











Rule ID number	Description	Error message(s)	What does this error mean?
CF05	One or more <CompetencyObject> tags must exist with the “program-level-competency” <category> assigned. An error is generated if a submission does not include one or more program-level competencies.	No competency objects have been categorized as program-level. At least one program-level competency is required.	A school's CI must include program objectives. If you get this error, it means your CI submission is missing your school's program objectives.
CF06	All sequence block-level <CompetencyObject> tags must have a corresponding <CompetencyObjectReference> tag within a <SequenceBlock> tag. An error is generated if a sequence block-level competency object is not referenced by at least one sequence block.	The sequence block-level competency object %s must be referenced by at least one sequence block.	Each course/module learning objective must be referenced by at least one course/module. If you get this error, it means the identified course/module learning objective(s) were not referenced by any courses/modules.
CF17	All event-level <CompetencyObject> tags must have a corresponding <CompetencyObjectReference> tag within an <Event> tag. An error is generated if an event-level competency object is not referenced by at least one event.	The event-level competency object %s must be referenced by at least one event.	Each event learning objectives must be referenced by at least one event. If you get this error, it means that the identified event level learning objective(s) were not referenced by any events.
CF22*	A <CompetencyObject> with a “program-objective-domain” <Category> cannot be referenced in a <CompetencyObjectReference> tag.	Program-objective-domains cannot be referenced. Course %s references program-objective-domain %s  Program-objective-domains cannot be	Program objective domains cannot be referenced by curricular content. They can only be related to program objectives. If you get this error, it means that one of your courses or events is referencing the identified program objective domain.

		<p>referenced. Event %s references program- objective- domain %s</p> <p>Program- objective- domains cannot be referenced. Integration Block %s references program- objective- domain %s</p>	
Rule ID number	Description	Error message(s)	What does this error mean?
CF16	The Title sub-element for each <lom> for each <CompetencyObject> should not contain characters outside of the Unicode Latin script and must contain at least one alphabetic character.	The Title sub-element for %s must contain at least one alphabetic character.	Learning objectives' text need to use written words. If you get this error, it means the specified learning objective is missing actual words (e.g., it is blank, it uses numbers instead of words, etc.).
CF18	The identifier and catalog sub-element for each <lom> must be defined for each <CompetencyObject>. An error is generated if no URI is provided for the competency object, or the URI catalog is not declared as <lom:catalog>URI</lom:catalog>.	You need to provide an identifier (URI) for the following competency so it can be referenced and related in your submission: %s	Learning objective identifiers need to be indicated as unique identifiers. URI is the sort of identifier used in the CI, and it's defined as a type of catalog. If you get this error, it means the named competency object didn't get its unique identity marked with <lom:catalog>URI</lom:catalog> exactly. See Appendix E for examples.
CF20*	The <Title> of a <CompetencyObject> with a "program-objective-domain" <Category> must be greater than 5 characters in length, and less than 200 characters in length.	Program-objective-domain %s must be greater than 5 characters in length.	If you get this error, it means the specified program objective domain is outside the accepted character counts for program objective domains.

		Program-objective-domain %s must be less than 200 characters in length.	
Rule ID number	Description	Error message(s)	What does this error mean?
CF16	The Title sub-element for each <lom> for each <CompetencyObject> should not contain characters outside of the Unicode Latin script and must contain at least one alphabetic character.	The Title sub-element for %s must contain at least one alphabetic character.	Learning objectives' text need to use written words. If you get this error, it means the specified learning objective is missing actual words (e.g., it is blank, it uses numbers instead of words, etc.).
<b>&lt;Includes&gt; Tags</b>			
CF07*	<Includes> tags should contain any competency – including PCRS, program-objective-domain, program-level, sequence block-level, and event-level competencies – that is subsequently used in a <Relation> tag. An error is generated if a <Relation> tag refers to a competency URI that does not have a corresponding <Includes> tag.	Competency object %s is referenced in a 'Relation' tag but was not referenced in a corresponding 'Includes' tag.	Each learning objective that has a relationship to at least one other learning objective must be included in the competency framework. If you get this error, it means the identified learning objective has a relationship with another learning objective but was not identified for inclusion within the competency framework.
CF08	The same URI cannot be present in two or more <Includes> tags. An error is generated if a duplicate URI is identified in <Includes> tags.	Competency object %s is referenced by more than one 'Includes' tag.	Each learning objective's URI (unique ID) must be listed in the "Includes" portion of the competency framework only once. If you get this error, it means the same learning objective URI has been listed in the "Includes" portion of the competency framework more than once.
<b>&lt;Relation&gt; Tags</b>			
CF09*	<CompetencyFramework> relationships that map program-level, sequence block-level, and event-level competency pairs must be specified in a <Relation> tag using either the #broader or #narrower relationship. Valid relationships are described by	Invalid relationship. %s cannot be #broader than %s.	Learning objective relationships must be documented in a hierarchical order – program objective domains contain program objectives, program objectives contain course/module objectives (i.e., sequence blocks), which contain event objectives. The direction of the relationship (e.g., program

	the relationship tables in Appendix D. An error is generated if a relationship of the type is not specified in conformance with the relationship tables.	Invalid relationship. %s cannot be #narrower than %s.	objective is hierarchically superior to course/module objective), is communicated using the concepts of "broader" and "narrower" in the MedBiquitous competency framework specifications. If you get this error, it means that broader relationship has been used when narrower relationship was expected, or vice versa.
Rule ID number	Description	Error message(s)	What does this error mean?
CF10	All program-level competencies must be mapped to one or more PCRS competency statements. An error is generated if a program-level competency does not have a corresponding <Relation> tag that relates it to a PCRS URI.	The program-level competency object %s does not have a corresponding 'Relation' tag	Each program level learning objective must be related to at least one <a href="#">PCRS competency</a> statement. If you get this error, it means that you have at least one program objective that is missing its relation to a PCRS competency statement.
CF21*	Each <CompetencyObject> with a "program-objective-domain" <Category> must have a valid <Relation> to at least one <CompetencyObject> with a "program-level-competency" <Category>.	Program-objective-domain %s must have a valid relationship with a program-level-competency object	Each program objective domain must be related to one or more program objective. If you get this error, it means the identified program objective domain has not been related to even one program objective.
CF19*	A <Relation> containing a <CompetencyObject> with a "program-objective-domain" <Category> must also include a <CompetencyObject> with a "program-level-competency" <Category> using either the #broader or #narrower relationship, depending on how the competency relationship is structured. See Appendix D.	Program-objective-domain %s may not have a relationship with the sequence block-level competency %s.  Program-objective-domain %s may not have a relationship with the	Program objective domains may only be related to program objectives. If you get this error, it means the identified program objective domain has a relationship with the identified competency object which is not a program objective.

		<p>event-level competency %s.</p> <p>Program-objective-domain %s may not have a relationship with the program-objective-domain %s.</p> <p>Program-objective-domain %s may not have a relationship with the PCRS %s.</p>	
Rule ID number	Description	Error message(s)	What does this error mean?
CF11	<p>Program-level competencies may not be mapped to domain-level PCRS (e.g., 1.00 - 'Patient Care'); they must be mapped to PCRS such as 1.07 - 'Develop and carry out patient management plans'). An error is generated if a program-level competency attempts to map to a domain-level PCRS URI.</p>	<p>Invalid relationship. The program-level competency object %s may not be related to a domain-level PCRS.</p>	<p>The <a href="#">PCRS</a> contains 8 domains, and within those 8 domains, dozens of competency statements. Each school program objective must be related to at least one individual PCRS competency statement and cannot be related to any PCRS domains. This error means at least one program objective is related to a PCRS domain (e.g., 1.00 - Patient Care).</p>
CF12	<p>Mapping of program-level competencies to PCRS must be specified in &lt;Relation&gt; tags using a #related relationship. An error is generated if a &lt;Relation&gt; tag that includes a PCRS URI uses a #broader or #narrower relationship.</p>	<p>Invalid relationship. The relationship between program-level competency %s and PCRS %s cannot be #broader or #narrower.</p>	<p>There are three competency relationship types, broader, narrower, and related. PCRS may only have the <i>related</i> relationship and may only have the related relationship with program level learning objectives. If you get this error, it means the PCRS have been assigned a broader or narrower relationship with the program-level learning objective, instead of a related relationship.</p>

CF23*	A program-objective-domain cannot be narrower than a program-level-competency.	Invalid relationship. Program-objective-domain %s cannot be #narrower than program-level-competency %s.	In each relationship among two learning objectives, one is listed first, and one is listed second. If the program objective is listed first, and the program objective domain is listed second, the only relationship that can be used is broader. If you get this error, it means that the identified program objective domains were documented as being narrower than the identified program objectives.
Rule ID number	Description	Error message(s)	What does this error mean?
CF24*	A program-level-competency cannot be broader than a program-objective-domain.	Invalid relationship. Program-level-competency %s cannot be #broader than program-objective-domain %s.	In each relationship among two learning objectives, one is listed first, and one is listed second. If the program objective domain is listed first, and the program objective is listed second, the only relationship that can be used is narrower. If you get this error, it means that the identified program objectives were documented as being broader than the identified program objective domains.
CF13	Mapping of sequence block-level or event-level competencies directly to PCRS is not allowed. They must be mapped through program-level competencies. An error is generated if a <Relation> tag includes a PCRS URI #related <Relationship> with any competency other than a program-level competency.	Invalid relationship. %s cannot be #related to %s. A #related relationship must reference a PCRS and a program-level competency.	<a href="#">PCRS</a> competency statements cannot be linked to course/module or event level learning objectives. If you get this error, it means that there is a relationship between a PCRS competency statement and a course/module or event level learning objective.
CF14	Relationships must not result in circular references as described in the 'Note about Hierarchical Conflict' section (pp. 33-36) of the <a href="#">Competency Framework Specification</a> , version 1.0. An error is generated if a circular reference between competencies is detected.	A hierarchical conflict exists in the competency framework due to a circular reference among multiple 'Relation' tags, as follows: %S	The MedBiquitous competency framework must be considered as a logical structure - program objectives contain course/module objectives, which contain event objectives. For example, if A is over B and B is over C, then C cannot be over A. If you get this error, it means that there is an illogical relationship among two or more learning objectives.

		%s and %s are referenced in two conflicting relationships (one #broader and one #narrower).		
Rule ID number	Description	Error message(s)	What does this error mean?	
CF15	Several sub-elements and attributes of the CompetencyFramework or CompetencyObject elements are restricted in text length. The maximum allowable field lengths are summarized below. An error is generated if any field exceeds its maximum allowable length. Please note that this field size restriction relates to English characters; if any foreign characters are in the text, allowable characters size might reduce.	The following text contained in the CompetencyFramework or in a CompetencyObject tag exceeds the maximum allowable field length of %s : %s.	Each field (e.g., learning objective, course/module title, etc.) in a CI submission has a maximum character count. The maximum character counts vary by field. If you get this error, the business rule error message will specify which text has exceeded the maximum number of characters allowed for that field.	
		<b>Parent Element</b>	<b>Sub-element or Attribute</b>	<b>Max Length</b>
		CompetencyFramework	Lom:General:Title	1500
			Lom:General:Description	1500
		CompetencyObject	Lom:Entry (i.e., URI)	1500
			Lom:Title	1500
	Lom:Description		1500	

### Curriculum Inventory Structure (CS) Rules

The following rules are evaluated only once all core rules (CR) 2 have been met. If it is detected that a submission does not meet a curriculum inventory structure (CS) rule, a) processing of the submission continues to the extent possible and b) upon completion of processing an error notification is sent via email that summarizes all CS and CF rule errors. To see the details of which CS errors were triggered by a given CI XML file, you can login to the CI Portal (or CI Staging), go to your Upload (2022) tab, and export the error details from your Activity History.

Rule ID number	Description	Error message(s)	What does this error mean?
	<CurriculumInventory> Tag		

CS01	The <ReportID> sub-element must be unique for each of a school's submissions and may only use alphanumeric characters (i.e., no punctuation or symbols). An error is generated if a school's submission uses the same <ReportID> as one of its prior submissions or uses invalid characters in the <ReportID>.	Report ID %s includes invalid characters. Only alphanumeric characters are allowed (i.e., no punctuation). Report ID %s matches the ID of a previous submission for institution ID %s.	Each CI XML file includes a <ReportID> that is supplied by the data sender (school or vendor). If you get this error, it means that the CI XML data file uploaded to the AAMC re-used a previously used <ReportID> or that the <ReportID> used characters other than letters or numbers.
Rule ID number	Description	Error message(s)	What does this error mean?
CS02	Submissions are checked to ensure they contain information for only the previous academic year (AY). Schools must submit data with <ReportingStartDate> and <ReportingEndDate> in between July 1 (of the previous year) and June 30 (of the current year). For example, in a submission for AY 2022, it would be an error if the reporting start date is before July 1, 2021. An error is generated if the <ReportingStartDate> does not precede the <ReportingEndDate>. Dates at the sequence block or event level are <u>not</u> checked to ensure they are within the previous academic year. Dates specified at these levels that fall within 8 years of the date range for a previous academic year will not cause an error or rejection.	<p>The reporting end date is not within acceptable date limits.</p> <p>The reporting end date precedes or matches the reporting start date.</p> <p>The reporting start date is not within acceptable date limits.</p>	The CI XML data file includes fields for <ReportingStartDate> and <ReportingEndDate>. The reporting dates must be within the span of July 1 of the previous year and June 30 of the current year, and the start date must precede the end date.
<b>&lt;AcademicLevels&gt; Tag</b>			
CS03	The number of academic levels, or phases, are defined by <LevelsInProgram> and each academic level is defined as a <Level> within the <AcademicLevels> tag. An error is generated if there is a mismatch between	The number in 'LevelsInProgram' tag does not correspond with the number of levels defined in 'Level' tags.	In a CI XML file, a school indicates how many phases (i.e., academic levels) their curriculum includes. If you get this error, the number you indicated in <LevelsInProgram> was not the same as the number of phases indicated with <Level> tags.

Rule ID number	Description	Error message(s)	What does this error mean?
CS04	<p>A &lt;Level&gt; that is not defined within the &lt;AcademicLevels&gt; tag cannot be referenced by a sequence block. An error is generated if a &lt;SequenceBlock&gt; attempts to refer to an undefined academic level.</p>	<p>The level ID %s referenced by sequence block ID %s does not have a corresponding 'Level' tag. The Ending Academic level ID %s referenced by sequence block ID %s does not have a corresponding 'Level' tag. The Starting Academic level ID %s referenced by sequence block ID %s does not have a corresponding 'Level' tag.</p>	<p>In your CI XML file, you must define your phases (i.e., academic levels) before you reference them by course/modules (i.e., sequence blocks). If you get this error, it means that the identified course/module(s) references a phase which was not listed in the &lt;AcademicLevels&gt; section of your XML.</p>
CS05	<p>&lt;Level&gt; sub-elements of the &lt;AcademicLevels&gt; tag must have sequential numbers (i.e., the <i>number</i> attribute) starting with 1. An error results if a submission has academic levels that are not sequential <u>or</u> does not start with 1. An error is also generated if a submission has academic levels with duplicate level ID values.</p>	<p>The level ID %s is used to identify more than one 'level' tag definition. The 'Level' tags should be in sequence starting with 1. A skip in the sequence or irregular sequence of 'Level' tags is not allowed. They may continue up to 10. The sequence of 'level' tags should begin with 1.</p>	<p>Phases must be identified as happening sequentially, i.e. 1, 2, 3, 4, and the list must start at 1. If you get this error, either the phases did not start at 1, and/or that the phase numbers are not in sequential order.</p>

CS06	Each academic level must be referenced by at least one sequence block. An error is generated if a <Level> tag is not referenced by at least one <SequenceBlock> tag.	At least one sequence block must reference the level ID %s.	Each phase (i.e., academic level) must have at least one course/module (i.e., sequence block) in it. If you get this error you have indicated a phase as part of your curriculum without populating it with any course/modules.
Rule ID number	Description	Error message(s)	What does this error mean?
CS25*	Each <SequenceBlock> must include a <StartingAcademicLevel> that precedes its <EndingAcademicLevel>. A business rule error is generated if the <StartingAcademicLevel> occurs after the <EndingAcademicLevel>.	The Starting Academic Level for Sequence %s must precede or be equal to the Ending Academic Level.	Each course/module must document in which phase of the curriculum it begins and end (required in the MedBiquitous CI Specifications). The majority of course/modules may begin and end in the same phase (e.g., begins in Phase 1, ends in Phase 1), but this element allows schools to model longitudinal courses which cross over more than one phase. If you get this error, it means that a given phase start (e.g., phase 2) occurs before the phase end (e.g., 1).
<b>&lt;SequenceBlock&gt; Tag</b>			
CS07	<SequenceBlock> tags must have unique identifiers (i.e., the id attribute). An error is generated if a <SequenceBlock> identifier is duplicated.	The sequence block ID %s is used to identify more than one sequence block definition.	Each course/module needs a unique identification code so it can be meaningfully integrated into the curricular structure. If you get this error, it means that a course/module unique ID was applied to more than one course/module, instead of using a unique ID code for each course/module.
CS17	The <Timing> sub-element of all <SequenceBlocks> tags must specify a <Dates> element. The <StartDate> must precede the <EndDate>. An error is generated if the start date and end date are not specified for a sequence block, or if the <StartDate> does not precede the <EndDate>.	The 'Dates' tag is not specified in the sequence block %s. The end date of %s precedes the start date.	Course/modules must have start and end dates, and the start date of a course/module must be before the course/module's end date. If you get this error, it means that either a start or end date for a course/module are missing, or a start date was incorrectly entered as occurring after the end date.
CS09*	The <Timing> sub-element of <SequenceBlocks> tags must specify <Dates> and <Duration>. An error is generated if the duration, start date, and end date is not specified for a sequence block.	The 'Dates' and 'Duration' tags are not both specified in the identified sequence block(s) %s.	All course/modules must have a duration in days as well as a start and end date. If you get this error, it means that the course/modules indicated in the error are missing their dates and/or duration.
CS20	The <StartDate> and <EndDate> sub-elements of <Dates>, a sub-	The start date for sequence block:	Your CI XML data file will have a reporting start and end date. All curriculum

	element of <Timing>, must be no earlier or later than 8 calendar years before or after the <ReportingStartDate> and <ReportingEndDate>.	%s must be no earlier or later than 8 years before or after the reporting end date. The start date for sequence block: %s must be no earlier or later than 8 years before or after the reporting start date.	experiences within the CI XML data file, including course/modules and events, must occur within 8 years of your CI XML data file's reporting start date and reporting end date.
Rule ID number	Description	Error message(s)	What does this error mean?
CS21	The <StartDate> and <EndDate> sub-elements of <SequenceBlockEvent>, a sub-element of <SequenceBlock>, must be no earlier or later than 8 calendar years before or after the <ReportingStartDate> and <ReportingEndDate>.	The end date in sequence block event %s referred in sequence block: %s must be no earlier or later than 8 years before or after the reporting start date. The start date in sequence block event %s referred in sequence block: %s must be no earlier or later than 8 years before or after the reporting start date.	Your CI XML data file will have a reporting start start and reporting end date. All course/modules and events must occur within 8 years of your CI XML data file's reporting start date and reporting end date.
CS16	If it is provided, the duration of a sequence block must be specified as a number of days. An error is generated if the <Duration> (sub-element of <Timing>) for a sequence block includes any units of time other than days. As described in rule	A unit other than days is used to specify duration in sequence block ID %s.	Course/module durations need to be specified in days, not other units of time (such as weeks or months). If you get this error, it means a unit other than days was used to document duration for a course/module.

	CS09, duration is required for clerkship sequence blocks.		
Rule ID number	Description	Error message(s)	What does this error mean?
CS10	When nesting sequence blocks, <SequenceBlockReference> must not result in circular references. An error is generated if a circular reference between sequence blocks is detected.	A hierarchical conflict exists in the curriculum structure due to circular references among sequence blocks, as follows: %s	Curricular structures must make logical sense - a 'parent' course/module may contain a 'child' course/module, but that 'child' course/module cannot then contain the 'parent' course/module.
CS24	A Sequence Block ID that is not defined by a corresponding <SequenceBlock> tag cannot be referenced by a sequence block. An error is generated if a <SequenceBlockReference> attempts to refer to an undefined sequence block.	Sequence %s referenced by sequence block %s does not have a corresponding 'Sequence' tag.	In your CI XML file, you must define your course/modules (i.e., sequence blocks) before you reference them as nested course/modules (i.e., sequence blocks). If you get this error, it means that the referenced course/module ID was not listed in the <SequenceBlock> section of your XML.
<b>&lt;Event&gt; Tag</b>			
CS11	<Event> tags must have unique identifiers (i.e., the id attribute). An error is generated if an <Event> identifier is duplicated.	The event ID %s is used to identify more than one event definition.	Each event needs to be uniquely identified so it can be referenced by a course/module. If you get this error, it means an event ID code has been used for more than one event.
CS15	All <Event> tags must be referenced by at least one <SequenceBlockEvent> tag within a <SequenceBlock>. An error is generated if an <Event> is not referenced by one or more <SequenceBlock>.	Event %s is not referenced by any sequence block.	Events must be within a course/module. If you get this error, it means one or more events in your CI have not been assigned to a course/module.
CS18	An Event ID that is not defined by a corresponding <Event> tag cannot be referenced by a sequence block. An error is generated if a <SequenceBlock> attempts to refer to an undefined event.	Event %s referenced by sequence block %s does not have a corresponding 'Event' tag.	Course/modules cannot refer to events that do not exist in the CI XML file. If you get this error, it means that either the course/module identifier needs to be changed to one that exists in the CI XML data file, or the event needs to be documented before it can be referenced by a course/module.
CS12	Within <Event> tags, the <ResourceType>, <InstructionalMethod>, and	The %s specified in event ID %s is not a valid	Events may only use the standardized identifiers and their associated definitions to indicate their resources, instructional





		Keyword	4000
Level		Label	50
		Description	4000
Sequence		Description	4000
SequenceBlock		ID	15
		Title	2000
		Description	4000
		Minimum	3
		Maximum	3
		Timing:Dates:StartDate	100
		Timing:Dates:EndDate	100
		Precondition	4000
		Postcondition	4000
		SequenceBlockReference:Order	3
SequenceBlockEvent		StartDate	100
		EndDate	100
Integration		Description	4000
IntegrationBlock		ID	15
		Title	4000
		Description	4000