

CPCC Certification

Mathematics Course Rubric

School:

Course:

Evaluators:

Working Definition:

A “college-ready” course consists of intellectually rigorous coursework that covers sufficient content knowledge and requires students to demonstrate the higher-order thinking skills that will enable them to engage independently in non-remedial college level work.

Thank you for helping the DOE to evaluate high school courses for CPCC certification.

The CPCC certification process is designed to recognize high school courses that are preparing students for college and to reward schools with credit on the college readiness metric of the Progress Report for all students who pass one these courses. In order to earn CPCC certification, a course must pass both a quantitative and a qualitative evaluation.

This packet is designed to help you make a qualitative determination of the college-readiness of a course. The qualitative evaluation focuses on two main areas: **Content** and **Academic Rigor**.

What you should have

In addition to this evaluation packet, you should also have received a complete application for the course you are evaluating. That application should include the following:

1. A syllabus, curriculum map, scope and sequence, or equivalent document
2. A list of all key texts that are used in the course
3. Copies of all major assignments that students are expected to complete (including rubrics, scoring guides, etc.)
4. Copies of graded student work for three major assignments
5. An explanation of the grading policy
6. An explanation of any prerequisite requirements for student to enroll in the course
7. Written responses to short answer questions

Where you can confidently make a decision on the course's qualitative evaluation outcome (in either direction), please do so. If you require the submission of an additional course artifact or document, please contact Valerie Samn (vsamn@schools.nyc.gov).

What is included in the application review packet

1. **Two worksheets**, one for each category – these worksheets are intended to help you focus on aspects of the application that pertain to the categories covered in the rubric.
2. A **rubric** with 2 categories.
3. A **matrix** that demonstrates how the Rubric Determinations will be used in the Overall Determination.
4. A **reviewer recommendation** section where you will provide a recommendation based on your overall impression of the course.
5. An **application feedback form** where you will provide concrete strengths and areas for growth/areas of concern that will be shared with the school.

Recommended use of the packet

1. Read the application.

2. Fill out the rubric.

The category worksheets are included to assist in your rubric determination. While they are not officially “counted” as part of the evaluation, we ask that you complete them as part of your review process.

3. Complete the Reviewer Recommendation.

Based on your review of the entire application, would you recommend that this course be certified as college-ready? Why or why not?

4. Complete the Application Feedback form.

a. What are some strengths of the course that emerge from the application?

b. What are some areas for growth (for course to be certified) or areas of concern (courses the do not meet certification criteria) that emerge from the application?

CONTENT– Worksheet (Mathematics)	Very Often	Often	Somewhat Often	Infrequent or Never
<p><i>Based on the evidence provided, are students prepared for the content knowledge expectations of students who enroll in a non-remedial college Mathematics course in the specific subject (e.g. Calculus, Statistics, etc.)?</i></p> <ul style="list-style-type: none"> • Students understand the KEY concepts or big ideas of the subject. See attached subject-specific concept lists (if available) to help you guide your determination. 				
<p><i>Based on the evidence provided, are students asked to and prepared to demonstrate the Mathematical Practices from the NYC-CCLS?</i></p> <ul style="list-style-type: none"> • Students make sense of problems and persevere in solving them. (MP.1) • Students reason abstractly and quantitatively. (MP.2) • Students construct viable arguments and critique the reasoning of others. (MP.3) • Students model with mathematics. (MP.4) • Students use appropriate tools strategically. (MP.5) • Students attend to precision. (MP.6) • Students look for and make use of structure. (MP.7) • Students look for and express regularity in repeated reasoning. (MP.8) 				

CONTENT DEMAND – Mathematics

	Content Demand	YES	NO
Algebra	<ul style="list-style-type: none"> Students interpret the structure of expressions. 		
	<ul style="list-style-type: none"> Students write expressions in equivalent forms to solve problems. 		
	<ul style="list-style-type: none"> Students perform arithmetic operations on polynomials. 		
	<ul style="list-style-type: none"> Students use polynomials to solve problems. 		
	<ul style="list-style-type: none"> Students rewrite rational expressions. 		
	<ul style="list-style-type: none"> Students create equations that describe numbers or relationships. 		
	<ul style="list-style-type: none"> Students engage in the process of solving equations and explain their reasoning. 		
	<ul style="list-style-type: none"> Students solve equations and inequalities in one variable. 		
	<ul style="list-style-type: none"> Students solve systems of equations and inequalities graphically. 		
Geometry	<ul style="list-style-type: none"> Students experiment with transformations in the plane. 		
	<ul style="list-style-type: none"> Students understand congruence in terms of rigid motions. 		
	<ul style="list-style-type: none"> Students prove geometric theorems. 		
	<ul style="list-style-type: none"> Students make geometric constructions. 		
	<ul style="list-style-type: none"> Students understand similarity in terms of similarity transformations. 		
	<ul style="list-style-type: none"> Students prove theorems involving similarity. 		
	<ul style="list-style-type: none"> Students apply trigonometry to general triangles. 		
	<ul style="list-style-type: none"> Students understand and apply theorems about circles. 		
	<ul style="list-style-type: none"> Students find arc lengths and areas of sectors of circles. 		
	<ul style="list-style-type: none"> Students translate between the geometric description and the equation for a conic section. 		
	<ul style="list-style-type: none"> Students use coordinates to prove simple geometric theorems algebraically. 		
	<ul style="list-style-type: none"> Students explain volume formulas and use them to solve problems. 		
	<ul style="list-style-type: none"> Students apply geometric concepts in modeling situations. 		
Statistics	<ul style="list-style-type: none"> Students summarize, represent, and interpret data on a single-count or measurement variable. 		
	<ul style="list-style-type: none"> Students summarize, represent, and interpret data on two-categorical and quantitative variables. 		
	<ul style="list-style-type: none"> Students interpret linear models. 		
	<ul style="list-style-type: none"> Students evaluate random processes underlying statistical experiments. 		
	<ul style="list-style-type: none"> Students make inferences and justify conclusions from sample surveys, experiments, and observational studies. 		
	<ul style="list-style-type: none"> Students use independence and conditional probability to interpret data. 		
	<ul style="list-style-type: none"> Students use the rules of probability to compute probability of compound events in a uniform probability model. 		
	<ul style="list-style-type: none"> Students calculate expected values and use them to solve problems. 		
	<ul style="list-style-type: none"> Students use probability to evaluate outcomes of decisions. 		

ACADEMIC RIGOR – Worksheet (Mathematics)	Very Often	Often	Somewhat Often	Infrequent or Never
<i>Based on the evidence provided, is the course material that students are expected to master sufficiently rigorous and intellectually challenging?</i>				
<i>In order to pass the course, are students expected to complete tasks that demonstrate mastery independently without significant assistance from the teacher or peers?</i>				
<p><i>Based on the evidence provided, are students asked to complete tasks that ask them to use strategic thinking and reasoning (DOK Level 3) and/or extended thinking (DOK Level 4)?</i></p> <ul style="list-style-type: none"> • Course work requires students to use reasoning and to develop a plan to approach a problem. • Course work requires decision-making and justification. • Course work requires students to go beyond the text and explain, generalize, or connect ideas. • Course work requires students to develop a logical argument and cite evidence. • Course work involves an investigation or application to real world problems. • Course work requires students to analyze or synthesize information for multiple sources. • Course work requires time to research, problem solve, and process multiple conditions of the problem or task. 				

Mathematics Course Rubric

Category I: CONTENT

- *Is the material taught in this class the material that students are expected to know when beginning an introductory level course in this subject?*
- *Are students who pass this course prepared with the skills they will need to succeed in an introductory level course in this subject?*
- *Are students who pass this course expected to engage in the practices that are authentic to this subject?*

	<i>Considering the determinations you made using the Content Worksheet criteria, how would you rate the CONTENT of this course?</i>
College-Ready	<ul style="list-style-type: none"> • Students who pass the class will have clearly mastered relevant topics at an appropriate level in the Common Core Learning Standards (CCLS) or beyond. • The CCLS Mathematical Practices are consistently and clearly embedded in this course.
Likely College-Ready	<ul style="list-style-type: none"> • Students are exposed to most relevant topics at an appropriate level in the CCLS or beyond. • The CCLS Mathematical Practices are clearly embedded in this course, but more consistency or stronger emphasis may be needed.
Potentially College-Ready	<ul style="list-style-type: none"> • Students are exposed to some of the relevant topics at an appropriate level in the Common Core Learning Standards (CCLS) or beyond. • The CCLS Mathematical Practices may be embedded in this course, but more consistency or stronger emphasis may be needed.
Unlikely to be College-Ready	<ul style="list-style-type: none"> • The course does not cover enough of the CCLS content knowledge at an appropriate level. • The CCLS Mathematical Practices embedded in this course are unlikely to help develop skills in these areas.

Category II: ACADEMIC RIGOR

- *Are student expected to complete tasks that are intellectually rigorous?*
- *Are texts used in this course at the appropriate level of complexity and authentic to the subject matter?*
- *In order to pass the course, are students expected to demonstrate mastery of the content and skills and apply what they learn to novel situations without the support of the teacher?*

	<i>Considering the determinations you made using the Academic Rigor Worksheet criteria, how would you rate the ACADEMIC RIGOR of this course?</i>
College-Ready	<ul style="list-style-type: none"> • Students are required to engage in, and demonstrate independent mastery of, very challenging tasks in depth and on a regular basis. • Students are regularly asked to complete demanding work requiring higher-order thinking that will prepare them for an introductory college course.
Likely College-Ready	<ul style="list-style-type: none"> • Students are required to engage in, and demonstrate independent mastery of, challenging tasks in depth and on a regular basis. • Some of the work that students are asked to complete requires higher-order thinking that will prepare them for an introductory college course.
Potentially College-Ready	<ul style="list-style-type: none"> • Academic tasks are challenging but students interact with the material inconsistently OR course content is inconsistently challenging. • Very little of work that students are asked to complete requires higher-order thinking that will prepare them for an introductory college course.
Unlikely to be College-Ready	<ul style="list-style-type: none"> • Academic tasks are either not challenging enough OR students are not required to engage with material at anything but a cursory level. • Almost none of the work that students are asked to complete requires higher-order thinking that will prepare them for an introductory college course.

OVERALL DETERMINATION

In order to “Pass” the Qualitative Evaluation, a course must be eligible for either a 1- or 3-year certification according to the Rubric Determination AND receive a “Yes” designation from the Reviewer Recommendation.

Rubric Determination

		ACADEMIC RIGOR			
		College Ready	Likely College-Ready	Potentially College-Ready	Unlikely to be College-Ready
C O N T E N T	College Ready	3-Year Certification	3-Year Certification	Does not meet	Does not meet
	Likely College-Ready	3-Year Certification	1-Year Certification	Does not meet	Does not meet
	Potentially College-Ready	Does not meet	Does not meet	Does not meet	Does not meet
	Unlikely to be College-Ready	Does not meet	Does not meet	Does not meet	Does not meet

Reviewer Recommendation

Is the work (both the content and the types of tasks) that students are expected to complete at least as challenging as the work in other College and Career Preparatory Course Index (CCPCI) courses?

	<i>Based on your holistic review of the course and considering the entirety of the application, do you recommend that this course receive certification as a “college-ready” course? Indicate Yes or No and then provide a short rationale for your recommendation.</i>
Yes	
No	

Application Feedback

Strengths

Please describe 3 – 5 strengths that emerge from the application.

Ex. All unit tests ask students to apply mathematical concepts to real world problems and to demonstrate their reasoning around these applications in writing.

1.

2.

3.

Areas for Development

Please describe 3 – 5 areas of concern that emerge from the application.

Ex. The application material does not adequately demonstrate course work that involves an investigation of application to real world problems or that requires students to analyze or synthesize information from multiple sources.

1.

2.

3.

