2012 - 2013

Florida Department of Education
Curriculum Framework

Program Title: **Hazardous Materials Specialist**
Career Cluster: **Agriculture, Food & Natural Resources**

CCC	
CIP Number	0703010403
Program Type	College Credit Certificate (CCC)
Program Length	14 credit hours
CTSO	N/A
SOC Codes (all applicable)	19-4091
Targeted Occupation List	http://www.labormarketinfo.com/wec/TargetOccupationList.htm
Perkins Technical Skill Attainment Inventory	http://www.fldoe.org/workforce/perkins/perkins_resources.asp
Statewide Articulation	http://www.fldoe.org/workforce/dwdframe/artic_frame.asp

Purpose

This certificate program is part of the Environmental Science Technology AS/AAS degree program (1703010401/0703010401).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Agriculture, Food & Natural Resources career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the environmental science industry within the Agriculture, Food & Natural Resources career cluster.

The content includes but is not limited to analysis, handling, storage, and dispensing of hazardous materials in accordance with appropriate federal, state, and local laws and regulations governing proper chemical management. The certificate will cover industry standards such as those included in the Occupational Health and Safety Administration (OSHA) 29CFR1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard, the Oil Pollution Act of 1990, the Clean Air Act, the Clean Water Act, and the Department of Transportation (DOT) regulations. Graduates of this certificate program should

be able to research applicable local, state, and federal regulations and implement methods and strategies to ensure compliance; to maintain records as required by OSHA, the Environmental Protection Agency (EPA), and the DOT; to develop and implement hazardous materials handling procedures; to plan for emergency response to hazardous materials incidents; and to protect employees/workers/communities from hazardous material exposures.

Laboratory Activities

Laboratory activities are an integral part of this program. These activities include instruction in the use of safety procedures, tools, equipment, materials, and processes related to these occupations. Equipment and supplies should be provided to enhance hands-on experiences for students.

Special Notes

Planned and supervised occupational activities may be provided through directed laboratory experience, practicum of cooperative experience. Whenever the cooperative method is offered, the following is required for each student: (1) a training plan signed by the student, the instructor and the employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; and (2) a work station which reflects equipment, skills, and tasks relevant to the student's career goal. Students must receive compensation for work performed.

In accordance with State Board of Education Rule 6A-10.0315, minimum basic skill levels have been established for admittance into a college associate degree program.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's IEP or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their postsecondary service provider. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Articulation

For details on articulation agreements which correlate to programs and industry certifications refer to http://www.fldoe.org/workforce/dwdframe/artic_frame.asp.

Standards

After successfully completing this course the student will be able to perform the following:

01.0 Demonstrate knowledge of the principles of managing and remediation of water pollution.
02.0 Demonstrate knowledge of the principles of managing and remediation of air pollution.

03.0 Demonstrate awareness of environmental noise sources and their monitoring.
04.0 Operate and calibrate laboratory and field instruments used in quantitative and qualitative analysis of pollutants.
05.0 Sample, analyze, and calculate data related to air and water pollutants.
06.0 Demonstrate an awareness of radiation monitoring and radioactive contamination control.
07.0 Demonstrate an awareness of solid waste, the problems engendered by solid waste accumulation, and disposal and solutions to those problems.
08.0 Demonstrate employability skills.

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Student Performance Standards

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01.0 Demonstrate knowledge of the principles of managing and remediation of water pollution--The student will be able to:

- 01.01 Determine chemical and physical properties of water.
- 01.02 Describe microbial systems.
- 01.03 Describe surface water, groundwater systems, hydrologic cycle, and potable water treatment processes.
- 01.05 Identify types and sources of water contamination.
- 01.07 Collect water samples for analysis.
- 01.08 Identify the accepted water quality standards for effluent from wastewater treatment plants.
- 01.09 Identify the correct and accepted water quality standards for industrial waste effluent.

02.0 Demonstrate knowledge of the principles of managing and remediation of air pollution--The student will be able to:

- 02.03 Collect and analyze air samples.
- 02.07 Measure the air pollutant of a specific source.
- 02.08 Record, interpret, and report laboratory analyses.

03.0 Demonstrate awareness of environmental noise sources and their monitoring--The student will be able to:

- 03.01 Define and discuss the physical properties of sound.
- 03.02 Discuss the threshold of hearing, tolerance, and hearing loss.
- 03.03 Discuss environmental noise, its effect on humans, and solutions to noise pollution.

04.0 Operate and calibrate laboratory and field instruments used in quantitative and qualitative analysis of pollutants--The student will be able to:

- 04.01 Demonstrate knowledge of basic laboratory operation.
- 04.02 Operate and calibrate selected laboratory instruments.
- 04.03 Operate and calibrate selected field instruments and equipment.

05.0 Sample, analyze, and calculate data related to air and water pollutants--The student will be able to:

05.01 Gather and analyze selected samples.
05.02 Manipulate data and reach firm conclusions.
05.03 Write selected formal technical reports.
05.04 Identify and perform the correct analysis for selected air pollutants listed with state and federal regulations.
05.05 Identify and perform the correct analysis for selected parameters listed with state and federal regulations for wastewater effluent.

06.0 Demonstrate an awareness of radiation monitoring and radioactive contamination control--The student will be able to:

06.05 Discuss nuclear power plant design, nuclear power hazards, and safety features.
06.06 Discuss nuclear fuel reprocessing and storage.

07.0 Demonstrate an awareness of solid waste, the problems engendered by solid waste accumulation and disposal and solutions to those problems--The student will be able to:

07.01 Discuss the composition, sources, and quantity of solid waste.
07.02 Discuss methods of solid waste disposal.
07.03 Discuss various solutions to solid waste accumulations and disposal.
07.06 Identify a sanitary landfill.
07.07 Discuss the construction features of a safe landfill.
07.08 Discuss the possibilities of contaminates (leachates) seeping into the groundwater.
07.09 Discuss the need to have monitoring well located around a sanitary landfill.
07.10 Discuss those wastes that are permitted by state and federal regulation to be disposed at a landfill site.

08.0 Demonstrate employability skills--The student will be able to:

08.02 Secure information about a job.
08.03 Identify documents that may be required when applying for a job.
08.05 Demonstrate competence in job interview techniques.
08.08 Demonstrate knowledge of how to make job changes appropriately.