

**DEPARTMENT OF MATHEMATICS AND PHYSICAL SCIENCES  
SCHOOL OF MATHEMATICS, SCIENCE, AND HEALTH SCIENCES**

**Dr. John Sawyer, Interim Department Head**

Mr. Larry Elzo  
Dr. Doug Grenier  
Mr. Sam Richardson

Dr. Patrick Seward  
Ms. Evalon St. John

Dr. Min Soe  
Dr. Kirk Voska

**MISSION STATEMENT AND PURPOSES**

The mission of the Department of Mathematics and Physical Sciences at Rogers State University is to support students in their pursuit of knowledge in mathematics and physical science. Our purposes are:

1. To increase the student's critical thinking and reasoning abilities.
2. To increase the student's understanding and appreciation of the physical world, and the ability to apply this understanding in his/her personal and professional life.
3. To increase the student's awareness of the benefits of incorporation of technology into Science and Math studies.
4. To increase the student's ability to interpret and understand his/her world mathematically.
5. To prepare a student to matriculate into a four-year degree program in math or science related fields or graduate.
6. To serve as a resource for the community, utilizing the expertise of the faculty.

**PROGRAMS OF STUDY**

**Minor**

Chemistry

**Associate in Science**

Physical Science

Option: Chemistry

Option: Engineering/Physics/Math

Option: Geology

A minor requires completion of at least 18-24 designated credit hours of course work outside the student's major field, including a minimum of 9 upper-division credit hours, and may have a required core. The same courses may not be used to fulfill the requirements for both a major and a minor.

### **MINOR IN CHEMISTRY (028C)**

**Requirements** ..... **20**

CHEM 1315 General Chemistry I  
CHEM 1415 General Chemistry II  
CHEM 3125 Organic Chemistry I  
CHEM 3225 Organic Chemistry II

**Total Credit Hours** ..... **20**

The same courses may not be used to fulfill the requirements for both a major and a minor.

## ASSOCIATE IN SCIENCE

### PHYSICAL SCIENCE

#### OPTION: CHEMISTRY (028C)

The Associate in Science in Physical Science with an option in Chemistry is designed to provide the student with the first two years of general requirements.

REQUIRED HOURS ..... 65

**Communications** ..... 9

- ENGL 1113 Composition I
- ENGL 1213 Composition II
- SPCH 1113 Speech Communication

**Social and Behavioral Sciences** ..... 9

History ..... 3

*Select from the following:*

- HIST 2483 American History to 1877
- HIST 2493 American History since 1877

POLS 1113 American Federal Government ..... 3

Social Science ..... 3

*Select from the following:*

- ECON 2113 Principles of Macroeconomics
- ECON 2123 Principles of Microeconomics
- PSY 1113 Introduction to Psychology
- SOC 1113 Introduction to Sociology

**Science and Mathematics** ..... 12

Physical Science ..... 5

*Select from the following:*

\* **CHEM 1315 General Chemistry I**

- GEOL 1014 Earth Science
- GEOL 1114 Physical Geology
- GEOL 1124 Physical Geography
- GEOL 1224 Historical Geology
- GEOL 2124 Astronomy
- PHYS 1014 General Physical Science
- PHYS 1114 General Physics I

Biological Science ..... 4

*Select from the following:*

- BIOL 1114 General Biology
- BIOL 1134 General Environmental Biology
- BIOL 1144 General Cellular Biology

Mathematics ..... 3

*Select from the following:*

- MATH 1503 Mathematics for Critical Thinking
- MATH 1513 College Algebra or higher
- MATH 1613 Trigonometry
- MATH 1715 Pre-Calculus
- MATH 2264 Analytical Geometry and Calculus I

**Humanities** ..... 6

*Select from the following:*

- ART (HUM)1113 Art Appreciation
- COMM (HUM)2413 Theatre Appreciation
- ENGL 2613 Introduction to Literature
- HUM 2113 Humanities I
- HUM 2223 Humanities II
- HUM 2893 Cinema
- MUSC (HUM) 2573 Music Appreciation
- PHIL 1113 Introduction to Philosophy

**Global Studies** ..... 3

*Select from the following:*

- BIOL 3104 Plants and Civilization
- ECON 3003 International Economic Issues and Policies
- GEOG 2243 Human Geography
- HIST 2013 World Civilization I
- HIST 2023 World Civilization II
- HUM 3633 Comparative Religion
- LANG 1113 Foundations of World Languages
- NAMS 1143 Native Americans of North America
- NAMS 2503 Cherokee I
- PHIL 1313 Values and Ethics
- POLS 3053 International Relations
- SOC 3213 Minority Groups
- SPAN 1113 Beginning Spanish I

**Elective** ..... 3

*Select three hours from courses not selected above.*

**\* Required**

**Program Requirements** ..... 12-13

- CHEM 1415 General Chemistry II
- MATH 1613 Trigonometry or
- MATH 2364 Analytical Geometry and Calculus II
- PHYS 1114 General Physics I or
- PHYS 2015 Engineering Physics I

**Support and Related** ..... 10

*Select from the following:*

- CHEM 2515 Environmental Chemistry
- CHEM 3125 Organic Chemistry I
- CHEM 3225 Organic Chemistry II

**Total Credit Hours** ..... 65

**ASSOCIATE IN SCIENCE**  
**PHYSICAL SCIENCE**  
**OPTION: ENGINEERING/PHYSICS/MATH (028E)**

The Associate in Science in Physical Science with an option in Engineering/Physics/Math is designed to give the student a broad but intense background in engineering, physics, and math.

REQUIRED HOURS ..... 65

**Communications ..... 9**

- ENGL 1113 Composition I
- ENGL 1213 Composition II
- SPCH 1113 Speech Communication

**Social and Behavioral Sciences ..... 9**

History ..... 3

*Select from the following:*

- HIST 2483 American History to 1877
- HIST 2493 American History since 1877

POLS 1113 American Federal Government ..... 3

Social Science ..... 3

*Select from the following:*

- ECON 2113 Principles of Macroeconomics
- ECON 2123 Principles of Microeconomics
- PSY 1113 Introduction to Psychology
- SOC 1113 Introduction to Sociology

**Science and Mathematics ..... 13**

Physical Science ..... 5

*Select from the following:*

\* **CHEM 1315 General Chemistry I**

- GEOL 1014 Earth Science
- GEOL 1114 Physical Geology
- GEOL 1124 Physical Geography
- GEOL 1224 Historical Geology
- GEOL 2124 Astronomy
- PHYS 1014 General Physical Science
- PHYS 1114 General Physics I

Biological Science ..... 4

*Select from the following:*

- BIOL 1114 General Biology
- BIOL 1134 General Environmental Biology
- BIOL 1144 General Cellular Biology

Mathematics ..... 4

*Select from the following:*

- MATH 1503 Mathematics for Critical Thinking
- MATH 1513 College Algebra .....
- MATH 1613 Trigonometry .....
- MATH 1715 Pre-Calculus .....

\* **MATH 2264 Analytical Geometry and Calculus I**

**Humanities ..... 6**

*Select from the following:*

- ART (HUM)1113 Art Appreciation
- COMM (HUM)2413 Theatre Appreciation
- ENGL 2613 Introduction to Literature
- HUM 2113 Humanities I
- HUM 2223 Humanities II
- HUM 2893 Cinema
- MUSC (HUM) 2573 Music Appreciation
- PHIL 1113 Introduction to Philosophy

**Global Studies ..... 3**

*Select from the following:*

- BIOL 3104 Plants and Civilization
- ECON 3003 International Economic Issues and Policies
- GEOG 2243 Human Geography
- HIST 2013 World Civilization I
- HIST 2023 World Civilization II
- HUM 3633 Comparative Religion
- LANG 1113 Foundations of World Languages
- NAMS 1143 Native Americans of North America
- NAMS 2503 Cherokee I
- PHIL 1313 Values and Ethics
- POLS 3053 International Relations
- SOC 3213 Minority Groups
- SPAN 1113 Beginning Spanish I

**Elective ..... 3**

*Select three hours from courses not selected above.*

**\*Required**

**Program Requirements ..... 12-13**

- CHEM 1415 General Chemistry II
- MATH 1613 Trigonometry or
- MATH 2364 Analytical Geometry and Calculus II
- PHYS 1114 General Physics I or
- PHYS 2015 Engineering Physics I

**Support and Related ..... 10**

*Select five credit hours from the following:*

- MATH 2364 Analytical Geometry and Calculus II
- MATH 2464 Analytical Geometry and Calculus III
- MATH 2843 Statistics
- MATH 3113 Differential Equations
- PHYS 2115 Engineering Physics II

**Total Credit Hours ..... 65**

## ASSOCIATE IN SCIENCE

### PHYSICAL SCIENCE

OPTION: GEOLOGY (028G)

The Associate in Science in Physical Science with an option in Geology is designed to provide the student with the first two years of general requirements.

REQUIRED HOURS ..... 62

**Communications** ..... 9

- ENGL 1113 Composition I
- ENGL 1213 Composition II
- SPCH 1113 Speech Communication

**Social and Behavioral Sciences** ..... 9

History ..... 3

*Select from the following:*

- HIST 2483 American History to 1877
- HIST 2493 American History since 1877

POLS 1113 American Federal Government ..... 3

Social Science ..... 3

*Select from the following:*

- ECON 2113 Principles of Macroeconomics
- ECON 2123 Principles of Microeconomics
- PSY 1113 Introduction to Psychology
- SOC 1113 Introduction to Sociology

**Science and Mathematics** ..... 11

Physical Science ..... 4

*Select from the following:*

- CHEM 1315 General Chemistry I
- GEOL 1014 Earth Science
- GEOL 1114 Physical Geology
- GEOL 1124 Physical Geography
- GEOL 1224 Historical Geology
- GEOL 2124 Astronomy
- PHYS 1014 General Physical Science
- PHYS 1114 General Physics I

Biological Science ..... 4

*Select from the following:*

- BIOL 1114 General Biology
- BIOL 1134 General Environmental Biology
- BIOL 1144 General Cellular Biology

Mathematics ..... 3

*Select from the following:*

- MATH 1503 Mathematics for Critical Thinking
- MATH 1513 College Algebra or higher
- MATH 1613 Trigonometry
- MATH 1715 Pre-Calculus
- MATH 2264 Analytical Geometry and Calculus I

**Humanities** ..... 6

*Select from the following:*

- ART (HUM)1113 Art Appreciation
- COMM (HUM)2413 Theatre Appreciation
- ENGL 2613 Introduction to Literature
- HUM 2113 Humanities I
- HUM 2223 Humanities II
- HUM 2893 Cinema
- MUSC (HUM) 2573 Music Appreciation
- PHIL 1113 Introduction to Philosophy

**Global Studies** ..... 3

*Select from the following:*

- BIOL 3104 Plants and Civilization
- ECON 3003 International Economic Issues and Policies
- GEOG 2243 Human Geography
- HIST 2013 World Civilization I
- HIST 2023 World Civilization II
- HUM 3633 Comparative Religion
- LANG 1113 Foundations of World Languages
- NAMS 1143 Native Americans of North America
- NAMS 2503 Cherokee I
- PHIL 1313 Values and Ethics
- POLS 3053 International Relations
- SOC 3213 Minority Groups
- SPAN 1113 Beginning Spanish I

**Elective** ..... 3

*Select three hours from courses not selected above.*

**Program Requirements** ..... 12-13

- CHEM 1415 General Chemistry II
- MATH 1613 Trigonometry or
- MATH 2364 Analytical Geometry and Calculus II
- PHYS 1114 General Physics I or
- PHYS 2015 Engineering Physics I

**Support and Related** ..... 8

*Select two from the following:*

- GEOL 1014 Earth Science
- GEOL 1114 Physical Geology
- GEOL 1124 Physical Geography
- GEOL 1224 Historical Geology
- GEOL 2124 Astronomy

**Total Credit Hours** ..... 62