# Natural Resource Management Course No. 18504 Credit: 1.0

|  |  |  |  |
| --- | --- | --- | --- |
| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes: Comprehensive Agricultural Science (01.9999); Natural Resources and Environmental Systems (03.0101); Biochemistry (14.1401)

Course Description: **Technical Level:** Natural Resources Management courses combine the fields of ecology and conservation with planning for the efficient use and preservation of land, water, wildlife, and forests. Within the general area of natural resources management, these courses usually cover specific topics and uses, such as hunting or fishing preserves, forest production and management, wildlife preservation, and human outdoor recreation.

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1.1: Our Natural Resources

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1.1 | Differentiate between renewable and nonrenewable natural resources. |  |
| 1.1.2 | Describe the interdependence of organisms within ecosystem. |  |

## Benchmark 1.2: Classify Natural Resources

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.2.1 | Identify trees and other woody plants. |  |
| 1.2.2 | Identify herbaceous plants. |  |
| 1.2.3 | Identify wildlife species. |  |
| 1.2.4 | Identify aquatic species. |  |
| 1.2.5 | Identify rock, mineral and soil types. |  |

## Benchmark 2.1: Safety Plan

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1.1 | Demonstrate safety practices when working in an outdoor environment. |  |
| 2.1.2 | Use appropriate techniques and equipment when working with biohazards. |  |

## Benchmark 2.2: Cartographic Skills

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.2.1 | Locate natural resources using a land survey and geographic coordinate system. |  |

## Benchmark 2.3: Measure and Survey

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.3.1 | Discuss the procedures for conducting resource inventories and population studies. |  |

## Benchmark 2.4: Enhancement Techniques

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.4.1 | Identify indicators of the biological health of a stream. |  |
| 2.4.2 | Identify ways in which forest stands may be improved. |  |
| 2.4.3 | Identify methods of wildlife habitat improvement. |  |
| 2.4.4 | Identify methods of rangeland improvement. |  |
| 2.4.5 | Identify natural resources management techniques for improving recreation opportunities. |  |
| 2.4.6 | Identify methods to improve marine and costal natural resources. |  |

## Benchmark 2.5: Interpret Laws

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 2.5.1 | Identify the purposes of laws associated with natural resource systems. |  |
| 2.5.2 | Identify issues involving mitigation of natural resources. |  |

## Benchmark 2.6: Ecological Concepts and Principles

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 2.6.1 | Diagram biogeochemical cycles and explain the processes. |  |
| 2.6.2 | Relate the function of watersheds to natural resources. |  |
| 2.6.3 | Explain stream hydrology and structure, and determine the different classes of streams. |  |
| 2.6.4 | Identify techniques used in the creation, enhancement and management of riparian zones and riparian buffers. |  |
| 2.6.5 | Give examples of primary-succession and secondary-succession species in community of organisms. |  |
| 2.6.6 | Discuss factors that influence population density and population dispersion. |  |
| 2.6.7 | Discuss factors that influence the establishment and spread of invasive species. |  |
| 2.6.8 | Describe the impact of pollution on natural resources. |  |
| 2.6.9 | Describe the impact climate has on natural resources. |  |

## Benchmark 3.1: Natural Resource Products

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 3.1.1 | Determine when to harvest forest products. |  |
| 3.1.2 | Describe processing of forest products. |  |
| 3.1.3 | Describe techniques used in the harvesting of wildlife. |  |
| 3.1.4 | Describe techniques used in the processing of wildlife. |  |
| 3.1.5 | Describe economically important minerals and ores that are extracted and processed. |  |
| 3.1.6 | Describe sources of fossil fuels and products made from fossil fuels. |  |
| 3.1.7 | Describe characteristics of sites that lend themselves to hydroelectric generation. |  |
| 3.1.8 | Debate an issue related to the recreational use of natural resources. |  |
| 3.1.9 | Describe techniques used to harvest aquatic species. |  |
| 3.1.10 | Explain techniques used to process aquatic species. |  |

## Benchmark 4.1: Manage Fires

### Competencies

| **#** | **Description** | **rating** |
| --- | --- | --- |
| 4.1.1 | Describe techniques used to suppress wildfires and manage prescribed fires. |  |

## Benchmark 4.2: Plant and Wildlife Diseases

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 4.2.1 | Report the observance of diseases affecting plants to the appropriate authorizes. |  |
| 4.2.2 | Report the observances of diseases affecting wildlife to the appropriate authorities. |  |

## Benchmark 4.3: Insect Infestations

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 4.3.1 | Report observance of insect pests to the appropriate authorities. |  |

## Benchmark 5.1: Communicate to the Public

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 5.1.1 | Design and construct a display that communicates a natural resource topic and discuss the topic in a public forum. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

[pathwayshelpdesk@ksde.org](mailto:pathwayshelpdesk@ksde.org)



900 S.W. Jackson Street, Suite 102

Topeka, Kansas 66612-1212

[https://www.ksde.org](https://www.ksde.org/)

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities and provides equal access to any group officially affiliated with the Boy Scouts of America and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 S.W. Jackson, Suite 102, Topeka, KS 66612, (785) 296-3201.