

Draft CTDL Certificates Terms Proposal V 3.1

January 12, 2024 Version 3.1

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Instructions:

To provide input to this Terms Proposal, either add comments to this document or email info@credentialengine.org. The comment period concludes on February 16, 2024

Update Tracking

Change Summary	Date	Responsible Person(s)	Status (Draft/Accepted)
Version .9	November 15, 2023	Nate Argo Phil Barker Jeanne Kitchens	Draft
Version 1.0	November 29, 2023	Nate Argo Phil Barker Jared Diener Deb Everhart Jeanne Kitchens	Draft
Version 2.0: All comments and suggestions provided by CTG members via Version 1.0 were logged and responded to via this Google Sheet (2nd tab) Certificate Task Group - Certificate Definitions Analysis and answers to the Version 1.0 Terms Proposal Questions	December 11, 2023	Nate Argo Phil Barker Jared Diener Jeanne Kitchens	Draft
Version 3.0: All comments and suggestions provided by CTG members via Version 2.0 were logged and responded to via this Google Sheet (3rd tab). Comments and suggestions are from the 6th meeting of the CTG and a meeting with state agency partner members of CTG meeting held on Dec. 20, 2023. Certificate Task Group - Use Case, Terms Proposal C...	December 20, 2023	Phil Barker Jared Diener Jeanne Kitchens	Draft
Version 3.0: Updated with additional CTG comments as suggestions. The suggestions will be reviewed during the January 10, 2024 CTG meeting. The comments and suggestions are documented via this Google Sheet in the 2nd tab. Certificate Task Group - Use Case, Terms Proposal C...	January 4, 2024	Jeanne Kitchens	Draft
Version 3.1: Updated with CTG comments on suggestions provided during the January 10, 2024 CTG meeting.	January 10, 2024	Nate Argo Phil Barker Jared Diener Jeanne Kitchens	Draft

- A. Classes - these specify the type of thing being described and may be referenced in the definition of a property to indicate its scope. Each class has a unique purpose and definition.
- B. Properties - these are the terms that describe the characteristics and relationships of the thing being described. Each property also has a unique purpose and definition.

- C. Concept Schemes - these are controlled vocabularies that can be used to develop defined pick lists and are useful for filtering.

You can see all of the existing CTDL terms for: (1) CTDL <https://credreg.net/ctdl/terms>, (2) CTDL ASN (competencies) <https://credreg.net/ctdlasn/terms>, and (3) Qdata <https://credreg.net/qdata/terms>. The CTDL handbook is also a useful resource to learn more about the CTDL <https://credreg.net/ctdl/handbook>.

See all existing credential terms

https://credreg.net/page/typeslist#ceterms_Credential.

GitHub Documentation: CTDL Rubric Domain Model Diagrams and JSON LD Examples

- GitHub Issue: <https://github.com/CredentialEngine/Schema-Development/issues/914>
- GitHub CTDL Certificates Folder: <https://github.com/CredentialEngine/Schema-Development/tree/master/Certificates>
- Certificates Domain Model: [This diagram updated on January 12, 2024](#) (single click to enlarge it) shows how the proposed certificate classes utilize numerous existing CTDL properties, classes, concept schemes, and concepts.

CTDL Certificates Classes Hierarchy

The draft definitions below are based on the initial CTDL Certificates Domain Model. The classes form a hierarchy to organize the classes below the Certificate superclass.

- Blue highlighted text indicates a proposed change to existing CTDL terms, definitions, comments, and/or usage notes.
- Orange highlighted text indicates a new CTDL class, definition, comment, and/or usage notes.
- Examples are provided for context and will not be included with the CTDL.

A. (EXISTING) [Certificate](#)

Definition: Credential which designates participation in, completion of, or demonstration of requisite knowledge and skills for a formal academic or training program, an occupation, or non-formal learning.

Comment: Distinct from degrees of higher education and typically non-renewable. For degrees of higher education use and appropriate type from the Degree hierarchy.

B. (EXISTING) [Certificate of Completion](#)

Definition: Credential that acknowledges completion of an assignment, training or other activity.

Comment: A record of the activity may or may not exist, and the credential may or may not be designed as preparation for another resource such as a credential, assessment, or learning opportunity.

Examples: [150 - Hour Real Estate Brokers Program](#), and [200 Hour Teacher Training](#).

There's 6,380 Certificates of completion published to the credential Registry. Very often, these are approved Workforce Innovation Opportunity Act (WIOA) credential programs.

[Note: the proposed change is to make this a subclass of Certificate, which is now possible with the broadened definition of Certificate]

C. Certificate of Participation

Definition: Credential that acknowledges attendance and/or engagement in an activity.

Comment: These certificates do not imply completion, or mastery of specific skills, or that a grade has been awarded, but recognize the individual's active participation with an activity . A record of the activity may or may not exist, and the credential may or may not be designed as preparation for another resource such as a credential, assessment, or learning opportunity.

Examples: Examples of activities that can result in a Participation Certificate include: competitions, workshops, seminars, short-term training programs, or online courses.

D. Professional Certificate

Professional Certificate

Definition: Credential awarded for demonstrating competencies in a profession or particular occupational field, including job readiness.

Comment: These certificates validate competency in tasks, tools, software, or procedures within a particular industry and are often awarded by training centers, career and technical education, industry organizations, or businesses.

Examples: Certificates validate competency in specific tasks, tools, software, or procedures within a particular industry.

E. Proficiency Certificate

Definition: Credential awarded after assessment of skills in a specific area defined by a recognized body of experts, without regard for how the skills were learned.

Comment: Examples of specific areas include language, typing, music, and dance.

Examples: Language proficiency certificate, music proficiency certificate

F. Work-Based Learning Certificate

Definition: Credential awarded for work-based learning and earn-and-learn models that meet standards and are applicable to industry, trades, occupations, and professions.

Comment: Work-based learning includes many types of skills training that are occupation specific including, but not limited to apprenticeship.

Usage Note: For an apprenticeship certificate, use Pre-Apprenticeship, Apprenticeship, Journeyman, or Master Trade Certificate.

G. Pre-Apprenticeship Certificate

Definition: Credential awarded to indicate readiness for an apprentice-level program.

H. (Existing) Apprentice Certificate

Definition: Credential awarded at the Apprentice level for successful completion of an apprenticeship program in industry trades and professions.

I. (Existing) Journeyman Certificate

Definition: Credential awarded at the Journeyman level for successful completion of an apprenticeship program in industry trades and professions.

J. (Existing) Master Trade Certificate

Definition: Credential awarded at the Master level for demonstration of the highest level of skills and performance in industry trades and professions.

K. Academic Certificate

Definition: Credential awarded for successful completion of a formal education program, demonstrating requisite knowledge and skills.

Comment: Formal education programs include academic, career, technical programs with defined completion requirements and often require approvals by provincial or federal government.

L. Secondary Education Certificate

Definition: Credential for successful completion of a formal secondary-level education program that is less than a diploma and does not indicate completion of secondary education graduation requirements.

Comment:

Usage Note: Use Diploma or General Education Development to indicate completion of secondary education graduation requirements.

Example: Includes certificates from secondary career and technical education programs like welding, construction, and healthcare.

M. Basic Technical Certificate

Definition: Credential awarded at a postsecondary level for successful completion of a formal education program that is completed within one semester, demonstrating competencies within a specific occupational area, indicating job readiness.

Comment: Typically equivalent to a United States IPEDS level 1a that specifies postsecondary certificates of less than 300 clock hours, or less than 9 semester or trimester credit hours, or less than 13 quarter credit hours.

Example: These are typically certificates awarded by Community Colleges or 2-Year institutions for programs that are typically a semester or less, and related to a specific occupational area to indicate job readiness.

N. Technical Level 1 Certificate

Definition: Credential award at a postsecondary level for successful completion of a formal education program that is more than one semester and less than 1 year, demonstrating competencies within a specific subject area or an occupational area indicating job readiness.

Comment: Can lead to a Technical Certificate Level 2 or a degree. Equivalent to a United States IPEDS Award Level 1b that specifies postsecondary certificates of 300-899 clock hours, or 9-29 semester or trimester credit hours, or 13-44 quarter credit hours.

Examples: These are typically certificates awarded by a Community College or 2-Year institution for programs that are less than 1 year and are related to a specific occupational area to indicate job readiness. However, this would also include things such as a certificate focused on a specific subject area like a Certificate in Gender Studies, or a Certificate in Data Science offered at a 4-year institution that can be earned while working on a Bachelor's degree.

O. Technical Level 2 Certificate

Definition: Credential award at a postsecondary level for successful completion of a formal education program that is at least 1 year but less than 2 years, demonstrating competencies within a specific subject area or in an occupational area indicating job readiness.

Comment: Can lead to a degree. Equivalent to a United States IPEDS Award Level 2 that specifies postsecondary certificates of at least 900 but less than 1,800 clock hours, or at least 30 but less than 60 semester or trimester credit hours, or at least 45 but less than 90 quarter credit hours.

Examples: These are typically certificates awarded by a Community College or 2-Year institution for programs that are at least 1 year but less than 2 years and are related to a specific occupational area to indicate job readiness. However, this would also include certificates focused on a specific subject area like a Certificate in Gender Studies, or a Certificate in Data Science offered at a 4-year institution that can be earned while working on a Bachelor's degree.

P. Technical Level 3 Certificate

Definition: Credential award at a postsecondary level for successful completion of a formal education program that is at least 2 years but less than 4 years, demonstrating competencies within specific occupational areas indicating job readiness.

Comment: Can lead to a degree. Equivalent to a United States IPEDS Award Level 4 that specifies certificates of 1,800 or more clock hours, or 60 or more semester or trimester credit hours, or 90 or more quarter credit hours.

Examples: This would include an advanced technical certificate in high voltage lineman that takes at least 2 years to complete but is not an Associate's Degree.

P. General Education Level 1 Certificate

Definition: Credential award at a postsecondary level for successful completion of general education courses that cover a broad range of foundational academic skills and takes less than 1 year.

Comment: Can lead to a General Education Certificate Level 2 or a degree. Equivalent to a United States IPEDS Award Level 1b that specifies postsecondary certificates of 300-899 clock hours, or 9-29 semester or trimester credit hours, or 13-44 quarter credit hours.

Usage Note: If the competencies are related to a specific subject area or occupational area use the Technical Level 1 or use a Higher Education Certificate.

Examples: Arkansas and Indiana offer general education certificates that are less than a year in General Studies/General Education that can apply as credit towards other academic programs.

Q. General Education Level 2 Certificate

Definition: Credential award at a postsecondary level for successful completion of general education courses that takes at least 1 year that cover a broad range of foundational academic skills and takes less than 2 years to complete.

Comment: Can lead to a degree. Equivalent to a United States IPEDS Award Level 2 that specifies postsecondary certificates of at least 900 but less than 1,800 clock hours, or at least 30 but less than 60 semester or trimester credit hours, or at least 45 but less than 90 quarter credit hours.

Usage Note: If the competencies are related to a specific subject area or occupational area use the Technical Level 2 or use a Higher Education Certificate.

Examples: Arkansas and Indiana offer general education certificates that are at least 1 year but less than 2 years in General Studies/General Education that can apply as credit towards other academic programs.

R. Higher Education Level 1 Certificate

Definition: Credential awarded at the postsecondary level for successful completion of a formal higher education program that takes about one year in a specific subject.

Comment: Typically equivalent to 60 ECTS Credits at Level 5 in the European Qualifications Framework .

Examples: (UK) Certificate of Higher Education

S. Higher Education Level 2 Certificate

Definition: Credential awarded at the postsecondary level for successful completion of a formal higher education program that takes about two years in a specific subject.

Comment: Typically equivalent to 120 ECTS Credits at Level 5 in the European Qualifications Framework and the Short Cycle in the Qualifications Framework of the European Higher Education Area.

Examples: (UK) Diploma of Higher Education

T. Post-Baccalaureate Certificate

Definition: Credential award that requires completion of an organized program of study at a level beyond that of a bachelor's degree, which is designed for persons who have completed a baccalaureate degree but does not meet the requirements of a master's degree.

Comment: This may include certificates that are for specialties within an occupational field or occupational program of study. Equivalent to a United States IPEDS Award Level 6.

Examples: masters certificate, graduate certificate

U. Post-Master Certificate

Definition: Credential award that requires completion of an organized program of study beyond that of a master's degree, which is designed for persons who have completed a master's degree but does not meet the requirements of a doctor's degree.

Comment: This may include certificates that are for specialties within an occupational field or occupational program of study and can include post-doctoral first professional certificates such as healthcare and law. Equivalent to a United States IPEDS Award Level 7 or 17, 18, and 19.

Examples: EDS postgraduate certificate

CTDL Classes Tables

Class Table Columns

- A. Class - Name of the class.
- B. URI - Term's permanent URL for data processing. All existing terms are linked from the Classes and Properties tables below to the CTDL terms via <https://credreg.net>.
- C. Label - Term's user-friendly label for people.
- D. Definition - Defines intent of the term for data processing.
- E. Comment - Clarifies the definition.

F. Usage Note - Clarifies usage of the term.
 G. Status - Proposed = new terms proposed to be included with CTDL; Existing = Existing term that is already included in the CTDL; Modify = revision to an existing term's definition that does not change its intent.

A Class	B URI	C Label	D Definition	E Comment	F Usage Notes	G Status
Certificate	ceterms:Certificate	Certificate	Credential which designates participation in, completion of, or demonstration of requisite knowledge and skills for a formal academic or training program, an occupation, or non-formal learning.	Distinct from degrees of higher education and typically non-renewable. For degrees of higher education use and appropriate type from the Degree hierarchy.		Modify
Certificate of Completion	ceterms:CertificateOfCompletion	Certificate of Completion	Credential that acknowledges completion of an assignment, training or other activity.	A record of the activity may or may not exist, and the credential may or may not be designed as preparation for another resource such as a credential, assessment, or learning opportunity.		Modify
Certificate of Participation	ceterms:CertificateOfParticipation	Certificate of Participation	Credential that acknowledges attendance and/or engagement in an activity.	These certificates do not imply completion, or mastery of specific skills, or that a grade has been awarded, but recognize the individual's active participation with an activity . A record of the activity may or may not exist, and the credential may or may not be designed as preparation for another resource such as a credential, assessment, or learning opportunity.		Proposed
Professional Certificate	ceterms:ProfessionalCertificate	Professional Certificate	Credential awarded for demonstrating competencies in a profession or particular occupational field, including job readiness.	These certificates do not imply completion, or mastery of specific skills, or that a grade has been awarded, but recognize the individual's active participation with an activity . A record of the activity may or may not exist, and the credential may or may not be designed as preparation for another resource such as a credential, assessment, or learning opportunity.		Proposed
Proficiency Certificate	ceterms:ProficiencyCertificate	Proficiency Certificate	Credential awarded after assessment of skills in a specific area defined by a recognized body of experts, without regard for how the skills were learned.	Examples of specific areas include language, typing, music, and dance.		

A Class	B URI	C Label	D Definition	E Comment	F Usage Notes	G Status
Work-Based Learning Certificate	ceterms:WorkbasedLearningCertificate	Work-Based Learning Certificate	Credential awarded for work-based learning and earn-and-learn models that meet standards and are applicable to industry, trades, occupations, and professions.	Work-based learning includes many types of skills training that are occupation specific including, but not limited to apprenticeship.		Proposed
Pre-Apprenticeship Certificate	ceterms:PreApprenticeshipCertificate	Pre-Apprenticeship Certificate	Credential awarded to indicate readiness for an apprentice-level program			Proposed
Apprentice Certificate	ceterms:ApprenticeCertificate	Apprenticeship Certificate	Credential awarded at the Apprentice level for successful completion of an apprenticeship program in industry trades and professions.			Modify
Journeyman Certificate	ceterms:JourneymanCertificate	Journeyman Certificate	Credential awarded at the Journeyman level for successful completion of an apprenticeship program in industry trades and professions.			Modify
Master Trade Certificate	ceterms:MasterCertificate	Master Trade Certificate	Credential awarded at the master level for demonstration of the highest level of skills and performance in industry trades and professions.			Modify
Academic Certificate	ceterms:AcademicCertificate	Academic Certificate	Credential awarded for successful completion of a formal education program, demonstrating requisite knowledge and skills.	Formal education programs include academic, career, technical programs with defined completion requirements and often require approvals by provincial or federal government.		Proposed
Secondary Education Certificate	ceterms:SecondaryEducationCertificate	Secondary Education Certificate	Credential for successful completion of a formal secondary-level education program that is less than a diploma and does not indicate completion of secondary education graduation requirements.		Use Diploma or General Education Development to indicate completion of secondary education graduation requirements.	Proposed

A Class	B URI	C Label	D Definition	E Comment	F Usage Notes	G Status
Basic Technical Certificate	ceterms:BasicTechnicalCertificate	Basic Technical Certificate	Credential awarded at a postsecondary level for successful completion of a formal education program that is completed within one semester, demonstrating competencies within a specific occupational area, indicating job readiness.	Typically, equivalent to a United States IPEDS level 1a that specifies postsecondary certificates of less than 300 clock hours, or less than 9 semester or trimester credit hours, or less than 13 quarter credit hours.		
Technical Level 1 Certificate	ceterms:TechnicalLevel1Certificate	Technical Level 1 Certificate	Credential awarded at a postsecondary level for successful completion of a formal education program that is more than one semester and less than 1 year, demonstrating competencies within a specific subject area or an occupational area indicating job readiness.	Can lead to a Technical Certificate Level 2 or a degree. Equivalent to a United States IPEDS Award Level 1b that specifies postsecondary certificates of 300-899 clock hours, or 9-29 semester or trimester credit hours, or 13-44 quarter credit hours.		Proposed
Technical Level 2 Certificate	ceterms:TechnicalLevel2Certificate	Technical Level 2 Certificate	Credential awarded at a postsecondary level for successful completion of a formal education program that is at least 1 year but less than 2 years, demonstrating competencies within a specific subject area or in an occupational area indicating job readiness.	Can lead to a degree. Equivalent to a United States IPEDS Award Level 2 that specifies postsecondary certificates of at least 900 but less than 1,800 clock hours, or at least 30 but less than 60 semester or trimester credit hours, or at least 45 but less than 90 quarter credit hours.		Proposed
Technical Level 3 Certificate	ceterms:Technical Level 3 Certificate	Technical Certificate Level 3	Credential awarded at a postsecondary level for successful completion of a formal education program that is at least 2 years but less than 4 years, demonstrating competencies within specific occupational areas indicating job readiness.	Can lead to a degree. Equivalent to a United States IPEDS Award Level 4 that specifies certificates of 1,800 or more clock hours, or 60 or more semester or trimester credit hours, or 90 or more quarter credit hours.		Proposed
General Education Level 1 Certificate	ceterms:GeneralEducationLevel1Certificate	General Education Level 1 Certificate	Credential awarded at a postsecondary level for successful completion of general education	Can lead to a General Education Certificate Level 2 or a degree. Equivalent to a United States IPEDS Award Level 1b that specifies postsecondary		Proposed

A Class	B URI	C Label	D Definition	E Comment	F Usage Notes	G Status
			courses that cover a broad range of foundational academic skills and takes less than 1 year.	certificates of 300-899 clock hours, or 9-29 semester or trimester credit hours, or 13-44 quarter credit hours.		
General Education Level 2 Certificate	ceterms:GeneralEducationLevel2Certificate	General Education Level 2 Certificate	Credential award at a postsecondary level for successful completion of general education courses that takes at least 1 year that cover a broad range of foundational academic skills and takes less than 2 years to complete.	Can lead to a degree. Equivalent to a United States IPEDS Award Level 2 that specifies postsecondary certificates of at least 900 but less than 1,800 clock hours, or at least 30 but less than 60 semester or trimester credit hours, or at least 45 but less than 90 quarter credit hours.		Proposed
Higher Education Level 1 Certificate	ceterms:HigherEducationLevel1Certificate	Higher Education Level 1 Certificate	Credential awarded at the postsecondary level for successful completion of a formal higher education program that takes about one year in a specific subject.	Typically equivalent to 60 ECTS Credits at Level 5 in the European Qualifications Framework.		
Higher Education Level 2 Certificate	ceterms:HigherEducationLevel2Certificate	Higher Education Level 2 Certificate	Credential awarded at the postsecondary level for successful completion of a formal higher education program that takes about two years in a specific subject.	Typically equivalent to 120 ECTS Credits at Level 5 in the European Qualifications Framework and the Short Cycle in the Qualifications Framework of the European Higher Education Area.		
Post-Baccalaureate Certificate	ceterms:PostBaccalaureateCertificate	Post-Baccalaureate Certificate	Credential award that requires completion of an organized program of study at a level beyond that of a bachelor's degree, which is designed for persons who have completed a baccalaureate degree but does not meet the requirements of a master's degree.	This may include certificates that are for specialties within an occupational field or occupational program of study. Equivalent to a United States IPEDS Award Level 6.		Proposed
Post-Master Certificate	ceterms:PostMasterCertificate	Post-Master Certificate	Credential award that requires completion of an organized program of study beyond that of a master's degree, which is designed for persons who have completed a master's degree but does not meet the requirements of a doctor's	This may include certificates that are for specialties within an occupational field or occupational program of study and can include post-doctoral first professional certificates such as healthcare and law. Equivalent to a United States IPEDS Award Level 7 or 17, 18, and 19.		Proposed

A Class	B URI	C Label	D Definition	E Comment	F Usage Notes	G Status
			degree.			
RegistrationAction	ceterms-RegistrationAction	Registration Action	Action by an independent, neutral, and authoritative agent that registers a resource that has been vetted, approved, and validated to meet specific criteria.			Proposed

CTDL Properties

The proposed Properties are highlighted in gold. Existing Properties are also included. The properties are listed by Class and are in alphabetical order.

Property Table Columns

- A. Class name
- B. URI - Term's permanent URL for data processing. All existing terms are linked from the Classes and Properties tables below to the CTDL terms via <https://credreg.net>.
- C. Label - Term's user-friendly label for people.
- D. Definition - Defines intent of the term for data processing.
- E. Comment - Clarifies the definition.
- F. Usage Note - Clarifies usage of the term.
- G. Range - The data type of the value of the property.
- H. Status - Proposed = new terms proposed to be included with CTDL; Existing = Existing term that is already included in the CTDL; Modify = revision to an existing term's definition that does not change its intent.
- I. [Minimum Data Policy](#) - This is only applicable to Properties published to the Credential Registry. There are three defined states:
 - (1) Required = These terms must be included to publish to the Registry.
 - (2) Recommended Benchmark = These terms are best practices to publish information to the Registry. Recommended Benchmarks are valuable to employers, students, application developers, state agencies, and others.
 - (3) Optional = These terms are optional for publishing to the Registry, and may only be useful in some circumstances.

All of the Properties below are applicable to all of the proposed Certificate classes with the exception of properties specific to Work-based Learning Certificate.

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
All Certificate Classes	ceterms:accreditedBy	Accredited By	Quality assurance organization that provides official authorization to, or approval of, a credential, organization, assessment, or learning opportunity			Existing ranges used with ceterms:Credential with the exception of renewals.	Existing	Recommended Benchmark
All Certificate Classes	ceterms:accreditedIn	Accredited In	Region or political jurisdiction such as a state, province or locale in which the credential, learning opportunity or assessment is accredited.				Existing	Optional
All Certificate Classes	ceterms:administrationProcess	Administration Process	Entity describing the process by which a resource, or aspects of it, are administered.	Processes described include the execution of events and the development of resources in the lifecycle of a credential or organization, such as the proctoring of assessments.	For assessments and rubrics, this can be used to indicate the scoring algorithm.		Existing	Optional
All Certificate Classes	ceterms:advancedStandingFrom	Advanced Standing From	Credential that has its time or cost reduced by another credential, assessment or learning opportunity.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:aggregateData	Aggregate Data	Statistical information about the resource.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:alternateName	Alternate Name	Alias for the entity including acronyms, alpha-numeric notations, and other forms of name abbreviations in common use such as PhD, MA, and BA.				Existing	Optional
All Certificate Classes	ceterms:appealProcess	Appeal Process	Formal process for objecting to decisions of the organization regarding credentials, assessments or processes.				Existing	Optional
All Certificate Classes	ceterms:approvedBy	Approved By	Organization that pronounces favorable judgment for this credential, assessment, learning opportunity, or organization.				Existing	Recommended Benchmark

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
All Certificate Classes	ceterms:approvedIn	Approved In	Region or political jurisdiction such as a state, province or locale in which an organization pronounces favorable judgment for this credential, assessment, learning opportunity, or organization.				Existing	Optional
All Certificate Classes	ceterms:assessmentDeliveryType	Assessment Delivery Type	Delivery type for the assessment for the credential.	Indicates the delivery type for the assessment for the credential.			Existing	Optional
All Certificate Classes	ceterms:audienceLevelType	Audience Level Type	Type of level indicating a point in a progression through an educational or training context, for which the resource is intended; select from an existing enumeration of such types.	Best practice is to use terms from the CTDL Audience Level vocabulary.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:audienceType	Audience Type	The type of audience for which the resource is applicable, intended, or useful; select from an existing enumeration of such types.	Best practice for developing credential descriptions for the Credential Engine Registry is to use the ceterms:Audience vocabulary.			Existing	Optional
All Certificate Classes	ceterms:availabilityListing	Availability Listing	Listing of online and/or physical locations where a credential can be pursued.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:availableAt	Available At	Physical location where the credential, assessment, or learning opportunity can be pursued.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:availableOnlineAt	Available Online At	Online location where the credential, assessment, or learning opportunity can be pursued.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:broadAlignment	Broad Alignment	Item that covers all of the relevant concepts in the item being described as well as additional relevant concepts.				Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
All Certificate Classes	ceterms:commonConditions	Common Conditions	Set constraints, prerequisites, entry conditions, or requirements that are shared across an organization, organizational subdivision, set of credentials, or category of entities and activities.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:commonCosts	Common Costs	Set of costs maintained at an organizational or sub-organizational level, which apply to this credential, assessment, or learning opportunity.				Existing	Optional
All Certificate Classes	ceterms:complaintProcess	Complaint Process	Process for handling complaints about a credential, or aspects of it including related learning opportunities and assessments.				Existing	Optional
All Certificate Classes	ceterms:coPrerequisite	Co-Prerequisite	Resource that must be completed prior to, or pursued at the same time as, this resource.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:copyrightHolder	Copyright Holder	Person or organization holding the rights in copyright to entities such as credentials, learning opportunities, assessments, competencies or concept schemes.				Existing	Optional
All Certificate Classes	ceterms:corequisite	Corequisite	Resources that must be pursued concurrently.	Includes dual (double) degrees that cannot be earned independently of each other.			Existing	Optional
All Certificate Classes	ceterms:credentialId	Credential Identifier	Globally unique identifier by which the creator, owner or provider of a credential recognizes that credential in transactions with the external	The identifier may take the form of a URN, UUID, ARK, DOI, INFO or any other publicly recognized, globally	Best practice for descriptions intended for the Credential Engine Registry is to use the ceterms:ctid		Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
			environment (e.g., in verifiable claims involving the credential).	unique identifier scheme.	property for this purpose; ceterms:ctid is declared as a subproperty of ceterms:credentialid.			
All Certificate Classes	ceterms:credentialStatusType	Credential Status Type	Type of official status of the credential; select from an enumeration of such types.	Best practice for developing credential descriptions for the Credential Engine Registry is to use the ceterms:CredentialStatus vocabulary.			Existing	Required
All Certificate Classes	ceterms:ctid	CTID	Globally unique Credential Transparency Identifier (CTID) by which the creator, owner or provider of a resource recognizes it in transactions with the external environment (e.g., in verifiable claims involving the resource).	The CTID is the equivalent of a version identifier for the resource. Different versions of a resource are considered distinct expressions and each must be assigned its own CTID. Each version of a resource can have only one CTID assigned. However, a single version of a resource may have distinct identifier values for both the ctid property and the credentialid property. In such a case both identifiers will be recognized by the resource creator/owner/provider in transactions with the external environment.			Existing	Required
All Certificate Classes	ceterms:dateEffective	Date Effective	Effective date of this resource's content.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:description	Description	Statement, characterization or account of the entity.				Existing	Required
All Certificate Classes	ceterms:developmentProcess	Development Process	Entity describing the process by which a credential, or aspects of it, were created.				Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
All Certificate Classes	ceterms:earnings	Earnings	Entity describing aggregate credential holder earnings data.	The use of ceterms:aggregateData instead of this property is strongly recommended.			Existing	Optional
All Certificate Classes	ceterms:employmentOutcome	Employment Outcome	Entity describing aggregate data on jobs obtained with the credential by occupation and industry for a given period of time in a specific region.	The use of ceterms:aggregateData instead of this property is strongly recommended.			Existing	Optional
All Certificate Classes	ceterms:estimatedCost	Estimated Cost	Estimated cost of a credential, learning opportunity or assessment.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:estimatedDuration	Estimated Duration	Estimated time it will take to complete a credential, learning opportunity or assessment.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:exactAlignment	Exact Alignment	Relevant concepts in two entities being compared are coextensive.				Existing	Optional
All Certificate Classes	ceterms:expirationDate	Expiration Date	Date beyond which the resource is no longer offered or available.	Previously earned, completed, or attained resources may still be valid even if they are no longer offered.			Existing	Optional
All Certificate Classes	ceterms:financialAssistance	Financial Assistance	Entity that describes financial assistance for which this credential, assessment, or learning opportunity qualifies.	Whether the financial aid in question is associated with a credential, an assessment, or a learning opportunity is dependent on context.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:hasPart	Has Part	Indicates a separately identifiable and independently useful component of the entity.	Such partitive components can frequently be used in more than one context.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:hasProxy	Has Proxy	Indicates a resource that acts as a stand-in for the resource.				Existing	Optional
All Certificate Classes	ceterms:hasRubric	Has Rubric	Rubric related to this resource.				Existing	Optional
All Certificate Classes	ceterms:hasSupportService	Has Support Service	Reference to a relevant support service.				Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
All Certificate Classes	ceterms:holders	Holders	Entity describing the number and characteristics of credentialed individuals and their geographic location.	The use of ceterms:aggregateData instead of this property is strongly recommended.			Existing	Optional
All Certificate Classes	ceterms:identifier	Identifier	Alphanumeric token that identifies this resource and information about the token's originating context or scheme.	Where a specific property for the originating context or scheme exists, such as ceterms:opelD, ceterms:ncesID, ceterms:leiCode, etc., use that property instead of this one. Where the identifier has no nameable originating context or scheme other than that of the resource being identified, ceterms:codedNotation may be used.			Existing	Optional
All Certificate Classes	ceterms:image	Image	Image, icon or logo that represents the entity including registered trade or service marks.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:industryType	Industry Type	Type of industry; select from an existing enumeration of such types such as the SIC, NAICS, and ISIC classifications.	Best practice in identifying industries for U.S. resources is to provide the NAICS code using the ceterms:naics property. Other resources may use the ceterms:industrytype property and any framework of the class ceterms:IndustryClassification.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:inLanguage	In Language	The primary language or languages of the entity, even if it makes use of other languages; e.g., a course offered in English to teach Spanish would have an inLanguage of English, while a				Existing	Required

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
			credential in Quebec could have an inLanguage of both French and English.					
All Certificate Classes	ceterms:instructionalProgramType	Instructional Program Type	Type of instructional program; select from an existing enumeration of such types.	For U.S. credentials, best practice is to use a framework such as the CIP (Classification of Instructional Programs). Other credentials may use any framework of the class CTDL InstructionalProgramClassification.			Existing	Optional
All Certificate Classes	ceterms:isAdvancedStandingFor	Is Advanced Standing For	This credential, assessment, or learning opportunity reduces the time or cost required to earn or complete the referenced credential, assessment, or learning opportunity.	A third-party credential agent claiming that its credential provides advanced standing for the credential of another credential agent should consider using ceterms:recommendedFor or instead of ceterms:advancedStandingFor in the absence of an explicit and verifiable agreement on advanced standing between the agents of the two credentials.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:isicV4	ISIC Revision 4 Code	The International Standard of Industrial Classification of All Economic Activities (ISIC), Revision 4 code for a particular organization, business person, or place.				Existing	Optional
Certificate Certificate of Completion Certificate of Participation Professional Certificate Proficiency Certificate Work-based Learning Certificate Pre-Apprenticeship Certificate Apprentice Certificate	ceterms:isNonCredit	Is Non-Credit	Resource carries or confers no official academic credit according to the provider of the resource.				Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
Journeyman Certificate Master Trade Certificate Academic Certificate Secondary Education Certificate Basic Technical Certificate								
All Certificate Classes	ceterms:isPartOf	Is Part Of	Indicates another entity of which this entity is a component.	Covers partitive notions such as "embedded".			Existing	Recommended Benchmark
All Certificate Classes	ceterms:isPreparationFor	Is Preparation For	This credential, assessment, or learning opportunity provides preparation for the credential, assessment, or learning opportunity being referenced.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:isRecommendedFor	Is Recommended For	It is recommended to earn or complete this credential, assessment, or learning opportunity before attempting to earn or complete the referenced credential, assessment, or learning opportunity.				Existing	Recommended Benchmark
- Apprentice Certificate - Journeyman Certificate - Master Trade Certificate	ceterms:isRegisteredApprenticeship	Is Registered Apprenticeship	The resource is registered with a governmental agency or other authorized organization because it has been vetted, approved and validated to meet specific criteria.			xsd:Boolean	Proposed	Recommended Benchmark
All Certificate Classes	ceterms:isRequiredFor	Is Required For	This credential, assessment, or learning opportunity must be earned or completed prior to attempting to earn or complete the referenced credential, assessment, or learning opportunity.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:jurisdiction	Jurisdiction	Geographic or political region in which the credential is formally applicable or an organization has authority to act.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:keyword	Keyword	Keyword or key phrase describing relevant aspects of an entity.	Use the keyword property to enter free text keywords. A subject concept in a controlled			Existing	Recommended Benchmark

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
				vocabulary should use the subject property.				
All Certificate Classes	ceterms:latestVersion	Latest Version	Latest version of the resource.				Existing	Optional
All Certificate Classes	ceterms:learningDeliveryType	Learning Delivery Type	Delivery type for the learning opportunity for the credential.	Indicates the delivery type for the learning opportunity for the credential.			Existing	Optional
All Certificate Classes	ceterms:maintenanceProcess	Maintenance Process	Entity describing the process by which the credential is maintained including review and updating.	Such maintenance does not include renewal of a credential by an individual holder.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:majorAlignment	Major Alignment	Major overlap of relevant concepts between the two resources being compared.				Existing	Optional
All Certificate Classes	ceterms:minorAlignment	Minor Alignment	Minor overlap of relevant concepts between the two credentials being compared.				Existing	Optional
All Certificate Classes	ceterms:naics	NAICS	North American Industry Classification System (NAICS) code of an organization or business person.				Existing	Optional
All Certificate Classes	ceterms:name	Name	Name or title of the resource.				Existing	Required
All Certificate Classes	ceterms:narrowAlignment	Narrow Alignment	Credential covers all of the relevant concepts in another credential as well as relevant concepts not found in the other credential.				Existing	Optional
All Certificate Classes	ceterms:nextVersion	Next Version	Version of the resource that immediately follows this version.				Existing	Optional
All Certificate Classes	ceterms:occupationType	Occupation Type	Type of occupation; select from an existing enumeration of such types.	For U.S. resources, best practice is to identify an occupation using a framework such as the ONet. Other resources may use any framework of the class ceterms:OccupationClassification, such as the			Existing	Recommended Benchmark

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
				EU's ESCO, ISCO-08, and SOC 2010.				
All Certificate Classes	ceterms:offeredBy	ceterms:offeredBy	Agent that offers the resource.				Existing	Optional
All Certificate Classes	ceterms:offeredIn	Offered In	Region or political jurisdiction such as a state, province or locale where the credential, learning resource or assessment is offered.				Existing	Conditional: ownedBy or offeredBy
All Certificate Classes	ceterms:ownedBy	Owned By	Organization or person with an enforceable claim or legal title to the resource.	Agent includes credentialing organizations, quality assurance organizations and persons. It does not include credential holders.			Existing	Conditional: OfferedBy or ownedBy
All Certificate Classes	ceterms:preparationFrom	Preparation From	Another credential, learning opportunity or assessment that provides preparation for this credential, learning opportunity or assessment.				Existing	Optional
All Certificate Classes	ceterms:previousVersion	Previous Version	Version of the resource that immediately precedes this version.				Existing	Optional
All Certificate Classes	ceterms:processStandards	Process Standards	Webpage or online document that describes the criteria, standards, and/or requirements used with a process.				Existing	Optional
All Certificate Classes	ceterms:processStandardsDescription	Process Standards Description	Textual description of the criteria, standards, and/or requirements used with a process.				Existing	Optional
All Certificate Classes	ceterms:recognizedBy	Recognized By	Agent that acknowledges the validity of the credential, learning opportunity of assessment.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:recognizedIn	Recognized In	Region or political jurisdiction such as a state, province or locale in which the credential, learning resource, or assessment				Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
			has been publicly recommended, acknowledged or endorsed.					
All Certificate Classes	ceterms:recommends	Recommends	Recommended credential, learning opportunity or assessment.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:region	Region	Entity that describes the longitude, latitude and other location details of an area.				Existing	Optional
- Pre-Apprentice Certificate - Apprentice Certificate - Journeyman Certificate - Master Trade Certificate - Learning Opportunity Profile - Learning Program - Course	ceterms:registeredBy	Registered By	Agent with which the resource is registered because it has been vetted, approved and validated to meet specific criteria.			- Work-based Learning Certificate - Apprentice Certificate - Journeyman Certificate - Master Trade Certificate	Modified	Recommended Benchmark
All Certificate Classes	ceterms:regulatedBy	Regulated By	Quality assurance organization that enforces the legal requirements of the credential, learning resource or assessment.				Existing	Recommended Benchmark
All Certificate Classes	ceterms:regulatedIn	Regulated In	Region or political jurisdiction such as a state, province or locale in which the credential, learning opportunity or resource is regulated.				Existing	Optional
All Certificate Classes	ceterms:relatedAction	Related Action	Action related to the resource.				Existing	Optional
All Certificate Classes	ceterms:requires	Requires	Requirement or set of requirements for this resource.	Consider using the more specific subproperties of requires such as prerequisite, coPrerequisite, entryCondition, and corequisite, where appropriate.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:reviewProcess	Review Process	Entity that describes the process by which the credential, or aspects of it, are reviewed.				Existing	Optional
All Certificate Classes	ceterms:revocation	Revocation	Entity that describes the processes and criteria for ending (revoking) the validity or	Generally, revocation applies to certifications and licenses; however, it			Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
			operation of an awarded credential.	may also apply to other types of credential under extraordinary circumstances.				
All Certificate Classes	ceterms:revocationProcess	Revocation Process	Entity describing the process by which the credential is revoked.				Existing	Optional
All Certificate Classes	ceterms:revokedBy	Revoked By	Organization or person that handles revocation of an awarded credential due to violations or failure to renew.				Existing	Optional
All Certificate Classes	ceterms:revokedIn	Revoked In	Region or political jurisdiction such as a state, province or locale in which the credential can be revoked.				Existing	Optional
All Certificate Classes	ceterms:sameAs	Same As	Another source of information about the entity being described.	Other sources may include descriptions of entities in open databases such as DBpedia, Wikidata, the Credential Engine Registry, or other platforms.			Existing	Optional
All Certificate Classes	ceterms:subject	Subject	Words or brief phrases describing the topicality of the entity; select subject terms from an existing enumeration of such terms.	Use the subject property to reference a concept in a controlled vocabulary. Free text subjects should use the keyword property.			Existing	Recommended Benchmark
All Certificate Classes	ceterms:subjectWebpage	Subject Webpage	Webpage that describes this entity.	The web page being referenced describes the entity. The value of subjectWebpage is an authoritative location for information about the subject but should not be assumed to be a persistent identifier of the subject.			Existing	Required
All Certificate Classes	ceterms:supersededBy	Superseded By	Resource that replaces this resource.	For example, a credential that outright replaces the credential being described, and is			Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
				not simply a newer version of the same credential (the two credentials have different CTIDs).				
All Certificate Classes	ceterms:supersedes	Supersedes	Resource that this resource replaces.	For example, the credential that is outright replaced by the credential being described, and is not simply an older version of the same credential (the two credentials have different CTIDs).			Existing	Optional
All Certificate Classes	ceterms:targetPathway	Target Pathway	Pathway in which this resource is a potential component.				Existing	Optional
All Certificate Classes	ceterms:usesVerificationService	Uses Verification Service	Reference to a service that is used to verify this Credential.				Existing	Optional
All Certificate Classes	ceterms:versionIdentifier	Version Identifier	Alphanumeric identifier of the version of the resource that is unique within the organizational context of its owner.	The resource version captured here is any local identifier used by the resource owner to identify the version of the resource in the local system.	Locally unique identifiers are acceptable; however, globally unique URI or GUID/UUID are preferred.		Existing	Optional
Registration Action	ceterms:actingAgent	Acting Agent	Organization or person performing an action.				Existing	Required
Registration Action	ceterms:actionStatusType	Action Status Type	Entity describing the current disposition or standing of an action; select from an existing enumeration of such types.			ceterms:credentialingAction ceterms:relatedAction	Existing	Optional
Registration Action	ceterms:ctid	CTID	Globally unique Credential Transparency Identifier (CTID) by which the creator, owner or provider of a resource recognizes it in transactions with the external environment (e.g., in verifiable claims involving the resource).	The CTID is the equivalent of a version identifier for the resource. Different versions of a resource are considered distinct expressions and each must be assigned its own CTID. Each version		ceterms:credentialingAction ceterms:relatedAction	Existing	Required

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
				of a resource can have only one CTID assigned. However, a single version of a resource may have distinct identifier values for both the ctid property and the credentialId property. In such a case both identifiers will be recognized by the resource creator/owner/provider in transactions with the external environment.				
Registration Action	ceterms:description	Description	Statement, characterization or account of the entity.			ceterms:credentialingAction ceterms:relatedAction	Existing	Required
Registration Action	ceterms:endDate	End Date	Date some event or activity ends.			ceterms:credentialingAction ceterms:relatedAction	Existing	Optional
Registration Action	ceterms:evidenceOfAction	Evidence of Action	Entity that proves that the action occurred or that the action continues to be valid.	The evidence verifies the information in the action and is particular to it. It is not a directory of such evidentiary entities or a description of how such verifications might generically be characterized.		ceterms:credentialingAction ceterms:relatedAction	Existing	Optional
Registration Action	ceterms:instrument	Instrument	Object that helped the agent perform the action. e.g. John wrote a book with a pen.	A credential or other instrument whose criteria was applied in executing the action.		ceterms:credentialingAction ceterms:relatedAction	Existing	Required
Registration Action	ceterms:name	Name	Name or title of the resource.			ceterms:credentialingAction ceterms:relatedAction	Existing	Required
Registration Action	ceterms:object	Object	Object upon which the action is carried out, whose state is kept intact or changed.			ceterms:credentialingAction ceterms:relatedAction	Existing	Required
Registration Action	ceterms:participant	Participant	Co-agents that participated in the action indirectly.			ceterms:credentialingAction ceterms:relatedAction	Existing	Optional

A Class	B URI	C Label	D Definition	E Comment	F Usage Note	G Range	H Status	I Policy
Registration Action	ceterms:startDate	Start Date	Date the validity or usefulness of the information in this resource begins.			ceterms:credentialingAction ceterms:relatedAction	Existing	Optional