



1800 Bronson Blvd., Fennimore, WI 53809 | 608.822.3262 | Toll Free: 800.362.3322 | www.swtc.edu

## Laboratory Science Technician Program

### Course Curriculum

**Semester 01** (Tuition: \$1,490)

Course #	Course Title	Credits
10-513-110	Basic Lab Skills	1
Credits: 1    Lecture Hours: 9    Lab Hours: 18		
This course explores health career options and the fundamental principles and procedures performed in the clinical laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests.		
10-513-113	QA Lab Math	1
Credits: 1    Lecture Hours: 18		
This course focuses on performing the mathematical calculations routinely used in laboratory settings. You will explore the concepts of quality control and quality assurance in the laboratory.		
10-513-188	Manufacturing Practices for the Food Industry	1
Credits: 1    Lecture Hours: 18		
This course focuses on the Good Manufacturing Practices (GMP's) as they are defined in Part 110 of Title 21 of the Code of Federal Regulation for the food industry. You will be introduced to each GMP requirements and explore ways food manufacturers can establish process and product control to meet the intent of each GMP. You will also discuss the consequences of failing to meet and maintain compliance with the GMP's. This course does not replace the mandatory annual GMP training required for workers already employed in a regulated production facility.		
10-806-109	Fundamentals of Chemistry	2
Credits: 2    Lecture Hours: 36		
Students convert measurements, design tables and graphs, create models, and use the scientific method. Students interpret a model of the atom and use the periodic table. They distinguish physical, chemical, and nuclear changes and identify properties of common compounds. They analyze chemical equations. Students relate technical applications to common chemical reactions. Students describe basic biomolecules.		
31-513-181	Quality Lab Microbiology 1	2
Credits: 2    Lecture Hours: 36    Lab Hours: 36		
This course provides an overview of microbiological theory, testing, and control. This course will review lab safety, beneficial and pathogenic microorganisms and their detection and control within the industry. Sample collection, handling and preparation, in addition to tests performed to detect microorganisms in raw and manufactured dairy products will be discussed. Corequisites: Basic Lab Skills (10-513-110) and QA Lab Math (10-513-113)		
31-513-182	Quality Lab Skills 1	1

Credits: 1 Lecture Hours: 0 Lab Hours: 36

The learner will be introduced to dairy food chemistry and applicable laboratory skills. Topics covered will include basic chemistry principles used in dairy food testing and quality analysis. Students will be introduced to testing performed in a dairy food manufacturing lab, standard laboratory methods and proper techniques. Emphasis will be placed on laboratory safety, laboratory equipment utilization, and quality techniques. Two semesters of high school Chemistry could replace the Fundamentals of Chemistry Co-requisite. Corequisites: Basic Lab Skills (10-513-110), QA Lab Math (10-513-113), and Fundamentals of Chemistry (10-806-109)

**8**

**Semester 02** (Tuition: \$1,110)

<b>Course #</b>	<b>Course Title</b>	<b>Credits</b>
10-103-106	Beginning Microsoft Excel	1

Credits: 1 Lecture Hours: 18

This course is an introduction to Microsoft Excel. Students will learn the basic features to produce basic worksheets and charts. Other topic areas covered include formatting, formulas, built-in functions used to design functional worksheets to solve business problems. Basic experience with Windows is assumed.

10-513-184	HACCP Training	2
------------	----------------	---

Credits: 2 Lecture Hours: 36

This course provides an introduction to HACCP (Hazard Analysis and Critical Control Points) for food processors. The relationship between food safety and HACCP will be discussed in the food manufacturing setting. The principles of HACCP will be explored. HACCP plans, implementation and plan maintenance will be developed in order to prevent foodborne illness. Upon successful completion of the course, students will receive a certificate of completion. Prerequisites: Manufacturing Practices for Food Industry (10-513-183) or Manufacturing Practices for the Food Industry (10-513-188)

31-513-185	Quality Lab Skills 2	1
------------	----------------------	---

Credits: 1 Lecture Hours: 9 Lab Hours: 27

The learner will apply testing techniques used in the dairy food manufacturing and quality industry to ensure product quality and safety. Concepts in data analysis as it relates to documentation of results, quality control testing, calibration, and troubleshooting will be reviewed. Emphasis will be placed on critical thinking, quality of work, and laboratory technique. Prerequisites: Quality Lab Skills 1 (31-513-182)

31-513-186	Quality Lab Microbiology 2	2
------------	----------------------------	---

Credits: 2 Lecture Hours: 18 Lab Hours: 54

This course will review characteristics of microorganisms pertinent to the food manufacturing and quality testing industry. The learner will apply microbiological testing techniques used in the dairy food manufacturing and quality industry to ensure product quality and safety. Techniques in sampling methods and analysis of plate counts will be explored. Prerequisites: Quality Lab Microbiology 1 (31-513-181)

**6**

**Semester 03** (Tuition: \$330)

<b>Course #</b>	<b>Course Title</b>	<b>Credits</b>
10-513-187	Lab Science Practicum	2

Credits: 2 Lecture Hours: 0 Occupational Hours: 144

In this experiential course you will practice the principles and procedures of laboratory processes required in the food and dairy industry. You will become familiar with industry standards and practices related to quality assurance and safety while working in a laboratory setting. You will learn to operate state of the art instruments

and report results per industry protocols. Prerequisites: Manufacturing Practices for the Food Industry (10-513-188)

**2**

**Total Credits: 16**

**Estimated Total Tuition\*: \$2,930**