

# Science

## Course Offerings by Grade

Future Plans:	9th Grade	10th Grade	11th Grade	12th Grade
College Bound Science Major	Science 9 (2s) ^	Biology (2s)^	Chemistry (2s), and Human Phys (2s), and/or a Science Elective	*CAPP Bio# or *CAPP Chem#, and *Physics (2s)
College Bound Non-Science Major	Science 9 (2s) ^	Biology (2s)^	Chem Comm(2s) or Chemistry (2s) and/or Science Elective	Science Elective
Technical College; Skilled Trades	Science 9 (2s) ^	Biology (2s)^	Science Elective	Science Elective
School to Work	Science 9 (2s) ^	Biology (2s)^	Science Elective	Science Elective

- Classes with an ^ are required courses with exceptions as listed below.
- Each student is required to take 3 years (3 credits; six semesters) of science at SFHS.
- Number in parentheses is the length of the course in semesters.
- All courses are listed below under possible career clusters.

#Offered on alternating year basis

### Primary Career Clusters in Science

- Science, Technology, Engineering & Mathematics (STEM)
- Agriculture, Food & Natural Resources
- Health Science

### \*Laude Courses

- \*CAPP Chemistry 1.0
- \*CAPP Biology 1.0
- \*Human Physiology (LTC) 1.0
- \*Physics 1.0

STEM	Agriculture, Food, & NR	Health Science
Science 9 (2s) ^	Science 9 (2s) ^	Science 9 (2s) ^
Biology(2s) ^	Biology(2s) ^	Biology (2s) ^
*Human Physiology(2s)	Chemistry(2s) or Chem Comm(2s)	*Human Physiology(2s)
Chemistry(2s)	Earth Science (1s)	Chemistry (2s)
*Physics(2s)	Natural Resources/Ecology(1s)	*CAPP Biology and/or *CAPP Chemistry (2s)
*CAPP Biology and/or *CAPP Chemistry (2s)	Animal Vet Science (1s)	*Physics(2s)
Earth Science (1s)	Horticulture (1s)	
	Intro to Agriculture (1s) or (2s)	
	*Green and Growing (1s)	
	*Food Production (1s)	
	Landscape Architecture and Design (1s)	

## SCIENCE

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### Science 9

Course Code: SCISA/SCISB  
 Grade: 9  
 Prerequisites: None  
 Course Length: One year  
 Course Credit: 1.0  
 Offered: Yearly

#### *What you will learn in this course:*

This course serves at the gateway course to all other science courses in the high school, so it is a required course for all ninth graders. It is aligned to the Next Generation Science Standards and will assist students in preparation for ACT testing required during the eleventh grade year.

#### *How you will learn in this course:*

This course will incorporate laboratory experiences, group activities, lecture, class discussion, demonstration, and technology in an attempt to teach all learning styles.

#### *Why this course is important:*

This course is important because it will delineate concepts that are important for our students to achieve proficiency on the WKCE test in their sophomore year. It is the foundation for all other science courses including Chemistry, Physics and Earth Science. The mathematical concepts taught in this course will be used throughout your student's science career at Sheboygan Falls.

### Biology

Course Code: SCBIA/SCBIB  
 Grade: 10  
 Prerequisite: None  
 Course Length: One Year  
 Course Credit: 1.0  
 Offered: Yearly

#### *What you will learn in this course:*

You will be introduced to basic cellular biology & genetics, evolutionary theory, and a survey of lower kingdom and plant groups. Particular attention will be given to plants found in and around Wisconsin.

#### *How you will learn in this course:*

This course incorporates laboratory experiences, group activities, lecture, demonstration, and technology in an attempt to teach to all learning styles. Various projects give you opportunities to explore areas of interest in the biological sciences.

#### *Why this course is important:*

You will learn to appreciate the awesome intricacies of the cell, why you breathe oxygen, what makes you "you", as well as the interrelationships of bacteria, fungus, and plants in the world around you. The appreciation for other living organisms will help you make informed decisions about issues such as human health and the natural environment. **This course is required for graduation.**

### Natural Resource/Ecology

Course Code: AGNRM  
 Grade: 11-12  
 Prerequisite: None  
 Course Length: One semester  
 Course Credit: 0.5  
 Offered: Yearly

**\* Note: Can be used as a science credit or agriculture elective**

#### *What you will learn in this course:*

- Basics about agriculture
- How to do taxidermy
- Orienteering
- How to cruise timber
- Other aspects of the forestry industry
- Soil management
- Wildlife management
- Water management

#### *How you will learn in this course:*

- Field trips
- Hands-on activities
- Written assignments
- Oral presentations
- Class discussion
- Video tapes

#### *Why this course is important:*

- Increasing environmental consciousness
- Increasing need for proper environmental management
- Course provides introductory skills for natural resource management

### Earth Science

Course Code: SCES2  
 Grade: 10-12  
 Prerequisites: None  
 Course Length: One semester  
 Course Credit: 0.5  
 Offered: Yearly

#### *What you will learn in this course:*

Earth Science is a survey of many topics including space science, glacial geology, meteorology, volcanism and tectonics, oceanography, and geologic time. You will learn about the position of the earth in our universe and the forces that have changed our planet over millennia.

#### *How you will learn in this course:*

Each unit includes a balance of lecture and discussion, cooperative group work, learning from the textbook, videos, and field work. You will select, plan, and carry out several unit projects throughout the course.

#### *Why this course is important:*

We live in an ever-changing and dynamic planet. In order to fully understand and appreciate the wonders of our planet, it is important to understand the natural processes and forces that shape planet Earth.

**Chemistry in the Community (ChemComm)**

Course Code: SCCCA/SCCCB  
 Grade: 10-12  
 Prerequisite: *Biology, 1 yr math*  
 Course Length: One year  
 Course Credit: 1.0  
 Offered: Yearly

*What you will learn in this course:*

This course is a laboratory-based science class in which students will study a real world approach to introductory chemistry concepts. Many topics that are currently in the news show up as part of the curriculum. Students should elect Chemistry in the Community if they are planning to pursue careers that are not directly related to science such as law, education, liberal arts, journalism or business.

*How you will learn:*

Chemistry in the Community uses a hands-on approach to study the chemistry that affects our daily lives. Most of the class is student-centered with minimal lecture, theory and math. Students learn through laboratory experiments, projects, inquiry, problem-solving, and discussion.

*Why this course is important:*

This non-science majors college prep course offers connections to real life experiences and provides a firm foundation in the basic concepts of chemistry. Chemistry in the Community is recognized by the UW system as equivalent to general chemistry.

**Chemistry**

Course Code: SCCHA/SCCHB  
 Grade: 10-12  
 Prerequisites: *Recommended to take concurrently with Alg 2*  
 Course Length: One year  
 Course Credit: 1.0  
 Offered: Yearly

**It is strongly recommended for students who enroll in Chemistry to be at a math level of Algebra II or higher.**

*What you will learn in this course:*

This course is a laboratory-based science class in which students will study the history of chemistry, the models used in chemistry, the structure and properties of matter as they explore chemical reactions, the structure of atoms, conservation and interactions of energy and matter, the gas laws, and nuclear reactions.

*How you will learn in this course:*

Demonstrations and problem sets lead to a basic understanding of chemical theories and concepts; hand-on lab experiments reinforce these ideas.

*Why this course is important:*

This is a college prep chemistry course designed for students with strong math skills. It is also required for students enrolling in a technical college Registered Nursing Program.

**\*Human Physiology**

Course Code: SCHPA/SCHPB  
 Grade: 10-12  
 Prerequisites: *Biology*  
 Course Length: One year  
 Course Credit: 1.0 (3 credits may be earned at LTC)  
 Offered: Yearly  
 \*Laude Course—Class of 2019 and beyond

*What you will learn in this course:*

This course is designed to give an in-depth look at the structure and functions of the body using a system-by-system approach. Attention is also given to abnormal structure and functions.

*How you will learn in this course:*

The course is presented largely through lecture and group activities; there is a strong laboratory emphasis on skeletal, muscular, respiratory, nervous, circulatory, and urinary systems.

*Why this course is important:*

This course is especially valuable to students thinking of careers related to medicine, psychology, and physical education, but also has practical value for all other students.

**Articulated-Advanced credit standing (3-credits) 10-806-103 to technical colleges with a grade of B or higher for high school course. Valid through \_\_\_\_\_ school year.**

**\*Physics**

Course Code: SCPHA/SCPHB  
 Grade: 11-12  
 Prerequisite: *Algebra 2*  
 Course Length: One year  
 Course Credit: 1.0  
 Offered: Yearly  
 \*Laude Course—Class of 2019 and beyond

*What you will learn in this course:*

The course will begin with look at the history of scientific inquiry. The course follows with the study of classical mechanics - Newton's Laws of Motion, momentum, energy, rotational dynamics, and universal gravitation. You will continue with units covering states of matter, thermodynamics, sound and light, and electricity and magnetism. You will learn to measure different quantities of forces and energies and use these values to solve problems. The laws of the natural world will come to light with a conceptual approach to classical and modern physics.

*How you will learn in this course:*

There are many instruments that may be used to study forces and energy. You will learn to use several of them. Lecture/discussion, computer simulations, and problem-solving encourage higher level thinking.

*Why this course is important:*

This college prep physics course is especially valuable to students thinking of careers in engineering or physical sciences.

**\*CAPP Biology**

Course Code: SCABA/SCABB

Grade: 11-12

Prerequisite: Biology

**Strongly recommended: General Chemistry**

Course Length: One year

Course Credit: 1.0

**Offered: 2017-2018***\*Laude Course—Class of 2019 and beyond*

**This course is offered through Lakeland University at a cost of \$360 to the student for 4 college credits that are transferable to colleges and universities. Four college credits will be earned with satisfactory completion of this course. Lakeland University – BI 111, Life Sciences 1 (4 semester hours). Seniors will need to request a college transcript from Lakeland University to send to their respective college or university at the end of senior year. Please go to page 87 for more information.**

*What you will learn in this course:*

Concepts from Biology will be expanded and explored in this laboratory course. Topics include basic biological concepts of the chemistry of life, cell structure, cell function, the genetic basis of life, and the mechanisms of evolution. This course is recommended for those students considering science as a career choice. The main scope of the class is to learn biological concepts in great detail.

*How you will learn in this course:*

Through experimentation and lectures, this high-paced course concentrates on problem solving, test taking, and preparing for the next level of academics. This course will involve investigation of molecular models, analysis of data, group discussion, and laboratory experiments. These skills will be enhanced by advanced reading and research interpretation.

*Why this course is important:*

Successful completion of this course will earn you 3-4 college credits in BIO 111 at Lakeland University. All of the course and lab work will be done at SFHS yet you may earn college credit. You should be able to start college biology for science majors with the 2nd semester. Please check to be sure this course from Lakeland University will transfer to your desired university.

**\*CAPP Chemistry**

Course Code: SCCPA/SCCPB

Grade: 11-12

Prerequisites: Gen. Chem, Algebra 2/Trig

Course Length: 1 year

Course Credit: 1.0

**Offered: 2018-2019***\*Laude Course—Class of 2019 and beyond*

**This course is offered through Lakeland University at a cost of \$360 to the student for 4 college credits that are transferable to colleges and universities. Four college credits will be earned with satisfactory completion of this course. Lakeland University – CHM 131 Principles of Chemistry 1 (4 semester hours). Seniors will need to request a college transcript from Lakeland University to send to their respective college or university at the end of senior year. Please go to page 87 for more information.**

*What you will learn in this course:*

Concepts from General Chemistry will be expanded and explored in this laboratory course. Topics include the fundamental principles of chemistry, including modern atomic theory, states of matter, chemical stoichiometry, thermodynamics, and descriptive inorganic chemistry. The main scope of the class is to learn chemical concepts in great detail.

*How you will learn in this course:*

Through experimentation and lectures, this high-paced course concentrates on problem solving, test taking, and preparing for the next level of academics. This course will involve investigation of molecular models, problem sets, group discussion, and laboratory experiments. These skills will be enhanced by advanced reading and research interpretation.

*Why this course is important:*

Successful completion of this course will earn you 3-4 college credits in CHM 131 at Lakeland University. All of the course and lab work will be done at SFHS yet you may earn college credit. You should be able to start college chemistry with the 2nd semester. Please check to be sure this course from Lakeland University will transfer to your desired university.