2014–2015 NC Final Exams of Advanced Functions and Modeling and Pre-calculus

North Carolina Assessment Specifications

Purpose of the Assessments

☐ NC Final Exams were developed to replace locally developed assessments, providing teachers and principals with a common measure for all students state-wide during a given testing window.

☐ North Carolina's Final Exams for Advanced Functions and Modeling and Pre-calculus will measure students' academic progress in the 2003 *Standard Course of Study*. The 2003 *Standard Course of Study* may be reviewed at http://maccss.ncdpi.wikispaces.net/HS+Standards.

☐ NC Final Exam scores (along with any other relevant end-of-course or end-of-grade assessment scores) will be used in the Educational Value Added Assessment System (EVAAS) to produce student growth measures to satisfy Standards 6 and 8 of the North Carolina Educator Evaluation System. For more information on the North Carolina Educator Evaluation System, go to: http://www.ncpublicschools.org/effectiveness-model/.

☐ NC State Board of Education policy GCS-A-016 directs schools to use the results from all course-specific NC Final Exams as a minimum of 20% of the student's final course grade.

☐ NC Final Exams will not be used for school and district accountability under the READY Accountability Model or for Federal reporting purposes.

Developing Assessments

North Carolina educators were recruited and trained to write new items for the NC Final Exams. The diversity among the item writers and their knowledge of the current standards was addressed during recruitment. Trained North Carolina educators also reviewed items and suggested improvements, if necessary. The use of North Carolina educators to develop and review items strengthens the instructional validity of the items.

Curriculum and Assessment Cycle

☐ 2003: North Carolina State Board of Education adoption of the *Standard Course of Study*.

☐ 2012–2013: Operational administration of the Measures of Student Learning: Common Exams.

☐ 2013–14: Redesign and subsequent first operational administration of the NC Final Exams.

☐ 2014–15: Second operational administration of the NC Final Exams.

Prioritization of Standards

☐Members of the Test Development section of the North Carolina Department of Public Instruction (NCDPI) invited teachers to collaborate and develop recommendations for a prioritization of the standards indicating the relative importance of each standard, the anticipated instructional time, and the appropriateness of the standard for multiple-choice items.

☐Tables 1 and 2 describe the percentage range of total score points that will appear on the NC Final Exams forms. The table of test specification weights describe the percent of total score points, rather than the percent of total items.

Table 1. Test Specification Weights for the Advanced Functions and Modeling NC Final Exam

2003 *Standard Course of Study*	Percent of Total Score Points
Data Analysis and Probability	
1.01, 1.02	12% to 18%
1.03	27% to 32%
Algebra	
2.01, 2.04, 2.05	35% to 45%
2.02, 2.03	11% to 15%
Total	100%

Table 2. Test Specification Weights for the Pre-calculus NC Final Exam

2003 *Standard Course of Study*	Percent of Total Score Points
Numbers and Operations	
1.01, 1.03	4% to 6%
1.02	8% to 12%
Geometry and Measurement	
2.01, 2.05	22% to 26%
2.02, 2.04, 2.07, 2.08	54% to 60%
2.03, 2.06	4% to 7%
Total	100%

Cognitive Rigor

☐Advanced Functions and Modeling and Pre-calculus items were aligned to the content standards using Marzano's *Thinking Skill Levels*. To read more about North Carolina's *Thinking Skill Levels* and how they were used to align items to the 2003 SCS read http://www.ncpublicschools.org/docs/accountability/testing/eog/asb_thkskl.pdf.

Types of Items and Supplemental Materials

☐ The NC Final Exams for Advanced Functions and Modeling and Pre-calculus will consist of four-response-option multiple-choice items.

☐ Students must be provided a graphing calculator.

☐ Students taking math NC Final Exams will be provided with graph paper.

☐ Formula sheets will be provided to students taking the NC Final Exams of Advanced Functions and Modeling and Pre-calculus.

☐ A complete list of the supplemental test materials (i.e., *2014-2015 NC Final Exams Materials List*) may be reviewed at http://www.ncpublicschools.org/accountability/common-exams/.

☐ Released items, any necessary formula/reference sheets, and graph paper (if applicable) are available at http://www.ncpublicschools.org/accountability/common-exams/released-items/. Released items may be used by school systems to help acquaint students with items. These materials must not be used for personal or financial gain.

Testing Structure and Test Administration Time

☐ The NC Final Exam of Advanced Functions and Modeling contains 37 items. The NC Final Exam of Pre-calculus contains 34 items.

☐ Included in the total item counts are embedded multiple-choice field test items that will not count toward the students score but will be used for purposes of developing items for future test forms.

☐ Students will be given 120 minutes to answer all items. Students should monitor the clock to ensure they allow themselves adequate time to respond to all items.

☐ Appendices A–B show the number of operational items for each standard for the 2014–2015 tests. Note that future coverage of standards could vary within the constraints of the content category weights in *Tables 1 and 2*.

Test Cycle and Delivery Mode

☐ The NC Final Exams are administered to students enrolled in fall and spring courses. A list of course codes that align with the 2014–2015 NC Final Exams (i.e., *Course Codes that Align with the NC Final Exams*) is available at http://www.ncpublicschools.org/accountability/common-exams/.

☐ The NC Final Exams are available for paper-and-pencil mode. However, transition to online administrations is proceeding during the 2014–2015 academic year.

NC Final Exam	Fall 2014 Delivery Mode Option(s)	Spring 2015 Delivery Mode Options
Advanced Functions and Modeling	Paper-and-Pencil only	Paper-and-Pencil and Online via NCTest
Pre-calculus	Paper-and-Pencil only	Paper-and-Pencil and Online via NCTest

Appendix A
Advanced Functions and Modeling NC Final Exam 2014–15
Number of Items by Standard

The following table shows the number of operational items for each standard. Note that future coverage of standards could vary within the constraints of the test specification weights in *Tables 1 and 2*. Some standards not designated with tested items (i.e., "–") may be a prerequisite standard, may be tested within the context of another standard or may be included as an embedded field test item. The 2003 *Standard Course of Study* may be reviewed at http://maccss.ncdpi.wikispaces.net/HS+Standards.

Advanced Functions and Modeling Standard	Number of Items per Standard*
1.01a	–
1.01b	1
1.02a	1
1.02b	1
1.02c	2
1.02d	–
1.02e	–
1.02f	–
1.03a	1
1.03b	3
1.03c	1
1.03d	3
1.03e	–
1.03f	1
2.01a	3
2.01b	3
2.02a	2
2.02b	1
2.03a	2
2.03b	–
2.04a	1
2.04b	2
2.04c	1
2.05a	3
2.05b	1
2.05c	–
2.05d	–

* Some standards not designated with tested items (i.e., "–") may be a prerequisite standard, may be tested within the context of another standard or may be included as an embedded field test item.

Appendix B
Pre-calculus NC Final Exam 2014–15
Number of Items by Standard

The following table shows the number of operational items for each standard. Note that future coverage of standards could vary within the constraints of the test specification weights in *Tables 1 and 2*. Some standards not designated with tested items (i.e., "–") may be a prerequisite standard, may be tested within the context of another standard or may be included as an embedded field test item. The 2003 *Standard Course of Study* may be reviewed at http://maccss.ncdpi.wikispaces.net/HS+Standards.

Pre-calculus Standard	Number of Items per Standard*
1.01	1
1.02a	2
1.02b	1
1.03	1
2.01a	2
2.01b	1
2.02a	2
2.02b	–
2.02c	2
2.03a	–
2.03b	1
2.04	4
2.05a	4
2.05b	–
2.06	1
2.07a	1
2.07b	–
2.07c	2
2.07d	1
2.08	4

∗ Some standards not designated with tested items (i.e., "–") may be a prerequisite standard, may be tested within the context of another standard or may be included as an embedded field test item.