**Assessment 2: Template for Course Grades and/or Transcript Analysis**

**(2020 NCTM Secondary Standards)**

**Instructions**

Completion of this form provides the required information for using grades and/or transcript analysis as evidence of candidates’ content knowledge. This document is designed to be editable so that programs can use only sections that are applicable to program type. Programs should not change the structure of the tables provided, but can delete tables or lines that are not needed. Boxes will expand as needed.

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| **Institution Name** |  |
| **Program Name** |  |
| **Program Type (e.g., Baccalaureate or M.Ed.)** |  |

*Program of Study and Course Descriptions:* A complete program of study and set of official course descriptions for all required courses to be used in this evaluation should be attached separately in Section I of the program report.

**Part 1.** *Description of the Assessment*

Identify the required mathematics major courses chosen for inclusion and supply a rationale for the selection of this particular set of mathematics or mathematics education courses.

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*Transcript Review Process for Post-Bac and Masters Programs*

The following questions should be addressed in cases where a program is using a transcript review for certification. The transcript review form should be attached in Section I of the program report. This section can be deleted for undergraduate only programs.

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| In cases of a transcript review process, describe how the program ensures that the courses being reviewed have the necessary content to be equivalent to the institutional course and that the mathematical domain competencies and mathematical processes indicated are included. This description should include the process used when course titles do not clearly align or courses are taught within related fields. |  |
| What is the limit by which coursework must have been completed? (e.g., within the last 3 years) |  |
| How does the program ensure that graduate candidates have appropriate experience with the use of technology and representational tools within the learning of mathematics? |  |
| When a candidate needs remediation, what is the process for ensuring the candidate receives the appropriate remediation before program completion? |  |

**Part 2.** *Course Alignment with Components of* *NCTM Standards (2020)* *for Secondary*

*Technology and Representational Tools Including Concrete Models by Component*

Describe technology and representational tools, including concrete models, used in **required** courses that address components. Name the course, tools, and component by code (e.g., 1b) in the discussion of how candidates have multiple opportunities to learn with technology and representational tools across domains.

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| **1a) Number and Quantity** |  |
| **1b) Algebra and Functions** |  |
| **1c) Calculus** |  |
| **1d) Statistics and Probability** |  |
| **1e) Geometry, Trigonometry, and Measurement** |  |

*Rationale for Content Preparation through Coursework for Standard 1*

All secondary mathematics teachers should be prepared with depth and breadth in the following mathematical domains: Number; Algebra and Functions; Calculus; Statistics and Probability; Geometry, Trigonometry and Measurement. All teachers certified in secondary mathematics should know, understand, teach, and be able to communicate their mathematical knowledge with the breadth of understanding reflecting the following components for each of these domains. The program should match **required** coursework to individual competencies within each component. The rationale should specifically provide evidence and discussion that justifies how the components indicated in column 1 are addressed in the specific course(s). Additional explanation and examples are available in the supporting explanations and rubrics in the Standards document.

| Standard 1: Knowing and Understanding Mathematics **Candidates demonstrate and apply understandings of major mathematics concepts, procedures, knowledge, and applications within and among mathematical domains of Number; Algebra and Functions; Calculus; Statistics and Probability; Geometry, Trigonometry, and Measurement.** | |
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|  | **Required Course Number(s) and Name(s) with a specific description of how the indicated component is addressed in the course(s)** |
| **1a) Essential Concepts in Number.** Candidates demonstrate and apply understandings of major mathematics concepts, procedures, knowledge, and applications of number including flexibly applying procedures, using real and rational numbers in contexts, developing solution strategies, and evaluating the correctness of conclusions. *Major mathematical concepts in Number include number theory; ratio, rate, and proportion; and structure, relationships, operations, and representations.* |  |
| **1b) Essential Concepts in Algebra and Functions.** Candidates demonstrate and apply understandings of major mathematics concepts, procedures, knowledge, and applications of algebra and functions including how mathematics can be used systematically to represent patterns and relationships including proportional reasoning, to analyze change, and to model everyday events and problems of life and society. *Essential Concepts in Algebra and Functions include algebra that connects mathematical structure to symbolic, graphical, and tabular descriptions; connecting algebra to functions; and developing families of functions as a fundamental concept of mathematics. Additional Concepts should include algebra from a more theoretical approach including relationship between structures (e.g., groups, rings, and fields) as well as formal structures for number systems and numerical and symbolic calculations.* |  |
| ***1c) Essential Concepts in Calculus.*** Candidates demonstrate and apply understandings of major mathematics concepts, procedures, knowledge, and applications of calculus including the [mathematical](https://en.wikipedia.org/wiki/Mathematics) study of the calculation of instantaneous rates of change and the summation of infinitely many small factors to determine some whole. *Essential Concepts in Calculus include limits; continuity; the Fundamental Theorem of Calculus; and the meaning and techniques of differentiation and integration.* |  |
| **1d) Essential Concepts in Statistics and Probability.** Candidates demonstrate and apply understandings of statistical thinking and the major concepts, procedures, knowledge, and applications of statistics and probability including how statistical problem solving and decision making depend on understanding, explaining, and quantifying the variability in a set of data to make decisions. They understand the role of randomization and chance in determining the probability of events. *Essential Concepts in Statistics and Probability include quantitative literacy; visualizing and summarizing data; statistical inference; probability; and applied problems.* |  |
| **1e) Essential Concepts in Geometry, Trigonometry, and Measurement.** Candidates demonstrate and apply understandings of major mathematics concepts, procedures, knowledge, and applications of geometry including using visual representations for numerical functions and relations, data and statistics, and networks, to provide a lens for solving problems in the physical world. *Essential Concepts in Geometry, Trigonometry, and Measurement include transformations; geometric arguments; reasoning and proof; applied problems; and non-Euclidean geometries.* |  |

Components from Standard 2 are included for your convenience, additional components can be added as needed in the same manner and/or components from Standard 2 can be deleted.

| **Component number** | **Required Course Number(s) and Name(s) with a specific description of how the indicated component is addressed in the course(s)** |
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| **2a) Problem Solving.** Candidates demonstrate a range of mathematical problem-solving strategies to make sense of and solve non-routine problems (both contextual and non-contextual) across mathematical domains |  |
| **2b) Reasoning and Communicating.** Candidates organize their mathematical reasoning and use the language of mathematics to express their mathematical reasoning precisely, both orally and in writing to multiple audiences. |  |
| **2c) Mathematical Modeling and Use of Mathematical Models.** Candidates understand the difference between the mathematical modeling process and models in mathematics. Candidates engage in the mathematical modeling process and demonstrate their ability to model mathematics. |  |

**Part 3.** *Grade Policy and Minimum Expectation*

Submit grading policy/definitions of grades that are used by the institution or program and the minimum expectation for candidate performance (e.g., candidates must achieve a C or better in required coursework).

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**Part 4.** *Data Tables*

Select the appropriate combination of data tables. The number of completers in the data tables for each academic year must be consistent with the number of completers reported in Section I of the program report.

Data Table A (Coursework Taken at Submitting Institution)

Data Table A is to be used for undergraduate and graduate completers whose mathematics and/or mathematics education coursework is mostly completed at the submitting institution. Mean course grades and grade distribution (range) in selected required mathematics or mathematics education courses, number of undergraduate or graduate completers, and percentage of completers meeting the minimum expectation disaggregated by level (e.g., undergraduate or graduate program completers) and by academic year must be included.

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| **Grades in Required Mathematics and/or Mathematics Education Courses**  **Secondary Mathematics Education**  **Indicate Undergraduate or Graduate Program Completers** | | | | | | |
| **Grade Scale:** Insert grade point values associated with each letter grade. | | | | | | |
|  | **INSERT ACADEMIC YEAR FOR COHORT GROUP** | | | **INSERT ACADEMIC YEAR FOR COHORT GROUP** | | |
| **Course Number and Name** | **Mean Course Grade\* and (Range)** | **Number of Completers** | **% of Completers Meeting Minimum Expectation**  **(INDICATE MINIMUM GRADE EXPECTATION)** | **Mean Course Grade\* and (Range)** | **Number of Completers** | **% of Completers Meeting Minimum Expectation**  **(INDICATE MINIMUM GRADE EXPECTATION)** |
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Data Table B (Mathematics Major Coursework GPA):

Data Table B is to be used for both undergraduate and graduate program completers to report overall mathematics GPAs across all required mathematics major courses listed on the plan of study or transcript review form submitted in Section I of the program report. The table should be duplicated for each program reported. Data Table B may replace Data Table A for a graduate level program that relies on coursework taken at another institution. Data disaggregated by academic year on completers’ mean grade point average (GPA) and grade distribution (range) across all required undergraduate mathematics major courses, number of completers, and percentage of completers meeting the minimum expectation must be included.

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| **Mean GPA in Required Mathematics Major Courses for Secondary Mathematics Education Completers**  **Indicate Program Type (Post-Baccalaureate or MAT or M. Ed.) Program** | | | |
| **Grade Scale:** Insert grade point values associated with each letter grade. | | | |
| **Academic Year** | **Mean GPA and**  **(Range)** | **Number of Completers** | **% of Completers Meeting Minimum Expectation**  **(INDICATE MINIMUM GRADE EXPECTATION)** |
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Data Table C (Graduate Program Transcript Analysis Results):

Data Table C is to be used to report transcript analysis results for a graduate level program that relies on coursework taken at another institution. Data disaggregated by academic year on the number of completers for whom a transcript analysis was done, how many completers required remediation, nature of remediation (e.g., coursework or special project) by course or content, and the number of completers, if any, who received waivers (explanation required) from the process must be included.

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| **Transcript Analysis Results for Secondary Mathematics Education Completers**  **Indicate Program Type (Baccalaureate, Post-Baccalaureate or MAT or M. Ed.) Program** | | | | | |
| **Academic Year** | **Number of Completers** | **Number Requiring Remediation** | **Nature of Remediation by Course or Content** | **Number Receiving Waivers** | **Waiver Explanation** |
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**Part 5.** *Analysis*

Provide an analysis of grade data. An explanation of any inconsistencies within the data tables must accompany the data tables.

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