



What if software did some work for you?

Developing the Laboratory Science Curriculum using WIDS



WIDS Learning Design System™

 **Learning Design**
(Course)

 **Program Design**
(Program, Major, or Discipline)

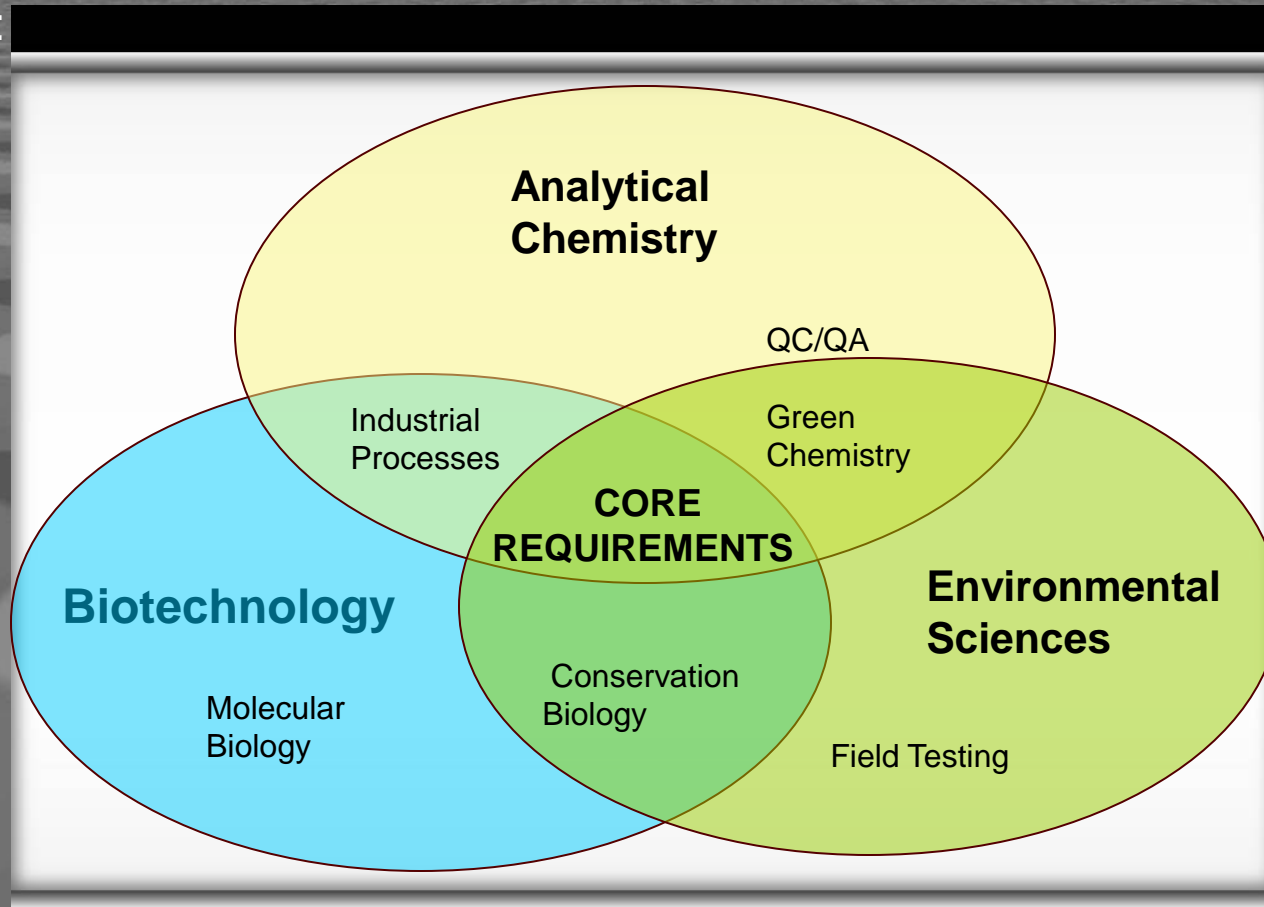


What is WIDS?

- Worldwide Instructional Design System
- Curriculum and program development software created by Wisconsin Technical College System
- Facilitates aligning curriculum with program standards

Associate Degree in Applied Science in LABORATORY SCIENCE

A technical program that allows students to pursue three different career options:



- Prepare students for entry-level laboratory technician jobs in industry.
- Transfer to a four year school for further education.

Course Competencies X Program Outcomes

Course competencies are:

- Major skills, knowledge or attitudes that are measurable and observable.

Program outcomes are:

- Abilities learners must master by the end of the program

Program Outcomes Based on Industry Feedback

The Successful Lab Science Program Graduate will:

- Demonstrate self-directed learning skills
- Model professional behaviors, ethics, and appearance
- Demonstrate teamwork and interpersonal skills
- Apply standard laboratory skills appropriately and proficiently
- Demonstrate problem solving skills in the laboratory
- Demonstrate oral, written, and non-verbal communication skills in an organized and coherent manner
- Demonstrate quantitative reasoning skills
- Utilize computer applications appropriately to collect, analyze, and present scientific information and data
- Apply critical reading and reasoning skills to the interpretation of scientific literature, graphs, and charts

Creating A Master Program File

WIDS Program Design

[Create or enter exit learning outcomes for a program or major]



Wizards



Program Outcomes



Publisher



Program
Information



Core Ability Outcomes



General Education Outcomes



External Standards

Program Outcome Measures and Criteria

Program Design: Laboratory Science Degree Program - [Program Outcome Criteria and Direct Measures]

File Edit View Tools Help

Program Outcomes Program Outcome Criteria Perform. Standard Library

Program Outcomes

E. Demonstrate problem solving

Demonstrate problem solving skills in the laboratory

Info Center / Quick Help

Checklist

Program Outcome Criteria Checklist

Program Outcome criteria:

- provide specifications for the performance described by the related Program Outcome
- describe measurable and observable specifications
- begin with the word "learner" or "you" or the name of the product or artifact
- can be assessed feasibly within the context of the program

Program Outcome Criteria and Direct Measures

#	Program Outcome Direct Measures (Summative Assessments)
1	Inquiry oriented labs
2	Case study analysis
3	Lab exam

#	Program Outcome Criteria
1.	Student identifies problems in laboratory analyses and procedures
2.	Student troubleshoots and suggests appropriate remedies for problems with instrumentation and/or laboratory analyses procedures
3.	Student develops new laboratory procedures or appropriately adapts and applies previous skill sets to solve a new or unusual analysis situation

Course Outcomes

Learning Design: Integrated Science II - [Competencies]

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Comp. Bank Verb Library Insert Comp. Delete

Syllabus | COS | L Plan | PAT | Info

Syllabus

- Course Information
- Prerequisites
- Textbooks
- Learner Supplies
- Core Abilities
- Program Outcomes
- Gen Ed Outcomes
- External Standards
- ⇒ **Competencies**
 - Link Core Abilities
 - Link Program Outcomes
 - Link Gen Ed Outcomes
 - Link External Standards
- Grading Information
- Guidelines
- Schedule

[Syllabus Print Preview](#)
[Exit Wizard](#)

Competencies

#	Competencies
▶ 1.	Utilize physical and chemical processes to describe earth's characteristics
2.	Relate climatology and weather to earth structure
3.	Summarize the history of the earth
4.	Correlate the history of the earth with the origin and evolution of life
5.	Apply molecular structure to evolutionary processes
6.	Describe how living organisms relate to each other and to their physical environment
7.	Collect data
8.	Analyze data
9.	Present data
10.	Utilize lab safety rules when working in a lab
11.	Work in groups to solve problems in the lab

Edit the Syllabus version.

An example from SCI 106 - Integrated Science II:

At the end of this course, the student will be able to:

- Utilize physical and chemical principles to describe earth's characteristics
- Apply molecular structure to evolutionary processes
- Correlate the history of the earth with the origin and evolution of life

Learning Plans:

Learning Design: Integrated Science II - [Learning Plan Information]

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Open/New Learning Plan Select Target Outcomes

Syllabus COS L Plan PAT Info

Learning Plan

- ↔ Learning Plan Information
- Learning Plan Prerequisites
- Learning Activities
- Learning Materials
- Assessment Activities

[Learning Plan Print Preview](#)
[Teaching Notes Print Preview](#)
[Exit Wizard](#)

Learning Plan Information

Select a Learning Plan:
1 The Earth

Title:

Developer(s):

Date:

Purpose/Overview:

- Earth's layers
- Continental Drift
- Plate tectonics
- Minerals: Formation and Properties
- Earth Surface: crust and water

Target Competencies

Competency
Utilize physical and chemical processes to describe earth's characteristics

Linked Core Abilities

- Use existing scientific data to explain patterns in nature
- Research the existing information and data regarding a topic of inquiry
- Apply logical, scientific and quantitative reasoning to solve problems

Linked Program Outcomes

- Apply critical reading and reasoning skills to the interpretation of scientific literature, graphs and charts

An example from SCI 106 - Integrated Science II:

- **UNIT - Life on Earth**
- **Outline**
 - Origin of Life
 - Living organisms and the atmosphere
 - The history told by the fossil record
-
- ***Target Competency***
- **Correlate the history of the earth with the origin and evolution of life**
-
- **You will demonstrate your competence by:**
- modeling the mechanism of origin and evolution of life on earth
-
- **Your performance will be successful when:**
- you explain the main hypothesis of life origin
- you explain the origin of life based on the atmospheric conditions along the history of the planet
- you describe the first organisms to live on earth
- you describe the first eukaryotic cells
- you utilize fossil record data to explain the history of life on earth

Linking Course Competencies and Program Outcomes

Program Design: Laboratory Science Degree Program - [Course List]

File Edit View Tools Help

Information Career/Job Titles Target Populat'n External Requirements Entry Requirements **Course List** Related DACUMs Indirect Measures Evaluation Summary Create Course File(s)

Info Center / Quick Help
 Checklist

Course List Checklist

Course list:

- includes titles and numbers of all the courses that make up the program, major, or discipline thread
- specifies credits and contact hours for each course
- shows application of skills and knowledge to the real world
- designates the functional role of each course
- reports the most recent revision date (or development date)
- gives a file name for each course, if applicable
- includes the course description
- shows linked exit learning outcomes and External Standards

Courses

#	Course Numbers	Course Titles
A	CHM	
B	CHM	
C	CHM	

Course

Course Title: Instrumental Analysis

Course Number: CHM203

Semester/Year: Fall 2010

Credits: 4

Contact Hours: 6

Total Hours: 0

Category: Core Course

Revision Date: 02/21/2010

File Name: instrumental_analysis.crs

Description: This course covers the foundations of modern instrumental analysis theory and techniques, including instrumental design, atomic and molecular spectroscopy, and chromatography. The

Linked Outcomes:

- Program Outcomes
 - Model professional behaviors, ethics, and appearance
 - Apply standard laboratory skills appropriately and proficiently
 - Demonstrate problem solving skills in the laboratory

Spell Check Link Outcomes... Cancel Insert/Update

Required for Program?
 Yes No

Program Review

	Integrated Science II										
	Utilize physical and chemical principles to describe	Relate climatology and weather to earth systems	Summarize the history of the earth	Correlate the history of the earth with the origin and	Apply molecular structure to evolutionary processes	Describe how living organisms relate to each other	Collect data	Analyze data	Present data	Utilize lab safety rules when working in a lab	Work in groups to solve problems in the lab
Program Outcomes											
Demonstrate self-directed learning skills											
Model professional behaviors, ethics and appearance											X
Apply standard laboratory skills appropriately and proficiently							X	X		X	
Demonstrate team-work and interpersonal skills							X	X			X
Demonstrate problem solving skills in the laboratory							X	X		X	
Demonstrate oral, written and non-verbal communication skills in an organized and coherent manner									X		
Demonstrate quantitative reasoning skills								X			
Utilize computer applications appropriately to collect, analyze and present scientific information and data								X	X		
Apply critical reading and reasoning skills to the interpretation of scientific literature, graphs and charts	X	X	X	X	X	X					