

Mathematics Student Teaching Standards

Thank you for your role in the evaluation of our teacher education candidates' student teaching experience! To enhance the effective and accurate assessment of our candidates, in relation to their content knowledge and pedagogical knowledge and skills, the School of Education has documented the expectations for our candidates through the identification of standards that should be used as part of the assessment process.

Below you will find a listing of the Peru State College Conceptual Framework standard and their alignment to INTASC. You will also find specific standards from The Nebraska Department of Education's Rule 24 Guidelines for **Math Education** that have been aligned to our student teaching evaluation indicators. As you complete both the Content Studies and Pedagogical Studies sections of the evaluation, please critically analyze the student teaching candidate in relation to the specific standards listed below.

Again, thank you for your participation in this crucial aspect of our teacher education program. The School of Education appreciates your time and efforts.

Peru State College Conceptual Framework Outcomes Content Knowledge		
PERU-U.1.2.1	Teacher education candidates interrelate all content areas, use tools of inquiry, and emphasize the significance of literacy and diversity across the curriculum.	INTASC Standards 1, 2, 3, 4, 7, 8, 9
PERU-U.1.2.2	Teacher education candidates identify, select and evaluate appropriate resources to support a coherent lesson sequence in their content area which creates meaningful learning experiences and productive student work.	INTASC Standards 2, 4, 7, 8
PERU-U.1.2.3	Teacher education candidates demonstrate comprehension of the evolving nature of theory and research in their content area.	INTASC Standards 1, 8, 9

Indicator 1: The teacher candidate presents the central concepts of the content area(s) knowledgeably and in sufficient depth.

- A. Demonstrate knowledge and understanding of and be able to teach the concepts, skills, and processes of mathematics as defined in the Nebraska Content Standards for eighth and twelfth grades;
- B4. Make mathematical conjectures, evaluate arguments and validate mathematical thinking;
- B7. Use technology in exploration, computation, graphing, and problem solving;
- C1. Apply concepts of number, number theory, and number systems;
- C2. Apply numerical computation and estimation techniques and extend them to algebraic expressions;
- C4. Use both descriptive and inferential statistics to analyze data, make predictions, and make decisions;
- C6. Use algebra to describe patterns, relations, and functions and to model and solve problems;
- C7. Recognize the roles of axiomatic systems and proofs in different branches of mathematics, such as algebra and geometry;

- C8. Demonstrate an understanding of the concepts of limit, continuity, differentiation, and integration, and the techniques and applications of calculus;
- C9. Demonstrate an understanding of the concepts and applications of discrete mathematics such as graph theory, matrices, recurrence relations, linear programming, difference equations, and combinatorics;
- C11. Demonstrate an understanding of and be able to apply the major concepts of geometry;
- C12. Demonstrate an understanding of and be able to apply the major concepts of linear algebra; and
- C13. Demonstrate an understanding of and be able to apply the major concepts of abstract algebra.

Indicator 2: The teacher candidate integrates professional knowledge and research into lesson planning within the content area(s).

- B1. Use problem-solving approaches to investigate and understand mathematical content; and
- B8. Use instructional strategies based on current research as well as national, state, and local standards relating to mathematics instruction.

Indicator 3: The teacher candidate integrates related aspects of other content areas into lessons.

- B2. Formulate and solve problems from both mathematics and everyday situations;
- B5. Examine relationships within mathematics;
- B6. Connect mathematics to other disciplines and real-world situations; and
- C10. Use mathematical modeling to solve problems from other fields such as natural sciences, social sciences, business, and engineering.

Indicator 4: The teacher candidate communicates the evolving nature of the content area(s) to students.

- C3. Use geometric concepts and relationships to describe and model mathematical ideas and real-world constructs; and
- C14. Demonstrate an understanding of the historical development in mathematics that includes the contributions of under-represented groups and diverse cultures.

Indicator 5: The teacher candidate provides opportunities for students to develop general and content area literacy.

- B3. Communicate mathematical ideas orally and in writing using everyday language, mathematical language, symbols, and graphs; and
- C5. Demonstrate an understanding of the concepts of theoretical and simulated probability and apply them to real-world situations.

Peru State College Conceptual Framework Outcomes		
Pedagogical Knowledge/Skills		
PERU-U.1.3.1	Teacher education candidates understand human development and socio-cultural, philosophical, and historical foundations of education processes in a democratic society.	INTASC Standards 2, 3, 8
PERU-U.1.3.2	Teacher education candidates design classroom experiences that develop critical, creative, and independent thinking, respect, safety and well-being to meet the diverse learning needs of all students and reflect knowledge of how different students learn and develop.	INTASC Standards 2, 4, 5, 6, 7

PERU-U.1.3.3	Teacher education candidates utilize standards-based curricula, assessment strategies, research, technology resources, and diversity in curriculum development, planning and implementation.	INTASC Standards 1, 2, 3, 7
PERU-U.1.3.4	Teacher education candidates design and teach lessons that integrate general content and technological, professional, and pedagogical knowledge to meet the needs of, and, have the ability to motivate, all students.	INTASC Standards 1, 2, 3, 4, 5, 6, 7, 8, 9
PERU-U.1.3.5	Teacher education candidates design and implement a variety of written and oral on-going assessment strategies directly related to standards used to assess individual student progress and to modify teaching and learning strategies.	INTASC Standards 2, 4, 7, 8
PERU-U.1.3.6	Teacher education candidates create a positive, well organized learning community with clearly defined classroom goals linked to standards dedicated to purposeful learning activities that motivate students' interest and engagement and minimize student off-task behavior.	INTASC Standards 5, 6, 9, 10
PERU-U.1.3.7	Teacher education candidates employ multiple, purposeful teaching and learning strategies to engage students in active learning opportunities that promote the development of problem solving, critical thinking, and goal setting and help students assume responsibility for their own learning.	INTASC Standards 2, 4, 5, 7