Science and Mathematics Education MEd – Student Learning Outcomes (SLOs)

Science Content Knowledge and Intellectual Competencies

SLO 1

Math Content Knowledge and Intellectual Competencies

SLO 2

Essential Professional Tools

SLO 3

• Students will demonstrate an understanding of course specific fundamental scientific concepts and theories about the natural world and will demonstrate essential intellectual competencies in the discipline by being able to apply physical/natural principles to analyze and solve science-related problems; measure, describe and analyze or model natural systems; and for interdisciplinary B2 courses, apply concepts from across scientific disciplines to understand natural phenomena.

Students will demonstrate an understanding of fundamental mathematical concepts and methods by applying them to practical situations in the modern world an ability to interpret mathematical models such as formulas, graphs, tables, and schemata, draw inferences and make decisions from them; an ability to estimate and check answers to mathematical problems in order to determine whether an answer is reasonable, and critically evaluate numerical information.

The candidate will show their mastery of essential professional tools by being able to: clearly and concisely summarize the goals, objectives, intellectual merit and outcomes of a project to reform or research an important issue in science or math teaching and learning; demonstrate a comprehensive knowledge of an issue in math or science education and can justify, using existing theory and evidence, the need for educational reform or research; clearly and comprehensively explain appropriate goals and incremental objectives, and the methods for achieving them for a project to reform or research an important issue in science or math teaching and learning; properly