south dakota DEPARTMENT OF EDUCATION
Learning. Leadership. Service.

# Issues in Environmental Science

| | |
|---|---|
| Career Cluster | Agriculture, Food and Natural Resources |
| Course Code | |
| Prerequisite(s) | None |
| Credit | 0.5 or 1.0 credit |
| Program of Study and Sequence | Cluster Course – Environmental Science – Pathway Course-Capstone Course |
| Student Organization | National FFA Organization |
| Coordinating Work-Based Learning | Job shadowing, mentoring, service learning, workplace tours, school-based enterprises, Supervised Agricultural Experience (SAE) |
| Industry Certifications | OSHA 10 Hour Safety Certification (Agricultural, Construction Industry, or General Industry), National Career Readiness Certificate (NCRC) |
| Dual Credit or Dual Enrollment | https://sdmylife.com/images/Approved-CTE-Dual-Credit.pdf |
| Teacher Certification | Agriculture Food and Natural Resources Cluster Endorsement; Natural Resources & Environmental Service System Pathway Endorsement; 7-12 Science – Biology; *Agriculture Education |
| Resources | |

**Course Description**
Agriculture and tourism are South Dakota's two leading industries. For these industries to thrive, we must continue to protect and manage the environment with conservation in mind. Environmental Science is a course that enables students to develop an understanding of the natural environment and the environmental problems the world faces. Biology, statistics, algebra, English, and human relations skills will be reinforced throughout the course. Opportunities for application of clinical and leadership skills are provided by participation in FFA activities, conferences and related career development events and proficiency awards. Each student will be expected to maintain a Supervised Agricultural Experience (SAE) Program/Internship.

**Program of Study Application**
Environmental Science is a pathway course in the Agriculture, Food and Natural Resources Cluster and Environmental Service Systems Pathway. Environmental Science would follow a cluster course and will prepare a student to participate in Fundamental Natural Resources or Agriculture Biotechnology.

## Course Standards

**IES 1: Examine ecological principles and functions.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| Two<br>Skill/Concept | IES 1.1 Examine the structure and function of ecosystems. |
| Four<br>Extended Thinking | IES 1.2 Analyze the major biomes of the earth and the biodiversity associated with these biomes. |
| Four<br>Extended Thinking | IES 1.3 Analyze population dynamics. |

**IES 2: Evaluate human population dynamics on the environment.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| Four<br>Extended Thinking | IES 2.1 Evaluate factors affecting the human population. |
| Four<br>Extended Thinking | IES 2.2 Evaluate the consequences of human population growth. |
| Four<br>Extended Thinking | IES 2.3 Evaluate approaches that address overpopulation. |

**IES 3: Appraise our natural resources, their conservation and management.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| One<br>Recall | IES 3.1 Explain the types, uses and history of renewable and nonrenewable resources. |
| Three<br>Strategic Thinking | IES 3.2 Assess methods of conservation of common non–energy natural resources. |
| Two<br>Skill/Concept | IES 3.3 Examine the impact of waste production and management on the environment. |

**IES 4: Examine energy sources and their conservation.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| Two<br>Skill/Concept | IES 4.1 Compare and contrast conventional and alternative energy sources. |
| Two<br>Skill/Concept | IES 4.2 Examine the types of energy-related pollution. |
| Two<br>Skill/Concept | IES 4.3 Compare various methods of energy conservation. |

**IES 5: Examine consequences of human interaction with the environment.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| Two Skill/Concept | IES 5.1 Examine the causes, environmental effects and methods for controlling pollution. |
| Two Skill/Concept | IES 5.2 Examine environmental impact on human health. |
| Four Extended Thinking | IES 5.3 Appraise the sustainability of human practices as they relate to water quality, agriculture/forestry/fishing, mining, energy and land use. |

**IES 6: Appraise personal and civic responsibility with regard to the environment.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| Four Extended Thinking | IES 6.1 Evaluate personal views concerning the environment. |
| Four Extended Thinking | IES 6.2 Evaluate the rights and responsibilities of citizens in maintaining a healthy environment. |

**IES 7: Implement an individual project for career development through a Supervised Agriculture Experience/Work based Experience.**

| *Webb Level* | *Sub-indicator* |
|---|---|
| Two Skill/Concept | IES 7.1 Develop an individual project plan with goals and timeline. |
| Two Skill/Concept | IES 7.2 Explore opportunities within AFNR industries. |
| Three Strategic Thinking | IES 7.3 Apply concepts of financial management appropriate to agricultural projects and personal finances. |
| Three Strategic Thinking | IES 7.4 Develop and document knowledge and skills to ensure workplace safety regarding personal health and environmental management. |
| Four Extended Thinking | IES 7.5 Research and analyze how public policy, laws, and advocacy impact agricultural systems and agricultural literacy. |