2012 - 2013

Florida Department of Education
Curriculum Framework

Program Title: **Water Quality Technician**
Career Cluster: **Agriculture, Food & Natural Resources**

CCC	
CIP Number	0703010404
Program Type	College Credit Certificate (CCC)
Program Length	12 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 and dispensing of water in accordance with appropriate federal, state, and local laws and regulations. The certificate will cover industry standards such as those included in the Clean Water Act. 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, and the Environmental Protection Agency (EPA); and to control the process to transfer or treat water or liquid waste.

This program does not prepare individuals for the D, C, B or A level of Water or Wastewater Treatment Facility Operator Certification as those requirements are outlined in Department of Environmental Protection Rule 62-602.

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 or 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.
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.
07.0 Demonstrate and 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.
- 01.04 Describe the marine environment.
- 01.05 Identify types and sources of water contamination.
- 01.06 Describe legal aspects and consequences of pollution.
- 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.
- 01.10 Demonstrate the technology applied to non-point source pollution control (stormwater and agriculture runoff).

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.
- 05.05 Identify and perform the correct analysis for selected parameters listed with state and federal regulations for wastewater effluent.

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:

- 07.08 Discuss the possibilities of contaminates (leachates) seeping into the groundwater.

07.09 Discuss the need to have monitoring well located around a sanitary landfill.

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

08.01 Conduct a job search.
08.02 Secure information about a job.
08.03 Identify documents that may be required when applying for a job.
08.04 Complete a job application.
08.05 Demonstrate competence in job interview techniques.
08.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
08.07 Identify acceptable work habits.
08.08 Demonstrate knowledge of how to make job changes appropriately.
08.09 Demonstrate acceptable employee health habits.