Key Licensure Assessment #1:
Praxis II Science Content Knowledge Tests

Adolescent to Young Adult (AYA):
Earth Sciences
Integrated Science
Life Sciences
Physical Sciences: Chemistry
Physical Sciences: Physics

Overview
Advanced Teacher Preparation Program
Educator Preparation Unit
Muskingum University

1. Description of the Assessment and Its Use in the Program

Key Licensure Assessment #1 for a teacher education candidate seeking licensure in Earth Sciences; Integrated Science; Life Sciences; Physical Sciences: Chemistry; and/or Physical Sciences: Physics is the respective Educational Testing Service (ETS) Praxis II content knowledge test(s) noted below. The test(s) is required by the State Board of Education of Ohio.

- **Earth Sciences**: Earth and Space Sciences: Content Knowledge (#0571)
- **Integrated Science**: Biology: Content Knowledge (#0235) **and** Chemistry, Physics, and General Science (#0070) **OR** Biology and General Science (#0030) **and** Chemistry: Content Knowledge (#0245) **or** Physics: Content Knowledge (#0265) **or** Earth and Space Sciences: Content Knowledge (#0571)
- **Life Sciences**: Biology: Content Knowledge (#0235)
- **Physical Sciences**: Chemistry: Chemistry: Content Knowledge (#0245)
- **Physical Sciences**: Physics: Physics: Content Knowledge (#0265)

The content of these tests focuses on the following test categories:

- **Biology**: Content Knowledge (#0235)
  
  1. Basic Principles of Science
  2. Molecular and Cellular Biology
  3. Classical Genetics and Evolution
  4. Diversity of Life, Plants, and Animals
  5. Ecology
  6. Science, Technology, and Society
• Biology and General Science (#0030)
  (1) History, Philosophy, and Methodology of Science; Science, Technology, and Society
  (2) Molecular and Cellular Biology
  (3) Diversity of Life, Plants, and Animals
  (4) Evolution and Classical Genetics
  (5) Ecology
  (6) Chemistry
  (7) Physics
  (8) Earth and Space Science

• Chemistry: Content Knowledge (#0245)
  (1) Matter and Energy; Heat, Thermodynamics, and Thermochemistry
  (2) Atomic and Nuclear Structure
  (3) Nomenclature; the Mole, Chemical Bonding, and Geometry
  (4) Periodicity and Reactivity; Chemical Reactions; Biochemistry and Organic Chemistry
  (5) Solutions and Solubility; Acid/Base Chemistry
  (6) History and Nature of Science; Science, Technology, and Social Perspectives
  (7) Mathematics, Measurement, and Data Management; Laboratory Procedures and Safety

• Chemistry, Physics, and General Science (#0070)
  (1) Major Ideas of Chemistry and Physics
  (2) Chemistry
  (3) Physics
  (4) Earth and Space Science
  (5) Life Science

• Earth and Space Sciences: Content Knowledge (#0571)
  (1) Basic Scientific Principles of Earth and Space Sciences
  (2) Tectonics and Internal Earth Processes
  (3) Earth Materials and Surface Processes
  (4) History of the Earth and Its Life-Forms
  (5) Earth’s Atmosphere and Hydrosphere
  (6) Astronomy

• Physics: Content Knowledge (#0265)
  (1) Mechanics
  (2) Electricity
  (3) Optics and Waves
  (4) Heat and Thermodynamics
  (5) Modern Physics, Atomic, and Nuclear Structure
  (6) History and Nature of Science; Science Technology, and Social Perspectives
The qualifying scores for these tests in Ohio are as follows:

- Biology: Content Knowledge (#0235) 148
- Biology and General Science (#0030) 560
- Chemistry: Content Knowledge (#0245) 152
- Chemistry, Physics, and General Science (#0070) 520
- Earth and Space Sciences: Content Knowledge (#0571) 151
- Physics: Content Knowledge (#0265) 132

A candidate must meet the respective qualifying score(s) in order to (a) exit the licensure program at Gateway 3 and (b) be recommended to the Ohio Department of Education for licensure.

2. Description of How the Assessment Specifically Aligns with the National Science Teachers Association (NSTA) Standards (2011)

The above named Praxis II Tests align with the following elements of the NSTA standards:

| Element 1a: | Understand the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association. |
| Element 1b: | Understand the central concepts of the supporting disciplines and the supporting role of science-specific technology. |

3. Assessment Instrument

The above named Praxis II assessments are each two-hour tests. The tests consist of 100 to 150 multiple-choice questions. They are designed to assess the knowledge and competencies necessary for a beginning teacher of secondary school science.

These assessments are administered through and graded by Educational Testing Service (ETS).

4. Scoring Guide

The Institution is unable to provide the scoring guides for these Praxis II assessments since the tests are the property of Educational Testing Service (ETS).