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
Graduate Initial 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 4 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:

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<th>Element</th>
<th>Description</th>
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<td>1a:</td>
<td>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.</td>
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<td>1b:</td>
<td>Understand the central concepts of the supporting disciplines and the supporting role of science-specific technology.</td>
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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).