

An Overview of the INCOSE Systems Engineering Professional Program

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The INCOSE SEP Program Purpose and Benefits



- The INCOSE SEP program has been developed as the highest quality, independent assessment of system engineering professionals benefiting:
- Systems engineering community:
 - Creates the standard to identify and develop systems engineering professionals .
 - Establishes a formal, recognized body of knowledge for the systems engineering community.
- System engineering professionals:
 - Provides a portable standard of recognition for attainment of knowledge, education, and experience.
 - Its recertification requirements serve as a mechanism for continued professional development.
- Organizations/institutions:
 - A universal, industry-approved measure of a professional's knowledge –achieved through the independent evaluation of relevant tasks, projects, and programs.

INCOSE's certification program continues to grow due to the increasing recognition of its value to professionals, to organizations/institutions, and to the overall systems engineering community.

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INCOSE **Topics** **INCOSE SEP**

- What is certification and why is it important?
- Who is recognizing and supporting certification?
- What level of certification is right for me?
- How do I apply for certification?
- How do I renew my certification?
- Where can I find more information?



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INCOSE **Topics** **INCOSE SEP**

- What is certification and why is it important?
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What Is Certification?

- Certification is an **occupational designation**
 - Provides confirmation of an individual's competency (demonstrated knowledge, education, and experience) in a specified profession or occupational specialty
- Certification is a **formal process**
 - Issued by an organization
- Certification is **voluntary**
 - It is neither a barrier nor a gate to entering a job
 - However, it may be used as a qualifier in placement

Certificate

License

INCOSE's Systems Engineering Professional Certification Program is a formal process that recognizes individuals who have demonstrated a measurable level of comprehension (education and knowledge) and proficiency (experience) in performing tasks applicable to the systems engineering profession.

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Successful Systems Engineering

Organizational Systems Engineering Processes

ISO, CMMI, etc.
Certify SE Processes

Experienced, Knowledgeable Systems Engineers

INCOSE SEP Certifies SE Experience, Knowledge and Education

**INCOSE SEP focuses on your people.
It complements your organizational initiatives.**

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Why is Certification Important?



For organizations...

- Formally recognizes the Systems Engineering capabilities of your professional staff
- Can provide a discriminator for your proposals
- Can be used as part of the hiring and promotion process
- Provides an **independent** external assessment
- Encourages employee participation in continuing education



INCOSE SEP sets your organization apart!

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Why is Certification Important?



For individuals...

- Formally recognizes your Systems Engineering capabilities
- Provides a discriminator for job applicants
- Provides a competitive advantage in your career
- Provides a **portable** Systems Engineering designation that is recognized across industry domains
- Participating in continuing education indicates your commitment to personal development



INCOSE SEP sets you apart!

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Why is Certification Important?



For your teams...

- Allows the team to level-set on Systems Engineering concepts and activities
- Helps establish a common Systems Engineering language for your team
- Helps break down...
 - geographic boundaries
 - organizational boundaries
 - cultural boundaries



INCOSE SEP is particularly useful for multi-organization, geographically distributed teams.

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Ways to Leverage Certification



- Individuals
 - Recognition
 - Designation on business card, resume, signature, etc.
 - Performance objective

- Organizations
 - Performance expectation
 - Career ladder alignment
 - Job advertisement
 - Proposal discriminator
 - Supplier qualification



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Topics



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A growing number of organizations are recognizing the value of the INCOSE SEP.



- U.S. Department of Defense, Office of the Undersecretary, Acquisition & Technology, Systems and Software Engineering
- Federal Aviation Administration, SE-2020 RFP
- U.S. Department of Homeland Security, Secure Border Initiative RFP
- National Research Council, Committee on Pre-Milestone A Systems Engineering: A Retrospective Review and Benefits for Future Air Force Systems Acquisition
- Federal Highway Administration and the California Department of Transportation Systems Engineering Guidebook



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INCOSE offers organizations the opportunity to partner on SEP while still maintaining the quality and integrity of the credentials.



- Industry agreements
 - EADS
 - Booz Allen Hamilton
 - ManTech
 - MITRE
 - Lockheed Martin
 - TASC
 - BAE Systems
 - Jacobs Technology
 - ASTER Technology & Engineering
 - LinQuest

- University agreements
 - Stevens Institute of Technology, USA
 - University of Texas – El Paso, USA
 - École Polytechnique, France
 - ISAE/Supaero, France
- Other “special” agreements
 - USA Defense Acquisition University (DAU)
 - Object Management Group (OMG) OCSMP collaboration
 - Institution of Engineers, Singapore (IES), INCOSE German Chapter (GfSE), and Korean Council on Systems Engineering (KCOSE) certification framework



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Topics



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INCOSE SEP Architecture

For wherever you are in your career

Multi-Level Base Credentials

The base ASEP, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.

Entry Level

Foundation Level

Senior Level

Extensions

Extensions focus on knowledge of a specific domain or subset of systems engineering and can only be earned after a base credential.

INCOSE ACQ™

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The SEP Aligns with the Typical Levels of a Systems Engineering Career

ESEP focused on:

- LEADERSHIP
- SE ACCOMPLISHMENTS
- SIGNIFICANT SE EXPERIENCE

INCOSE ESEP

CSEP focused on:

- SE EXPERIENCE
- APPLIED SE KNOWLEDGE

INCOSE CSEP

ASEP focused on:

- SE KNOWLEDGE

INCOSE ASEP

SEP Candidates

You can enter at whatever SEP level is appropriate and can seamlessly transition between levels when ready.

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The Key Elements of INCOSE Certification (What is Certified?)

	SE Knowledge	Education	SE Experience	SE Leadership & Accomplishments
	Via an exam based on the INCOSE SE Handbook			
	Via an exam based on the INCOSE SE Handbook	Via confirmation of technical degree (or additional experience, if required)	Via confirmation of applicant's and references written experience claims	
		Via confirmation of technical degree (or additional experience, if required)	Via confirmation of applicant's and references written experience claims	Via oral review of applicant (and references, if required)
Extensions	Via an exam based on the extension body of knowledge			

These four elements (knowledge, education, experience, and leadership & accomplishments) allow for a variety of SE certifications to be earned.

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So What Certification is Right for You?

- If you have just started (or plan to start) practicing systems engineering or have recently graduated and are interested in systems engineering
- If you are a practicing Systems Engineer with more than five years of systems engineering professional work experience
- If you are a systems engineering leader with recognized systems accomplishments and have many years of systems engineering professional work experience
- If you support or are working in a US DoD acquisition environment

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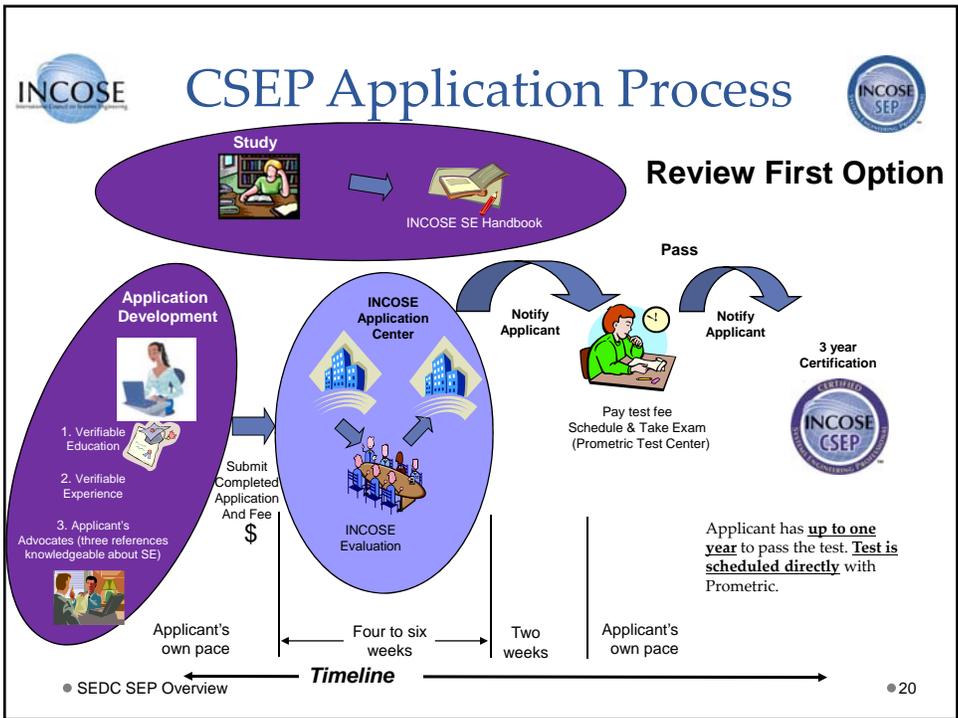
Topics



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All of the Application Material is Available On-line

Systems Engineering Professional Certification

The International Council on Systems Engineering has established a multi-level Professional SEP Certification Program to provide a formal method for recognizing the knowledge and experience of systems engineers, regardless of where they may be in their career.

Multi-Level Base Credentials
The base ASEP, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.

Extensions
Extensions cover a specific domain or subset of systems engineering in more detail. A base SEP credential must first be earned.

What is certification?
Certification is a formal process whereby a community of knowledgeable, experienced, and skilled representatives of an organization, such as INCOSE, provides confirmation of an individual's competency (demonstrated knowledge, education, and experience) in a specified profession or occupational specialty provides formal recognition that a person has achieved competency in specified areas (demonstrated by education, experience, and knowledge). Certification differs from licensing in that licenses are permissions granted by a government entity for a person to practice within its regulatory boundaries. Certification also differs from a "certificate" that documents the successful completion of a training or education program.

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How Long Will It Take to Get CSEP?

There is no one answer. Much depends on the applicant.

<p>Applicant</p> <ul style="list-style-type: none"> Downloads information from INCOSE web page Collects information Fills out and submits forms via e-mail Pays fee on-line 	<p>References submit recommendations via e-mail to INCOSE. Applicant submits missing material.</p>	<p>Applicant</p> <ul style="list-style-type: none"> Schedules exam with test organization Takes exam at test site Receives results immediately Schedules exam, if needed
A. ??????	C. Averaging 50 days	E. Averaging 62 days
Time →		
B. < 2 weeks	D. Averaging 21 days	F. < 2 weeks
<p>INCOSE</p> <ul style="list-style-type: none"> Receives application & fee Checks completeness of submittal Notifies applicant by e-mail that application was received and is complete or has missing material 	<p>INCOSE</p> <ul style="list-style-type: none"> Receives recommendations from references and missing information Evaluates education and experience Notifies applicant of evaluation results. If minimum requirements are met, authorizes exam 	<p>INCOSE sends CSEP certificate via postal mail to applicant</p>

While the times vary, the average time for CSEP is ~200 days.

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Certification Renewal Requirements



- Certification is Valid for
 - 3 Years for CSEP
 - 5 Years for ASEP and must maintain INCOSE membership
 - Indefinite for ESEP, but must maintain INCOSE membership
 - Extensions (e.g., Acq) are renewed concurrent with the base certification, regardless of when earned
- Certification renewal requires
 - Minimum of 120 Professional Development Units (PDUs)
 - Renewal application
 - Continuing education log submittal
 - Must be submitted before current certification period ends
 - Up to 30 "excess" PDUs can be "carried forward"

INCOSE certified professionals have an ongoing growth and learning obligation

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PDUs for Certification Renewal (1 of 2)



Professional Development Activities <small>(All must be relevant to the practice of systems engineering)</small>	Credit	3/5 Year Limit
Technical Society Participation Category		
Be an INCOSE individual, senior, or student member	5 PDU/year	15 PDU
Attend professional technical society local event/chapter presentation/exhibit	1 PDU/hour attendance (10 PDU/year limit)	30 PDU
Attend professional technical society conference/symposium	1 PDU/hour attendance (24 PDU/year limit)	72 PDU
Participate on professional technical society working groups, committees, etc.	1 PDU/hour of effort	No limit
Perform leadership role in professional technical society at local, national or international level	1 PDU/hour of effort	No limit
Volunteer activities with youth in schools or community related to science, technology, engineering, and math (STEM)	1 PDU/hour of effort (24 PDU/year limit)	72 PDU
Volunteer activities with community, school, or non-profit organizations that help them accomplish their technical needs	1 PDU/hour of effort (10 PDU/year limit)	30 PDU
Earn an SE-relevant, exam-based, professional certification other than INCOSE SEP	5 PDU/certification (Up to 2 per renewal period)	10 PDU

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PDUs for Certification Renewal (2 of 2)



Professional Development Activities <small>(All must be relevant to the practice of systems engineering)</small>	Credit	3/5 Year Limit
SE Course Work & Publication Category		
Complete a technical graduate level course	2 PDU/class hour	No limit
Attend educational course, tutorial, or seminar	1 PDU/hour	No limit
Teach professional development coursework, including presentations not part of job function.	2 PDU/hour (prep) 1 PDU/hour (teach)	40 PDU
Write & publish SE article	5 PDU/article	No limit
Write & publish SE book	30 PDU (primary author)/book 10 PDU (contrib. author)/book	No limit
Attend vendor presentation with educational value	1 PDU/hour attendance 5 PDU/year limit	15 PDU
SE Job Function Participation Category		
Receive patent award	10 PDU/award	No limit
Serve as designated lead systems engineer for a system, product or service	15 PDU/year	45 PDU
Lead organization to increase INCOSE systems engineering certifications	5 PDU/year	15 PDU
Volunteer (i.e., non-compensated) activities within your organization related to engineering and science	1 PDU/hour of effort (10 PDU/year limit)	30 PDU

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All of the Renewal Material is Available On-line

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Multi-Level Base Credentials

The base ASEP, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.

Extensions

Extensions cover a specific domain or subset of systems engineering in more detail. A base SEP credential must first be earned.

INCOSE ACQ

What is certification?
 Certification is a formal process whereby a community of knowledgeable, experienced, and skilled representatives of an organization, such as INCOSE, provides confirmation of an individual's competency (demonstrated knowledge, education, and experience) in a specified profession or occupational specialty provides formal recognition that a person has achieved competency in specified areas (demonstrated by education, experience, and knowledge). Certification differs from licensing in that licenses are permissions granted by a government entity for a person to practice within its regulatory boundaries. Certification also differs from a "certificate" that documents the successful completion of a training or education program.

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Topics

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Where Do I Find More Information?

INCOSE Certification web site at
<http://www.incose.org>

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Where Do I Find More Information? (cont.)

Systems Engineering Professional Certification

The International Council on Systems Engineering has established a multi-level Professional SEP Certification Program to provide a formal method for recognizing the knowledge and experience of systems engineers, regardless of where they may be in their career.

Multi-Level Base Credentials

The base **ASEP**, **CSEP**, and **ESEP** credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.

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INCOSE Acq

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Any Questions?



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For more information visit:

www.incose.org/educationcareers/certification/



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