

## ESSENTIAL ELEMENTS OF MATH

XSM741 (Sem 1), XSM742 (Sem 2)

DURATION: year course

CREDITS: 2

OPEN TO: all students

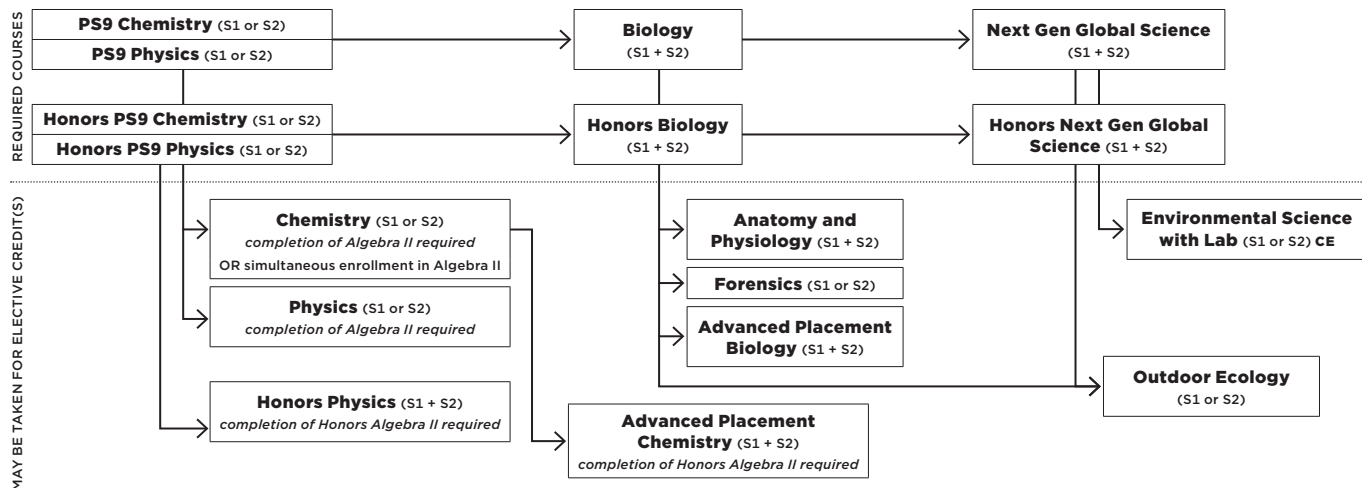
PREREQUISITE: placement based on assessment and instructor recommendation

The instruction will develop fundamental concepts of mathematics and concepts of operations and problem solving. Units covered include: operations with numbers, identify algebraic expressions, solve equations, use of graphs, measurement and solving real world problems. Real world applications: money concepts, comparative shopping, purchasing skills, budgets, measuring (cooking and home repair), reading and using graphs.

Alignment to the Iowa Core Curriculum: *Instruction, learning, and assessment are built on the 9-12th grade-band expectations of the Iowa Core and the Essential Elements.*

## SCIENCE COURSES

### SCIENCE COURSE PROGRESSION



Students planning to enroll in a 4-year college or university should take at least one additional semester of chemistry or physics as an elective.

CE = CONCURRENT ENROLLMENT

## PHYSICAL SCIENCE

CREDITS REQUIRED FOR GRADUATION

**2 credits** are required for graduation from the Dubuque Community School District.

Credits earned beyond the requirement are automatically counted as Elective credits.

### PS9 CHEMISTRY

SCI081

DURATION: semester course

CREDITS: 1

OPEN TO: freshmen

NCAA: approved

PREREQUISITE: none

This physical science course is designed to provide a base understanding of the components of chemistry. The course will focus on the structure and interaction of matter at the molecular level with laboratory experiences that will connect these concepts to a macro level. Connections to students' lives will be woven throughout course.

Alignment to the Iowa Core Science Standards: *HS-PS1 Matter and its Interactions (HSPS1-1, HS-PS1-2, HS-PS1-3, HS-PS1-4, HS-PS1-5, HS-PS1-6, HS-PS1-7, HS-PS1-8), HS-PS2 Motion and Stability: Forces and Interactions (HS-PS2-6), HS-PS3 Energy (HS-PS3-4), and HS-ETS Engineering Design (HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4).*

COMMENT: Students planning to enroll in a 4 year college or university will want to take at least one additional semester of elective chemistry or physics during their sophomore, junior, or senior year.

**PS9 PHYSICS**

**SCI082**

DURATION:	semester course
CREDITS:	1
OPEN TO:	freshmen
NCAA:	approved
PREREQUISITE:	none

This physical science course is designed to provide a base understanding of the components of physics. The course will focus on how matter moves, how it is made to move, and the energies involved. Key concepts include: motion, forces, momentum, energy, Newton's Laws, waves, electricity/magnetism, and light. Inquiry-based labs and hands-on engineering are integrated in the course.

Alignment to the Iowa Core Science Standards: *HS-PS2 Motion and Stability: Forces and Interactions (HS-PS2-1, HS-PS2-2, HS-PS2-3, HS-PS2-4, HS-PS2-5), HS-PS3 Energy (HS-PS3-1, HS-PS3-2, HS-PS3-3, HS-PS3-5), HS-PS-4 Waves and their Applications in Technologies for Information Transfer (HS-PS4-1, HS-PS4-2, HS-PS4-3, HS-PS4-4, HS-PS4-5) and HS-ETS Engineering Design (HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4).*

COMMENT: Students planning to enroll in a 4 year college or university will want to take at least one additional semester of elective chemistry or physics during their sophomore, junior, or senior year.

**HONORS PS9 CHEMISTRY**

**SCI091**

DURATION:	semester course
CREDITS:	1
OPEN TO:	freshmen
NCAA:	approved
PREREQUISITE:	none

This physical science course is for the academically advanced student seeking a rigorous path in chemistry. The course will focus on the structure and interaction of matter at the molecular level with laboratory experiences that will connect these concepts to a macro level. Pacing and breadth of concepts covered will be increased compared to the regular PS9 Chemistry course. This course will serve as a possible lead-in to AP Chemistry.

Alignment to the Iowa Core Science Standards: *HS-PS1 Matter and its Interactions (HSPS1-1, HS-PS1-2, HS-PS1-3, HS-PS1-4, HS-PS1-5, HS-PS1-6, HS-PS1-7, HS-PS1-8), HS-PS2 Motion and Stability: Forces and Interactions (HS-PS2-6), HS-PS3 Energy (HS-PS3-4), and HS-ETS Engineering Design (HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4).*

COMMENT: Students planning to enroll in a 4 year college or university will want to take at least one additional semester of elective chemistry or physics during their sophomore, junior, or senior year.

**HONORS PS9 PHYSICS**

**SCI092**

DURATION:	semester course
CREDITS:	1
OPEN TO:	freshmen
NCAA:	approved
PREREQUISITE:	none

This physical science course is for the academically advanced student seeking a rigorous path in physics. This course is designed to provide a base understanding of the components of physics. The course will focus on how matter moves, how it is made to move, and the energies involved. Key concepts include: motion, forces, momentum, energy, Newton's Laws, waves, electricity/magnetism, and light. Inquiry-base labs and hands-on engineering are integrated in the course. Pacing and breadth of concepts covered will be increased compared to the regular PS9 Physics course.

Alignment to the Iowa Core Science Standards: *HS-PS2 Motion and Stability: Forces and Interactions (HS-PS2-1, HS-PS2-2, HS-PS2-3, HS-PS2-4, HS-PS2-5), HS-PS3 Energy (HS-PS3-1, HS-PS3-2, HS-PS3-3, HS-PS3-5), HS-PS-4 Waves and their Applications in Technologies for Information Transfer (HS-PS4-1, HS-PS4-2, HS-PS4-3, HS-PS4-4, HS-PS4-5) and HS-ETS Engineering Design (HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4).* For more information, please visit [www.nextgenscience.org](http://www.nextgenscience.org) for a full description of each standard.

COMMENT: Students planning to enroll in a 4 year college or university will want to take at least one additional semester of elective chemistry or physics during their sophomore, junior, or senior year.

**ESSENTIAL ELEMENTS OF SCIENCE**

**XSM731 (Sem 1), XSM732 (Sem 2)**

DURATION:	year course
CREDITS:	2
OPEN TO:	all students
PREREQUISITE:	placement based on assessment and instructor recommendation

The instruction will provide students the opportunity to discover and understand the role of physical, earth, and global sciences. Units covered include: apply aspects of chemistry through labs and activities, investigate aspects of science through scientific inquiry, problem solving and discussions. Real world applications: chemical properties, weather, catastrophic occurrences, recycling and making predictions.

Alignment to the Iowa Core Curriculum: *Instruction, learning, and assessment are built on the 9-12th grade-band expectations of the Iowa Core and the Essential Elements.*

## LIFE SCIENCE

### CREDITS REQUIRED FOR GRADUATION

**2 credits** are required for graduation from the Dubuque Community School District.

Credits earned beyond the requirement are automatically counted as Elective credits.

## BIOLOGY

### SCI131 (Sem 1), SCI132 (Sem 2)

DURATION: year course

CREDITS: 2

OPEN TO: sophomores, juniors, seniors

NCAA: approved

PREREQUISITE: PS9 Chemistry, PS9 Physics

This course is designed for those students who desire a thorough background in basic biology and a strong basis for further science study. The course of study in Biology includes all the major themes essential to understanding life. This is often achieved through problem solving, laboratory experiences, and group activities. Students will apply the foundational concepts of Biology to real-world scenarios.

Alignment to the Iowa Core Science Standards: *HS-LS1 From Molecules to Organisms: Structures and Processes (HS-LS1-1, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-5, HS-LS1-6, HS-LS1-7), HS-LS-2 Ecosystems: Interactions, Energy, and Dynamics (HS-LS2-3, HS-LS2-4, HS-LS2-8), HS-LS3 Heredity: Inheritance and Variation of Traits (HS-LS3-1, HS-LS3-2, HS-LS3-3), HS-PS4 Biological Evolution: Unity and Diversity (HS-PS4-1, HS-PS4-2, HS-PS4-3, HS-PS4-4, HS-PS4-5, HS-PS4-6) and HS-ETS Engineering Design (HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4).*

## HONORS BIOLOGY

### SCI141 (Sem 1), SCI142 (Sem 2)

DURATION: year course

CREDITS: 2

OPEN TO: all students

NCAA: approved

PREREQUISITE: for incoming freshmen, simultaneous enrollment in Honors PS9 Chemistry and Honors PS9 Physics with instructor approval; for sophomores, completion of PS9 Chemistry and PS9 Physics with instructor approval; for juniors and seniors, instructor approval

This course is designed for the academically advanced student who desires a comprehensive background in biology to assist in future science studies. The course of study in Honors Biology includes an in-depth, accelerated approach to all the major themes essential to understanding life. This is often achieved through problem solving, laboratory experiences, and group activities. The text material provides the factual foundation necessary to understanding the principles of life discussed in the course.

Alignment to the Iowa Core Science Standards: *HS-LS1 From Molecules to Organisms: Structures and Processes (HS-LS1-1, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-5, HS-LS1-6, HS-LS1-7), HS-LS-2 Ecosystems: Interactions, Energy, and Dynamics (HS-LS2-3, HS-LS2-4, HS-LS2-8), HS-LS3 Heredity: Inheritance and Variation of Traits (HS-LS3-1, HS-LS3-2, HS-LS3-3), HS-PS4 Biological Evolution: Unity and Diversity (HS-PS4-1, HS-PS4-2, HS-PS4-3, HS-PS4-4, HS-PS4-5, HS-PS4-6) and HS-ETS Engineering Design (HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4).*

## ESSENTIAL ELEMENTS OF SCIENCE

### XSM731 (Sem 1), XSM732 (Sem 2)

DURATION: year course

CREDITS: 2

OPEN TO: all students

PREREQUISITE: placement based on assessment and instructor recommendation

The instruction will provide students the opportunity to discover and understand the role of physical, earth, and global sciences. Units covered include: apply aspects of chemistry through labs and activities, investigate aspects of science through scientific inquiry, problem solving and discussions. Real world applications: chemical properties, weather, catastrophic occurrences, recycling and making predictions.

Alignment to the Iowa Core Curriculum: *Instruction, learning, and assessment are built on the 9-12th grade-band expectations of the Iowa Core and the Essential Elements.*

## EARTH / SPACE SCIENCE

### CREDITS REQUIRED FOR GRADUATION

**2 credits** are required for graduation from the Dubuque Community School District.

Credits earned beyond the requirement are automatically counted as Elective credits.

## HONORS NEXT GEN GLOBAL SCIENCE

### SCI151 (Sem 1), SCI152 (Sem 2)

DURATION: year course

CREDITS: 2

OPEN TO: sophomores, juniors, seniors

NCAA: approved

PREREQUISITE: PS9 Chemistry (or Honors) and PS9 Physics (or Honors) with instructor approval, completion or simultaneous enrollment in Biology (or Honors) with instructor approval

Honors Next Gen Global Science is a year-long course that will provide students with the opportunity to discover and expand connections between science, technology, and global societies. This study of natural connections will help students become stewards of the environment, more informed citizens, and better decision-makers. Students will investigate the various aspects of our Earth, the Solar System and the Universe through scientific inquiry, laboratory activities, problem solving, current events, discussions, and projects. Honors Next Gen will have a strong presence of mathematics in regards to some concepts, i.e. Kepler's Laws of Motion or Climate Modeling.

Alignment to the Iowa Core Science Standards: *HS-ESS2- Earth's Systems, HS-ESS3 Earth and Human Activity, and HS-LS2 Ecosystems: Interactions, Energy, and Dynamics. In addition, it includes concepts in HS-ESS1 Earth's Place in the Universe and HS-LS4 Biological Evolution: Unity and Diversity.*

**NEXT GEN GLOBAL SCIENCE**

<b>SCI161 (Sem 1), SCI162 (Sem 2)</b>	
DURATION:	year course
CREDITS:	2
OPEN TO:	juniors and seniors
NCAA:	approved
PREREQUISITE:	PS9 Chemistry, PS9 Physics, Biology

Next Gen Global Science is a year-long course that will provide students with the opportunity to discover and expand connections between science, technology, and global societies. This study of natural connections will help students become stewards of the environment, more informed citizens, and better decision-makers. Students will investigate the various aspects of our Earth, the Solar System and the Universe through scientific inquiry, laboratory activities, problem solving, current events, discussions, and projects.

Alignment to the Iowa Core Science Standards: *HS-ESS2- Earth's Systems, HS-ESS3 Earth and Human Activity, and HS-LS2 Ecosystems: Interactions, Energy, and Dynamics. In addition, it includes concepts in HS-ESS1 Earth's Place in the Universe and HS-LS4 Biological Evolution: Unity and Diversity.*

**ESSENTIAL ELEMENTS OF SCIENCE**

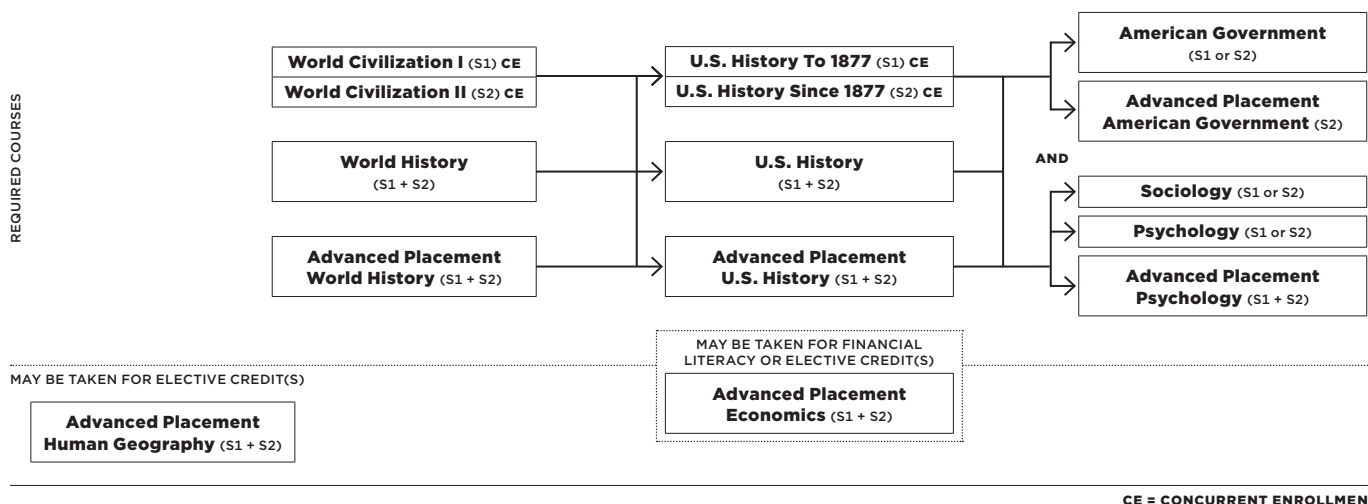
<b>XSM731 (Sem 1), XSM732 (Sem 2)</b>	
DURATION:	year course
CREDITS:	2
OPEN TO:	all students
PREREQUISITE:	placement based on assessment and instructor recommendation

The instruction will provide students the opportunity to discover and understand the role of physical, earth, and global sciences. Units covered include: apply aspects of chemistry through labs and activities, investigate aspects of science through scientific inquiry, problem solving and discussions. Real world applications: chemical properties, weather, catastrophic occurrences, recycling and making predictions.

Alignment to the Iowa Core Curriculum: *Instruction, learning, and assessment are built on the 9-12th grade-band expectations of the Iowa Core and the Essential Elements.*

**SOCIAL STUDIES COURSES**

SOCIAL STUDIES COURSE PROGRESSION



**WORLD HISTORY**

<b>CREDITS REQUIRED FOR GRADUATION</b>	<b>2 credits</b> are required for graduation from the Dubuque Community School District.
	Credits earned beyond the requirement are automatically counted as Elective credits.

**WORLD HISTORY**

<b>SOC221 (Sem 1), SOC222 (Sem 2)</b>	
DURATION:	year course
CREDITS:	2
OPEN TO:	sophomores
NCAA:	approved
PREREQUISITE:	none

World History is a year-long, two-credit course. The student will study in depth the societies, themes and issues that mark the interaction of the world and will focus on the diversity of the human experience. This course covers the ideas and institutions that have shaped our modern world. Students focus in depth on the world's history in both hemispheres from the Industrial Revolution to the present. Units of study will focus on interactive lessons dealing with Africa, Europe, Asia, the Middle East, and the Americas and their interconnectedness.

Emphasis in this course will be placed on content mastery, literacy skills, and inquiry-based thinking. The general format of the class will include use of historical thinking skills and analysis of primary and secondary texts in addition to inquiry-based discussion and writing assessments.

Alignment to the Iowa Core Curriculum: *Instruction, learning, and assessment are built on the 9-12 Social Studies Inquiry Standards, 9-12 World History Standards, and the 9-10 Reading and Writing Standards for History/Social Studies.*