Cost Estimating Body of Knowledge, which can be found on the ICEAA website.

### Cognitive Domain

There are three domains for knowledge: affective, psychomotor and cognitive. Testable knowledge resides in the cognitive domain. Using Bloom's taxonomy (see Figure 3 Cognitive Domain), SCEA reviewed both the CEBoK® and the bodies of knowledge of other relevant professions to generate the CCEA® examination Testable Topics List. To help the test taker, Figure 3 Cognitive Domain outlines commonly used verbs for each cognitive level, which progressively increase the depth and complexity of knowledge as you move from left to right.

## Levels in the Cognitive Domain



## Verbs for each level

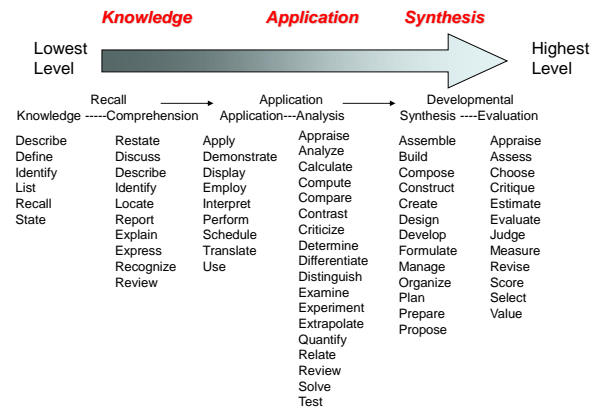


Figure 3 Cognitive Domain

## Testable Topics List

Please note that the Cost Estimating Body of Knowledge (CEBoK®) provides not only the topics, but the cognitive level or degree of understanding that is expected for certification. The Testable Topics list is comprised of 605 topics organized by the 16 modules of CEBoK®. In any given Part of the examination, an individual can expect to see at least one question from each module or topic area. The below cognitive categories: Foundational Knowledge, Practical Application, Advanced Analysis, and Case Study align with sections of the CCEA® examination. To understand what is expected of the individual for each section of the examination, the below definitions describe the levels to which an individual must prepare.

### Foundational Knowledge

Topics designated as Foundational Knowledge topics focus on an individual's awareness, understanding, and recognition of the topic itself and/or how the topic relates to the overall cost estimating process. An individual may be asked questions on the examination like:

- Name the three types of...
- Describe the components of...
- What is the purpose of...?
- Match the term to the correct definition.

### Practical Application

Topics designated as Practical Application topics focus on an individual's ability to apply concepts to numbers, situations, or events and to conduct simple analysis and calculations. An individual may be asked questions on the examination like:

- Given the following event/numbers/situation, which method would you apply?
- Given the following numbers, how would they be displayed IAW...?
- Given this event/situation, which technique would you recommend?
- Given the following numbers, what is the [mathematical term]?

## Advanced Analysis

Topics designated as Advanced Analysis focus both an individual's rote knowledge as well as knowledge learned on the job to analyze information to answer specific questions. An individual may be asked questions on the examination like:

- Given the following information, perform a [type of] analysis
- Differentiate between the two following methods/techniques
- Extrapolate...
- Quantify the amount of...
- Calculate the cost using...

## Case Study

Topics designated as Case Study topics focus on the array of knowledge from each topic area as they relate to real-world scenarios and contextual information. An individual may be asked questions on the examination like:

- In the case study, the analyst decided to use which method to analyze XXX?
- The analyst in the case study determined that the cost at T3 was \$40, is that correct? Which response below best describes your answer?
- Given the chart on page ##, did the analyst correctly use [insert technique]?
- Knowing that the inflation rate for year ### is XXX, did the analyst correctly determine the costs?

## The Testable Topics List

### Cost Estimating Basics

COST ESTIMATING BASICS	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Applications of Cost Estimating	X			
<i>Budgeting, Investment, and Planning</i>	X			
<i>Analysis of Alternatives (AoA)</i>	X			
<i>Economic Analysis</i>	X			
<i>Cost Benefits Analysis</i>	X			
<i>Business Case Analysis</i>	X			
<i>Contracting and Project Management</i>	X			
<i>Design and Trade-Off Decisions</i>	X			
Requirements for Cost Estimating	X			
Limitations of Cost Estimating	X			
Types of Cost Estimates		X		
<i>Life Cycle Cost Estimate (LCCE)</i>		X		
<i>Independent Cost Estimate (ICE)</i>		X		
<i>Budget Estimate</i>		X		
<i>Proposal Estimate</i>		X		
<i>Rough Order of Magnitude (ROM)</i>		X		
<i>Economic Analysis (EA)</i>		X	X	
<i>Analysis of Alternatives (AoA)</i>		X	X	
<i>Activity-Based Costing (ABC)</i>		X	X	
<i>Price-Based Acquisition estimates</i>		X		
<i>SORAP (Source of Repair) Analyses</i>		X		
<i>Logistics Support Analysis (LSA)</i>		X		
<i>Performance-Based Logistics (PBL)</i>		X		
Cost Estimating Inputs and Products	X			
Requirements Documents	X			
<i>Capabilities Development Document (CDD)</i>	X			
Technical Baseline Description	X			
<i>Technical Baseline Description</i>	X			
<i>Proposals</i>	X			
<i>Request for Information (RFI)</i>	X			
<i>Estimate Documentation</i>	X			
Work Breakdown Structure (WBS) Development	X			X
<i>WBS and Cost Element Structure (CES)</i>	X			X
Program/System Baseline Definition	X			X
Data Collection, Normalization, and Analysis	X			
Cost Element Methodology	X			
Estimate Development and Validation	X			
<i>Regression Analysis</i>	X			
<i>Risk Analysis</i>	X			

COST ESTIMATING BASICS	CCEA®			
TOPIC	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
<i>Time Phasing</i>	X			
<i>Cross-Checks</i>	X			
Results and Report Generation	X			
<i>Estimate Reconciliation</i>	X			
<i>Informal Reviews</i>	X			
<i>Formal Reviews</i>	X			
Acquisition	X			
<i>Milestone decisions</i>	X			
<i>Contracting</i>	X			

### *Costing Techniques*

COSTING TECHNIQUES	CCEA®			
TOPIC	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Costing Techniques	X			
Analogy		X	X	X
<i>Method</i>	X			
<i>Application</i>	X	X	X	
<i>Scaling/Adjustment</i>		X	X	
<i>Advantages and Disadvantages</i>	X			
<i>Quantification of Uncertainty</i>		X	X	
Parametric		X		
Build-Up		X		
Life Cycle Cost Elements	X			
<i>Adequacy of program definition</i>	X			
<i>Availability of data</i>				X
Top-Down vs. Bottom-Up Approaches	X			
Cost Element Structure (CES)	X			
Calibration	X	X		
Comparison of Techniques				X
Schedule Estimating and Time Phasing	X	X	X	X
Adjusting Analogies	X	X	X	

### Parametric Estimating

Parametric Estimating	CCEA®				
	TOPIC	Part I or PCEA®		Part II	
		Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Parametric Estimating Concepts	X				
Slope	X	X	X		
Parametric Estimating Process	X				
Cost Driver Identification	X	X	X	X	
<i>Cost Drivers</i>	X			X	
<i>Proxy Variables</i>		X	X	X	
<i>Dummy Variables</i>	X	X	X	X	
Cost Estimating Relationship (CER) Development		X	X		
<i>Rates, Factors, and Ratios</i>		X	X		
<i>Regression</i>	X	X	X	X	
<i>Calibration</i>		X	X		
Parametric Model Development		X	X		
<i>Validation of Parametric Inputs</i>		X	X	X	
<i>Cost Response Curves (CRCs)</i>		X	X		

### Data Collection and Normalization

Data Collection and Normalization	CCEA®				
	TOPIC	Part I or PCEA®		Part II	
		Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Data Collection Process	X			X	
Data Collection Techniques	X			X	
Data Collection Issues	X			X	
Contextual Completeness		X	X		
Availability		X	X		
Accessibility		X	X		
Validity		X	X		
Timeliness		X	X		
Sampling / Measurement Error		X	X		
Data Normalization	X				
Cost Units		X	X		
<i>Inflation</i>		X	X		
<i>Overhead Changes</i>		X	X		
<i>Non-Recurring vs. Recurring Cost</i>		X	X		
<i>Direct vs. Indirect Cost</i>		X	X		
<i>Direct Labor</i>		X	X		
<i>Material Costs</i>		X	X		
<i>Overheads</i>		X	X		
<i>Fringe</i>		X	X		
<i>General and Administrative (G&amp;A)</i>		X	X		

<b>Data Collection and Normalization</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
<i>Profit/Fee</i>		X	X	
Cost Accounting Systems and Standards	X			X

*Index/Inflation*

<b>Index/Inflation</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
Inflation and Cost Estimating				X
Inflation Concepts and Definitions	X			
Inflation and Escalation	X	X	X	
Escalation vs. Discounting	X	X	X	
Index Numbers	X	X	X	
Current-Year dollars	X	X	X	
Constant-Year dollars	X	X	X	
Then-Year (budget-year) dollars	X	X	X	
Base-Year dollars	X	X	X	
Inflation Indices	X	X	X	X
Raw indices		X	X	
Composite Indices		X	X	
<i>Weighted Average</i>		X	X	
Inflation Procedures	X	X	X	X
Index Tables		X	X	
<i>Shifting Base Year of tables</i>		X	X	
Inflation Procedure Mnemonic		X	X	
CY\$ to CY\$		X	X	
CY\$ to TY\$		X	X	
TY\$ to CY\$		X	X	
TY\$ to TY\$		X	X	
Consumer Price Index (CPI) and Commercial Indices		X	X	X
Time Phasing and Inflation		X	X	X

*Basic Data Analysis Principles*

Basic Data Analysis Principles TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Types of data	X			X
Quantitative	X	X	X	
<i>Univariate</i>		X	X	
<i>Bivariate</i>		X	X	
<i>Multivariate</i>		X	X	
<i>Time Series</i>		X	X	
Qualitative	X			
Univariate Visual Display of Data	X			X
Histograms		X	X	
Box plots	X			
Stem-and-leaf plots	X			
Pie charts	X			
Univariate Descriptive Statistics		X	X	X
Measures of Central Tendency	X			X
<i>Mean</i>		X		X
<i>Median</i>		X		X
<i>Mode</i>		X		X
Measures of Dispersion	X			X
<i>Range</i>	X			
<i>Variance</i>				X
<i>Standard Deviation</i>				X
<i>Coefficient of Variation (CV)</i>				X
Univariate Inferential Statistics	X	X	X	X
t test for means			X	X
Chi-Square and K-S tests for distribution			X	X
Bivariate Visual Display of Data	X	X		
Scatter plots	X			
<i>Variables</i>				X
<b>Cost vs. time</b>				X
<b>Cost vs. parameter</b>				X
<b>Cost vs. cost</b>				X
<i>Function types</i>	X			X
Data Validation				X
Outliers		X	X	X
Other types of analysis	X			
Time series analysis		X		
Non-parametric analysis		X		
Systems of simultaneous equations		X	X	



*Learning Curve*

Learning Curve TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Learning Curve Theory	X			X
Learning Curve Concepts	X	X		
<i>Slope</i>		X	X	
<i>Theoretical First Unit (T1)</i>		X	X	
<i>100th Unit Cost ???</i>		X	X	
<i>Equation</i>		X	X	
Learning Curve Data	X	X	X	
<i>Unit Cost Data</i>		X	X	
<i>Cumulative Cost Data</i>		X	X	
<i>Cumulative Average Cost Data</i>		X	X	
<i>Unit with Rate</i>		X	X	
<i>Lot Data</i>		X	X	
Cumulative Average Learning Curve Theory (CUMAV)	X	X	X	
Unit Learning Curve Theory (ULC)	X	X	X	
Lot Data and Lot Midpoints (LMP)	X	X	X	
Learning Curve Application	X	X	X	X
Choosing a Learning Curve Theory		X		
Fitting a Learning Curve			X	
Learning Curves for New Programs			X	
<i>Learning Curves During the First Few Units</i>			X	
Factors Affecting Slope		X		
Advanced Topics				X
Production Rate Effects	X			
<i>Learn-rate curves</i>		X	X	
<i>Fixed cost curves</i>		X	X	
Production Break Effects	X	X	X	
<i>Break Point</i>		X	X	
<i>Andelohr</i>		X	X	
New Work Effects	X	X	X	
Quantity As an Independent Variable (QAIV)	X	X	X	
Prototypes and Step-Up/Step-Down Factors	X			

*Regression Analysis*

Regression Analysis TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Linear Relationships	X			
Correlation	X	X	X	
Causation	X			
Types of Models	X			
General Linear Model	X	X	X	X
Linear Regression	X	X	X	X
Assumptions for Linear Regression Models	X			
Finding the Equation		X	X	
<i>Residual Analysis</i>		X	X	
<i>Cook's Distance Measure (Identify Influential Observations)</i>		X	X	
Goodness of Fit	X	X	X	
<i>Analysis of Variance (ANOVA)</i>	X	X	X	
<b>SSR</b>		X	X	
<b>SSE</b>		X	X	
<b>SST</b>		X	X	
<i>Uncertainty</i>		X	X	
<b>Standard Error</b>		X	X	
<b>Coefficient of Variation (CV)</b>		X	X	
<i>Statistical Significance</i>		X	X	
<b>Significance Level</b>		X	X	
<b>t statistic</b>		X	X	
<b>F statistic</b>		X	X	
<b>Mean Square Error (s-squared or MSE)</b>		X	X	
<i>Explained Variation</i>		X	X	
<b>R-squared</b>		X	X	
Confidence Intervals	X	X	X	
<i>Prediction Intervals</i>		X	X	
<i>Point Estimation</i>		X	X	
<i>Small Sample Size Considerations in Regression Analysis</i>				X
Non-linear Models	X	X	X	X
Multivariate Regression Analysis	X	X	X	X
Least Squares Method		X	X	
Adjusted R-squared		X	X	
Multicollinearity		X	X	
<i>Signs of Multicollinearity</i>		X	X	
<i>Tests for Multicollinearity</i>		X	X	
Selecting the Best Model		X	X	X
Selecting "Within Type"		X	X	
Selecting "Across Type"		X	X	
Generalized Least Squares		X	X	

## Cost Risk Analysis

Cost Risk Analysis TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Risk Definitions	X			
Risk Process	X	X		X
Risk and Uncertainty	X			X
Relationship between Risk and Cash Flow	X			
Relationship between Risk and Profit	X			
Risk Management Structure				X
Risk Assessment	X			
Risk Analysis and Sensitivity Analysis		X	X	
Risk Handling	X			
Risk Sources and Responsibilities	X			X
Cost Growth	X			
Cost Growth Causes	X			
Cost Growth Allowances		X	X	
Types of Cost Risk	X			X
Supportability Risk				X
Cost Estimating Risk	X			
Schedule/Technical Risk	X			
Historical Cost Growth	X			
Variations Risk Distributions w/Impacts				X
Triangles, Weibull, lognormals, and normals		X	X	
Risk Analysis vs. Sensitivity Analysis	X	X	X	
Independence and Cost Realism	X			X
Risk and EVM		X	X	
Predicting EAC		X	X	
Methods and Techniques				X
Bottom-up Approach	X			
Top Down Approach	X			
Schedule Risk Analysis	X	X	X	
Monte Carlo/Hyperlatin Cube	X	X	X	X
Decision Tree Analysis	X	X	X	X
Size Adjustments				X
Risk Adjusted Net Present Value		X	X	
Adjusting for Total Project Risk	X	X	X	X
Payback Approach	X	X	X	
Simulation Analysis	X	X	X	
Sensitivity Analysis	X	X	X	
Risk Adjusted Discount Rate Approach	X	X	X	
Functional, Relational, and Injected Correlation	X			
Risk Model Architecture		X	X	X
Decision Process and Modeling				X
Applying uncertainty to cost elements				X

<b>Cost Risk Analysis</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
Selecting Distributions				X
Inputs – Scoring/Parameters		X	X	
Inputs – Dollar Basis/Forecasting		X	X	
Structure – Organization		X	X	
<i>Coverage and Partition</i>		X	X	
<i>Assigning Cost to Risk</i>		X	X	

*Probability and Statistics*

<b>Probability and Statistics</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
Sampling Techniques	X			
Hypothesis Testing	X	X	X	
Probability Density Functions	X	X	X	
Probability Theory	X			
Expectation of a Random Variable	X	X	X	
Standard Deviation of a Random Variable	X	X	X	
Covariance and Correlation of a Random Variable	X	X	X	
Mean, Median, Mode, Range	X	X	X	
Cumulative Distribution Function	X	X	X	
Types of Distributions	X			X
<i>Normal</i>	X	X	X	X
<i>Student T</i>	X	X	X	X
<i>Lognormal</i>	X	X	X	X
<i>Chi Square</i>	X	X	X	X
<i>F</i>	X	X	X	X
<i>Triangular</i>	X	X	X	X
<i>Uniform</i>	X	X	X	X
<i>Beta</i>	X	X	X	X
<i>Gamma</i>	X	X	X	X
<i>Weibull</i>	X	X	X	X
<i>Exponential</i>	X	X	X	X
<i>Other Common Distributions</i>	X			X
Discrete Distributions	X			X
<i>Bernoulli</i>	X			X
<i>Binomial</i>	X			X
<i>Poisson</i>	X			X
<i>Geometric</i>	X			X
Relationships between Distributions	X			
Hypothesis Testing	X	X	X	X
Null Hypothesis and Alternative Hypothesis	X	X	X	
One-Tail vs. Two-Tail Tests	X	X	X	

Probability and Statistics	CCEA®				
	TOPIC	Part I or PCEA®		Part II	
		Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Statistical Significance	X	X	X		
Type I and Type II Errors	X	X	X		
Test Statistic		X	X		
Critical Value		X	X		
P-Values		X	X		
Confidence Intervals	X	X	X		
Statistical Tests	X	X	X	X	
t test	X	X	X		
<i>One-sample</i>	X	X	X		
<i>Two-sample</i>	X	X	X		
Chi Square test	X	X	X		
F test	X	X	X		
k-Sample test for means	X	X	X		
Kolmogorov-Smirnov goodness of fit	X	X	X		
Related Topics					
Probability	X	X	X		
<i>Simulation</i>	X				
<b><i>Discrete-Event</i></b>	X				
<i>Time Series Analysis</i>		X	X		
<b><i>Moving Average</i></b>		X	X		
<b><i>Weighted Moving Average</i></b>		X	X		
<b><i>Exponential Smoothing</i></b>		X	X		

*Manufacturing Cost Estimating*

Manufacturing Cost Estimating	CCEA®				
	TOPIC	Part I or PCEA®		Part II	
		Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Absorption Costing	X			X	
Burden	X			X	
Cost Center	X			X	
Differential Cost	X			X	
Fixed Cost	X			X	
Forward Pricing	X			X	
Incremental Cost	X			X	
Job Order Costing	X			X	
Marginal Cost	X			X	
Performance Factors	X			X	
Process Costing	X			X	
Variable Cost	X			X	
Composite Labor Rates	X	X	X	X	
Non-Recurring	X			X	
<i>Tooling</i>	X				
<i>Test Equipment</i>	X				
<i>Facilities</i>	X				
<i>Production Set-Up</i>	X				
Recurring	X			X	
<i>Labor</i>		X	X		
<i>Material</i>		X	X		
Overhead / Indirect / Capital Expenditures		X	X	X	
<i>Overhead</i>		X	X		
<i>Fringe</i>		X	X		
<i>General and Administrative (G&amp;A)</i>		X	X		
<i>Cost of Money (COM)</i>		X	X		
<i>Fee</i>		X	X		
Labor Estimating	X			X	
Time Standards	X				
Personal Fatigue & Delay	X				
Support Labor	X				
Labor Concerns	X				
<i>Learning Curve</i>	X	X	X		
<i>Production Breaks</i>	X	X	X		
<i>Green Labor</i>	X				
<i>Process Improvements</i>	X				
<i>Equipment Utilization Rate</i>	X				
<i>Make or Buy</i>	X				
Rates Estimating	X				
Material Estimating	X			X	
Material Costs	X				

<b>Manufacturing Cost Estimating</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
<i>Raw Material</i>	X			
<i>Purchased Parts</i>	X			
<i>Subcontractor Costs</i>	X			
Types of Material	X			

### *Software Cost Estimating*

<b>Software Cost Estimating</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
Software Development Process	X			X
Comparison to Hardware	X			
Cost Drivers	X			X
Size	X			X
Source Lines Of Code (SLOC) (New, Modified, Re-used, auto-generated)	X			X
<b>Code Reuse and Equivalent SLOC (ESLOC)</b>	X	X	X	X
<b>Equivalent Source Lines of Code (ESLOC)</b>	X	X	X	
<b>SLOC Growth</b>	X			
<b>How to capture effort on a project</b>		X	X	X
<b>Productivity</b>		X	X	X
<b>The elements of a complete development effort (SM, Requirements, Cost Unit Test, CSCI to CSCI test and integration, QM QA, Overall system integration and test, etc)</b>	X			
Function Points	X	X	X	
Object Points	X			
Complexity	X			
Capability	X	X	X	
Schedule (Dr. Boehm's basic predicting equations)	X	X	X	
SW Maintenance	X			
Industry Rules of Thumb	X			
Life Cycle Methodologies	X			X
<i>Waterfall</i>	X			
<i>Incremental</i>	X			
<i>Evolutionary</i>	X			
<i>Spiral</i>	X			
Estimating Techniques Applied to Software	X	X	X	
Industry Standards/Rules of Thumb	X	X	X	X

### *Economic Analysis*

<b>Economic Analysis</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>

Economic Analysis TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Discounted Dollars	X	X	X	
Economic Life	X	X	X	
Opportunity Cost	X	X	X	
Present Value of Money	X	X	X	
Time Value of Money	X	X	X	
Breakeven Analysis	X			X
Cost-Benefit Analysis	X			X
Discounting and Capital Budgeting	X			X
Principles of Economic Analysis (EA)	X			
Definition and Purpose	X			X
<i>Economic Life Cycle</i>	X			X
<i>Period of Analysis</i>	X			
<i>Type of Dollars</i>	X			
<b>Constant Dollars</b>		X	X	
<b>Current Dollars</b>		X	X	
<i>Base Year</i>		X	X	
Costs	X			
<b>LCC</b>	X			
<b>Opportunity costs</b>	X			
<b>Status Quo phase-out costs</b>	X			
<b>Sunk costs</b>	X			
<b>Wash costs</b>	X			
Benefits	X			
Compare and Rank Alternatives			X	X
Time Phasing		X	X	
<i>Base year v. Current year</i>		X	X	
<i>Compound V. composite rates</i>		X	X	
Inflation		X	X	
Discounting		X	X	
<b>Present Value</b>		X	X	
<b>Real Discount Rates</b>	X			
<b>Nominal Discount Rates</b>	X			
<b>Discount Factors (mid-year and end-of-year)</b>	X			
Comparison Techniques		X	X	
<b>Net Present Value (NPV)</b>		X	X	X
<b>Uniform Annual Cost (UAC)</b>		X	X	
<b>Benefit/Cost Ratio (B/CR)</b>		X	X	
<b>Savings/Investment Ratio (SIR)</b>		X	X	
<b>Payback Period Analysis</b>		X	X	
<b>Return on Investment (ROI)</b>		X	X	
<b>Benefit to Investment Ratio (BIR)</b>		X	X	
<b>Break-Even Analysis</b>		X	X	
Test Sensitivity of Alternative Rankings				X



### Contract Pricing

Contract Pricing TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Allowable Costs	X			X
Ceiling Price	X			X
Fee	X			X
Not-to-Exceed Cost	X			X
Profit		X	X	X
Revenue	X			X
Contract End Items		X		X
Fixed Price		X	X	X
<i>Firm Fixed Price (FFP)</i>		X	X	
<i>Fixed Price Incentive (FPI)</i>		X	X	
<b><i>Firm and Successive Targets</i></b>		X	X	
<b><i>Ceiling Price</i></b>		X	X	
<b><i>Point of Total Assumption (PTA)</i></b>		X	X	
<b><i>Share Ratios</i></b>		X	X	
Cost Plus		X	X	X
<i>Cost Plus Award Fee (CPAF)</i>		X	X	
<i>Cost Plus Incentive Fee (CPIF)</i>		X	X	
<b><i>Minimum and maximum fee</i></b>		X	X	
<i>Cost Plus Fixed Fee (CPFF)</i>		X	X	

### Earned Value Management

Earned Value Management TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
EVMS Purpose and Benefits	X			
EVM Components	X			X
Integrated Baseline	X			
<i>Resource-Loaded Schedule = Time-Phased Budget</i>	X			
<i>Work Breakdown Structure (WBS)</i>	X			
<i>Organizational Breakdown Structure (OBS)</i>	X			
<i>Performance Measurement Baseline (PMB)</i>	X			
<i>Management Reserve (MR)</i>	X			
<i>Contract Budget Base (CBB)</i>	X			
Earned Value Data Elements	X			X
<i>Planned Value (PV) = Budgeted Cost of Work Scheduled (BCWS)</i>		X	X	
<i>Earned Value (EV) = Budgeted Cost of Work Performed (BCWP)</i>		X	X	
<i>Actual Cost (AC) = Actual Cost of Work Performed (ACWP)</i>		X	X	
<i>Budget At Complete (BAC)</i>		X	X	

Earned Value Management TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
<i>Latest Revised Estimate (LRE)</i>		X	X	
<i>Cost Variance (CV)</i>		X	X	
<i>Schedule Variance (SV)</i>		X	X	
<i>Estimate At Complete (EAC)</i>	X			
<i>Variance At Complete (VAC)</i>	X			
<i>To-complete Cost Performance Index (TCPI)</i>	X			

### Cost Management

Cost Management TOPIC	CCEA®			
	Part I or PCEA®		Part II	
	Foundational Knowledge	Practical Application	Advanced Analysis	Case Study
Design-to-Cost	X			
Design of Experiment	X			
Measures of Effectiveness	X			X
Cost-Effectiveness Analysis	X			X
Cost-Performance Tradeoff Analysis	X			X
Objectives of Cost Management	X			
Total Ownership Cost (TOC)	X			X
Life Cycle Costing	X			
Linked Indirect Costs	X			
TOC Reduction and Cost Management	X			
Cost As an Independent Variable (CAIV)		X	X	X
CAIV Definition	X			
Cost/Performance Trades	X			
<i>Linkage</i>	X			
<i>Exchange Rate</i>	X			
<i>Dominance</i>	X			
<i>"Bang for the buck"</i>	X			
Role of Cost Estimating	X			
<i>Performance Estimating Relationships (PERs)</i>	X			
Target Costing	X			
Evolution of Target Costing	X			
Target Costing Definition	X			
<i>Price led</i>	X			
<i>Customer focused</i>	X			
<i>Design centered</i>	X			
<i>Cross functional</i>	X			
<i>Life-cycle oriented</i>	X			
<i>Value-chain based</i>	X			
Target Costing vs. CAIV		X	X	
Target Costing Tools	X			
Benefits of Target Costing	X			

<b>Cost Management</b>	<b>CCEA®</b>			
<b>TOPIC</b>	<b>Part I or PCEA®</b>		<b>Part II</b>	
	<b>Foundational Knowledge</b>	<b>Practical Application</b>	<b>Advanced Analysis</b>	<b>Case Study</b>
Activity Based Costing (ABC)		X	X	X
ABC Model		X	X	
<i>Resources</i>		X	X	
<i>Activities</i>		X	X	
<i>Outputs (Cost Objects)</i>		X	X	
ABC and Activity-Based Management (ABM)		X	X	

# Certification Examination Specifications

## Certified Cost Estimator/Analyst (CCEA®) Examination

The CCEA® (Certified Cost Estimator/Analyst) examination has two parts. Part I tests Foundation Knowledge and Practical Application. Applicants who successfully pass Part I and have at least two but less than five years of experience in the cost field will receive the Professional Cost Estimator/Analyst (PCEA®) designation. Part II tests Advanced Analysis and provides a Case Study. Applicants who successfully pass Part I and Part II receive the Certified Cost Estimator/Analyst (CCEA®) designation upon completion of all eligibility requirements.

Part I or PCEA®

### Part I

Part I consists of 60 multiple choice questions worth 1 point each. The applicant must pass Part I of the examination with an overall score of 70% or greater to receive credit for the examination or attain the PCEA® Designation if the above eligibility criteria are met.

### Part II

Part II tests Advanced Analysis knowledge as well as knowledge applied in a Case Study. Part II consists of 48 multiple choice questions worth 1 point each and 2 short-answer questions worth 2 points each. The applicant must pass Part II of the examination with an overall score of 70% or greater to receive credit for the examination. To attain the CCEA® designation, the applicant must pass both Parts I and II with scores of 70% or greater on each part and meet the requisite eligibility requirements.

## Administrative Information

### Applying for the Examination

#### To apply for an examination:

- Visit the ICEAA Website at <http://ICEAAonline.org>
- Complete the Certification Application, including:
  - Selection of the desired segment(s) of the Examination (Part I/PCEA®, Part II, or entire CCEA®)
  - Selection an Examination Date and Location
  - Eligibility documentation (preferably PDF versions of transcript and resume)
- Submit your method of payment (Check or Credit Card-Visa, American Express or Master Card)
  - Cost of Examination:

CCEA® Examination	Members, Military and Government Non-Members	Non-Members	Retake Fees
Part I/PCEA®	\$150.00	\$275.00	\$ 65.00
Part II	\$150.00	\$250.00	\$ 75.00
Part I and Part II Combined	\$300.00	\$475.00	\$115.00

- Refund Policy: ICEAA reserves the right to charge a \$50.00 administrative fee should an applicant withdraw their application prior to the examination date, failing to take the examination at the appointed time, or failing to meet the examination eligibility requirements. The applicant may ask ICEAA to apply the fee credit to a subsequent examination rather than to make a refund.

Within 24 hours the applicant will receive an e-mail notification that the request has been received and within 2 weeks will receive confirmation of the examination date and location.

### Reporting the Examination

Once the applicant has taken the examination, they will be notified via e-mail of either a passing or failing grade. Statistical information (e.g., questions that were answered incorrectly, number of years experience of the applicant, applicant's score, amount of self-reported preparation or study prior to the exam) may be reported to the ICEAA Board of Directors and Director of Certification to enable ICEAA to improve the examination content and its procedures.

### Examination Failure and Retake Policy

If the applicant has less than 5 years of experience, and takes only Part I (PCEA®) of the examination, they may retake Part I as often as desired until achieving a passing grade and the PCEA® designation. The applicant will be charged for each retake of the examination.

If the applicant has less than 5 years of experience and takes the entire CCEA® examination (i.e., Part I and Part II), and fails Part II only, they will be awarded the PCEA® designation immediately, but cannot retake Part II until the 5-year cost experience eligibility requirement is met.

If the applicant has less than 5 years of experience and takes the entire CCEA® examination (i.e., Part I and Part II), and fails both parts, they cannot take Part II until the 5-year cost experience eligibility requirement is met. The applicant may retake Part I of the examination Part I as often as desired until achieving a passing grade and the PCEA® designation.

If the applicant meets the eligibility requirements for the CCEA® (e.g., has more than 5 years of cost experience) and takes the entire CCEA® examination (i.e., Part I and Part II), and fails any Part, they may retake the failed Part only up to three times without passing before having to retake the entire examination again.

The procedures to apply for retakes of any or all Parts of the examination are identical to those for the initial application and are indicated in the Applying for the Examination section on page 29.

### ***Contesting a Question***

If at any time during the testing process you would like to contest the wording or validity of a question, you may do so by writing to the ICEAA International Business Office (see contact information on page 34), Attn: Director of Certification and indicate the examination Part, the examination date, question number, and issue with the question. The Director of Certification will review your request and respond in writing with a solution or resolution. If you are not satisfied with the response, you may elevate the request to the ICEAA Board of Directors.

### ***Information and Privacy Policy***

Any personal information provided throughout the course of the examination will be strictly kept confidential and used only to correctly assign professional designations within the ICEAA International Business Office.

## Training Resources

Training is the most critical component of the cost career field. Without thorough training at all levels, it would be difficult to understand the breadth and depth of knowledge and skills required to generate quality cost estimates and nearly impossible to keep up with the continual updates in the profession. In recent years, SCEA had endorsed the creation of CostPROF, which is an excellent cost training guide. However, with the expansive changes to the cost certification program and an increased need for better training materials to prepare for the CCEA®, CEBoK® has been developed to provide a comprehensive and authoritative reference tool for cost estimators. The foundations of CEBoK® and the initial development of the improved CCEA® examination share common ground in covering the same Testable Topics List derived from the ICEAA Body of Knowledge. Therefore, utilizing CEBoK® to its fullest potential will enable cost estimators to best understand the foundational knowledge and practical applications of cost and, when combined with actual cost experience, will best enable an individual to pass both the Professional Cost Estimator and Analyst (PCEA®) and the Certified Cost Estimator and Analyst (CCEA®) exams.

### Recommended Preparation Steps

#### ICEAA Endorsed Training- CEBoK®

Your first step in preparing for the exam is to visit the ICEAA Certification website at <http://ICEAAonline.org/cert> to understand the exam, time and knowledge requirements. A study guide is provided to help prepare you, but ICEAA recommends that you take advantage of the training resource, CEBoK®, to prepare you for the PCEA® and CCEA®.

It is recommended that you begin preparing for the exam at least three months prior to your exam date and address the topics found within each CEBoK® module. Understanding each module will be invaluable to the test-taker. Although the exam does not take questions directly from CEBoK®, CEBoK® covers the breadth of cost material that will be addressed in the exam to the topic and cognitive degree and no other resource is as closely aligned to the PCEA® and CCEA® as is CEBoK®.

#### Alternative Sources of Training

The ICEAA Annual Conference and Training Workshops are an excellent introduction for those new to the profession or experienced individuals needing a refresher. They can provide a firm basis for further study and on-the-job training guidance. The Training Workshops are organized in three tracks – Fundamentals, Practitioner, and Integration. The Fundamentals Track draws directly from CEBoK® training modules. For candidates planning to sit for the certification exam, the Training Workshops offer a good opportunity to review their basic skills and establish a study program prior to sitting for the examination. The subject areas are taught by recognized practitioners in their field and total more than thirty classroom hours of instruction. Continuing Education Units (CEUs) are awarded to Training Workshop attendees.

Many ICEAA Chapter organizations conduct annual cost training programs as both refresher courses and specifically for individuals seeking certification. To find out if a local ICEAA chapter is offering relevant training, consult the Chapter section of the ICEAA web site which will provide local training information and/or contact information for chapter officers.

While the CCEA® will test not only your knowledge from academic and training material, it will also test your knowledge learned through experience from on the job. Therefore, it may be helpful to locate someone who has already taken the exam; ask them what the exam was like and how to best prepare for it. They will give you the best opportunity to avoid “sticker shock” on exam day.



## Recertification (Maintenance) Program

As with any educational and training program, without proper maintenance or refresher experiences and/or courses, the knowledge learned quickly atrophies. Therefore, it is essential as a profession that the cost community provides ways and means to retain its cost knowledge and share learned perspectives, methods and techniques. ICEAA has revamped its recertification program to value cost experience, knowledge sharing and attainment, and participation in and service to the Society.

The award of CCEA® designation is valid for a five year duration. Once an individual achieves their CCEA®, they may sustain that designation by participating in the Recertification Program, which is a program that assigns point to certain activities described in appendix A.

## Contact Information

For questions pertaining to the Certification Program and the PCEA® or CCEA® exams, please refer to the ICEAA website at:  
<http://www.ICEAAonline.org/>

Or contact us directly:

### **ICEAA International Business Office**

8221 Old Courthouse Road

Suite 106

Vienna, VA 22182

Email:

[ICEAA@ICEAAonline.org](mailto:ICEAA@ICEAAonline.org)

Phone:

703-938-5090

Fax

703-938-5091

Office hours: 8:30am -5:00pm ET, Monday to Friday

## Appendix A- Recertification Program



International Cost Estimating  
and Analysis Association

### APPLICATION FOR RECERTIFICATION THROUGH ACCUMULATION OF POINTS

This submission is for the period from \_\_\_\_\_ (DD/MM/YYYY) through \_\_\_\_\_ (DD/MM/YYYY).

Name of Candidate: \_\_\_\_\_

Last Certification: \_\_\_\_\_ CCEA® # \_\_\_\_\_ Email Address: \_\_\_\_\_

Current Title: \_\_\_\_\_ Daytime Phone \_\_\_\_\_

Company: \_\_\_\_\_

Your Mailing Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Complete this form to report all points you have earned for the 5-year period from your date of certification. Reproduce and keep a copy for your records and send the original along with the recertification fee of \$125.00 for members and for military and government nonmembers; and \$250.00 for other non-members to Director of Certification, ICEAA, 8221 Old Courthouse Road, Suite 106, Vienna, VA 22182.**

Continued certification as a Certified Cost Estimator/Analyst (CCEA®) by the International Cost Estimating and Analysis Association can be achieved by testing or by a combination of experience, knowledge attainment and/or sharing and participation in the cost community and their associations. **This form** is to be used by current certification holders who are applying for recertification on the basis of points earned. Unoriginal forms and submissions that are disorganized, lacking proper substantiation, spanning more than a 5-year period, or covering the incorrect 5-year period will be returned to sender for rework and resubmission. Recertification every five years is required to maintain your certification. A minimum of 30 points is required for continued certification without taking the test. The Director of Certification will make final decisions on the points allowed.

**List only programs and activities that have occurred during the five year period from your date of certification. It is important that all relevant information be completed on this form and evidence provided as requested.**

#### FOR ICEAA USE ONLY. DO NOT WRITE IN THIS SECTION

PROFESSIONAL EVALUATION TOTAL POINTS CLAIMED \_\_\_\_\_  
TOTAL POINTS ALLOWED \_\_\_\_\_

RETURNED FOR ADDITIONAL INFO \_\_\_\_\_  
(Date)  
NAME DATE

REVIEWED BY: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ACTION COMPLETED \_\_\_\_\_

The Recertification Committee has identified a wide variety of educational endeavors and leadership activities through which recertification qualification can be identified. These programs and activities are listed by category. The Committee will continuously review other programs and activities to identify those which, in its judgment, merit inclusion.

**I. PROFESSIONAL EXPERIENCE POINTS**

Experience in cost related employment.

Employer	Title	From	To	3/Year
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	

Include a one paragraph job description for each entry on an attached sheet

**II. PARTICIPATION AND AWARD POINTS**

**A. Active Membership in Cost Estimating & Analysis Organizations**

1/Year

From (Mo/Yr)	To	Organizations
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**B. Leadership Positions In Cost Estimating and Analysis Organizations**

Attach statement by appropriate National, Regional or Chapter President/Chairperson attesting to your service.

**1. National Level: Executive Board Member, Board of Directors, President, Regional VP/Director, or Committee Chair or Regional Director**

3/Year

Organization	Dates of Meetings Attended
_____	_____
_____	_____

**2. Chapter Level: President, Chapter Officer or Committee Chair Officer**

2/Year

Years	Organization
_____	_____
_____	_____

**3. Committee Member National/Region/Chapter**

1/Year

Years	Organization
_____	_____
_____	_____

**4. Participation/Service to Society Roles Service**

.5/Year

Date	Comment
_____	_____

**C. Awards for Outstanding Contributions in Cost Estimating/Analysis**

Attach a copy of each citation or award for evaluation by the Recertification Committee.

**1. National Award from Cost Estimating and Analysis Association Award**

3/Award

Date Presented
_____
_____

**2. Local Cost Estimating and Analysis Association Chapter Award**

2/Award

Chapter	Date
_____	_____
_____	_____

**3. Awards from Other Professional Organizations related to Cost Estimating or Analysis**

1/Award

### III. KNOWLEDGE ATTAINMENT AND SHARING POINTS

#### A. KNOWLEDGE ATTAINMENT

##### 1. University Sponsored Education Programs & Courses

1/Sem Hour or CEU

Participation in formal education programs when the subject matter relates directly to cost estimating or analysis subjects. Provide a one paragraph syllabus of each course on a separate sheet and evidence of course completion for evaluation by the Recertification Committee. Evidence of completion should be in the form of an informal transcript or CEU certificate. (Examples include: Economics, Statistics, Engineering, Operation Management, Finance, Accounting, Math, and Sciences)

Institution	Hrs	Course	Year
_____	_____	_____	_____
_____	_____	_____	_____

##### 2. Association or Industry Sponsored Cost-Related Training, Public Seminar or Educational Forum

1/ 10 Hours

Must show documentation of training and attendance.

Course	Hrs	Year
_____	_____	_____
_____	_____	_____

#### B. KNOWLEDGE SHARING

##### 1. Editor, Cost Estimating & Analysis Publication

3/Year

Publication	Years
_____	_____
_____	_____

##### 2. Referee for a professional Journal related to Cost Estimating & Analysis

1/Article

Include statement by editor attesting to service for each article claimed

Title	Date
_____	_____
_____	_____

##### 3. Published Articles

3/Article  
5/Refereed Article

Each article published on cost estimating or analysis subjects. Articles must be attached to this form for evaluation by the Recertification Committee and should be noted as refereed or not refereed.

Title	Publication	Date
_____	_____	_____
_____	_____	_____

##### 4. Instruction in Cost Estimating/Analysis

Up to 2/Session

Complete the information requested below and attach a statement from the appropriate event organizer, training chair, ICEAA officer or other official attesting to the training session/class you developed and delivered. Examples include: Conference training sessions, Chapter training workshops, Corporate training courses, etc. 1 point per presentation up to 90 minutes in duration; 2 points for presentations over 90 minutes.

Course/Workshop Title	Sponsoring Organization	Attendance #	Date	Session Duration
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

##### 5. Speeches or Presentations related to Cost Estimating/Analysis

1/Event

Complete the information requested below and attach a statement from the appropriate event organizer, conference chair, ICEAA officer or other official attesting to the speech/presentation you developed and delivered. Examples include: Conference keynote speaker or panelist, Chapter luncheon/event speaker, Corporate speaker, etc. 1 point per presentation up to 90 minutes in duration; 2 points for presentations over 90 minutes

Speech/Presentation Title	Sponsoring Organization	Attendance #	Date	Session Duration
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

##### 6. Attendance at Annual Cost Estimating & Analysis Conferences

2/Conference Attended

(May include ICEAA, ISPA, DODCAS, etc.)

Location	Year	Organization
_____	_____	_____
_____	_____	_____