

HIGH SCHOOL STEM GO BEYOND

A Course Guideline



4 high schools. 4 years. 4 pathways.
4 ALL.



Science Associate Degree Pathways:	Pg. 4
Associate of Science Degree in Biology-Human Biology	
Associate of Science Degree in Biology-Organismal	
Associate of Science Degree in Chemistry	
Associate of Science Degree in Environmental Science	
Sciences Up to 30 College Hours	Pg. 14
STEM CTE Science	Pg. 15
Renewable Energy Cluster	



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Associate of Science Degree in Computer Science	
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Board of Trustees	

Vision

To develop a vision of future academic and career possibilities and enable students to translate those visions into the realities of college graduation, informed citizenship, and international leadership.

Mission

Through a technology enriched curriculum designed to activate analytical, critical, and inventive thinking, Killeen ISD STEM Academy will prepare students to thrive in a highly complex 21st century society by providing project based learning opportunities that engage, excite, and empower students to be self-motivated, adept, lifelong learners.



SC



sci·ence

noun

The intellectual, and practical activity encompassing the systematic study of the structure, and behavior of the physical, and natural world through observation, and experiment.

SCIENCE

Pathway



S

PATHWAY: Associate of Science

C

Total College Hours: 72

*College Credit

I

High School Course

College Course

E

9th Grade

English I PreAP
World History PreAP or AP World History
Algebra II
Biology PreAP
PE or Athletics
LOTE II
Geometry PreAP

N

10th Grade

English II PreAP
Chemistry PreAP
Dual Credit Algebra/ PreCal
Special Topics in Social Studies TX GOVT
Communication Applications/ Art I
Elective x 2.5

C

MATH 1414*/ 2412*
GOVT 2306*
SPCH 1315*/ HUMA 1315*

E

Degree in Biology - Human Biology

High School Course

College Course

11th Grade

English III
(SRD) Dual Credit Biology
US History
(SRD) Dual Credit Chemistry
AP Calculus AB
Elective x 2

ENGL 1301*/ 1302*
BIOL 1406*/ 1407*
HIST 1301*/ 1302*
CHEM 1411*/ 1412*

12th Grade

English IV
Anat & Physio / Microbiology
Government
Economics
(SRD III) Dual Credit Chemistry
AP Statistics
Elective x 2

ENGL 2322*/ 2323*
BIOL 2401*/ 2421*
GOVT 2305*
ECON 2301*
CHEM 2423*/ 2425*

S

PATHWAY: Associate of Science

C

Total College Hours: 64

*College Credit

I

High School Course

College Course

E

9th Grade

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Elective

N

10th Grade

English II PreAP
Geometry PreAP
Chemistry PreAP
Special Topics in Social Studies TX GOVT
Communication Applications/ Art I
Elective x 2.5

GOVT 2306*
SPCH 1315*/ HUMA 1315*

C

E

ce Degree in Biology - Organismal

High School Course

College Course

11th Grade

English III
Dual Credit Alegbra/PreCal
Physics PreAP or AP Physics
US History
(SRD I) Dual Credit Biology
Elective x 2

ENGL 1301*/ 1302*
MATH 1414*/ 2412*

HIST 1301*/ 1302*
BIOL 1406*/ 1407*

12th Grade

English IV
(SRD I) Dual Credit Chemistry / Environmental
Government
Economics
(SRD III) Dual Credit Zoology/Microbiology
AP Statistics
Elective x 2

ENGL 2322*/ 2323*
CHEM 1411*/ ENVR 1401*
GOVT 2305*
ECON 2301*
BIOL 1413*/ 2421*

S

PATHWAY: Associate of Science

C

Total College Hours: 64

*College Credit

I

High School Course

College Course

E

9th Grade

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Geometry PreAP

N

10th Grade

English II PreAP
Chemistry PreAP
Dual Credit Algebra/ PreCal
Special Topics in Social Studies TX GOVT
Communication Applications/ Art I
Elective x 2.5

C

MATH 1414*/ 2412*
GOVT 2306*
SPCH 1315*/ HUMA 1315*

E

Science Degree in Chemistry

High School Course

College Course

11th Grade

English III
(SRD I) Dual Credit Biology/Physics
US History
(SRD I) Dual Credit Chemistry
AP Calculus AB
Elective x 2

ENGL 1301*/ 1302*
BIOL 1406*/ PHYS 1401*
HIST 1301*/ 1302*
CHEM 1411*/ 1412*

12th Grade

English IV
(SRD III) Dual Credit Organic Chemistry
Government
Economics
AP Statistics
Elective x 3

ENGL 2322*/ 2323*
CHEM 2423*/ 2425*
GOVT 2305*
ECON 2301*

S PATHWAY: Associate of Science

C Total College Hours: 64
*College Credit

I High School Course College Course

9th Grade

E English I PreAP
World History PreAP or AP History
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Geometry PreAP

10th Grade

N English II PreAP
Dual Credit Algebra/ PreCal
Chemistry PreAP
Special Topics in Social Studies TX GOVT
Communication Applications/ Art I
Elective x 2

C MATH 1414*/ 2412*

GOVT 2306*
SPCH 1315*/ HUMA 1315*

E

Degree in Environmental Science

High School Course

College Course

11th Grade

English III
(SRD I) Dual Credit Physics
US History
(SRD II) Dual Credit Chemistry
AP Calculus AB
Elective x 2

ENGL 1301* / 1302*
PHYS 1401* / 1402*
HIST 1301* / 1302*
CHEM 1411* / 1412*

12th Grade

English IV
Dual Credit Environmental Science
Government
Economics
(SRD III) Dual Credit Physical Geology
AP Statistics
Elective x 3

ENGL 2322* / 2323*
ENVR 1401*
GOVT 2305*
ECON 2301*
GEOL 1403*

S

PATHWAY: Up to 30 College Hours

C

Total Potential College Hours: 30

*College Credit

I

9th Grade Requirements:

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Elective

E

11th Grade Requirements:

ENGL 1301*/ 1302*
HIST 1301*/ 1302*
PreCal PreAP
Physics PreAP or AP Physics
Elective x 2

N

10th Grade Requirements:

English II PreAP
SPCH 1315*/ HUMA 1315*
Geometry PreAP
Chemistry PreAP
STEM Elective
Elective x 2

C

12th Grade Requirements:

ENGL 2322*/ 2323*
GOVT 2305*/ ECON 2301*
AP Calculus AB
AP Environmental Science
Elective x 3

E

PATHWAY: CTE Science

Renewable Energy Cluster

9th Grade Requirements:

English I PreAP
Principles of Applied Engineering
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Elective

11th Grade Requirements:

English III PreAP
US History PreAP
PreCal PreAP
AC/DC Electronics
Physics PreAP or AP Physics
Elective x2

10th Grade Requirements:

English II PreAP
Engineering Des & Presentation I
Geometry PreAP
Chemistry PreAP
World History PreAP
Elective x 2

12th Grade Requirements:

English IV
Government
Economics
Engineering Mathematics (Choose 5th Math)
Practicum in STEM- Renewable Energy (2)
Engineering Science
Elective

TECH



Tech·nol·o·gy

noun

The branch of knowledge that deals with the creation and the application of technical means and its interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science.

00100

01101

01100

01110

01100

NOLOGY

Pathway

011 01101011

001 01110011

100 00110100

011 01110100

101 01101101

PATHWAY: Associate of Science

Total College Hours: 66

*College Credit

High School Course

College Course

9th Grade

English I PreAP
World History PreAP or AP History
Algebra II PreAP
Geometry PreAP
Biology PreAP
PE or Athletics
LOTE II

10th Grade

English II PreAP
Dual Credit Algebra/ PreCal
Chemistry PreAP
Special Topics in Social Studies TX GOVT
Communication App/ Art I
Computer Science
Elective x 1.5

MATH 1414*/ 2412*

GOVT 2306*
SPCH 1315*/ HUMA 1315*
COSC 1301*/ 1315*

ce Degree in Computer Science

High School Course

College Course

11th Grade

English III
Physics PreAP or AP Physics
US History
Computer Science
AP Calculus AB
Elective x 2

ENGL 1301*/ 1302*

HIST 1301*/ 1302*

COSC 1336*/ 1337*

12th Grade

English IV
Dual Credit Biology
Government
Economics
Computer Science
AP Statistics
Elective x 2

ENGL 2322*/ 2323*

BIOL 1406*/ 1407*

GOVT 2305*

ECON 2301*

COSC 2325*/ 2336*

PATHWAY: Core Complete

Total Potential College Hours: 55

*College Credit

9th Grade Requirements:

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Computer Science I

11th Grade Requirements:

ENGL 1301*/ 1302*
HIST 1301*/ 1302*
PreCal PreAP
AP Chemistry
Principles of Technology
Elective x 2

10th Grade Requirements:

English II PreAP
Discrete Math for Computer Science
Geometry PreAP
Chemistry PreAP
SPCH 1315*/ HUMA 1315*
AP Computer Science
Elective

12th Grade Requirements:

ENGL 2322/2323*
GOVT 2305/ ECON 2301*
MATH 2413*/ 1342* (CALC 1/ STAT)
PHYS 1401*/ 1402*
Computer Science 3
Elective x 2

PATHWAY: Up to 30 College Hours

Total Potential College Hours: 30

*College Credit

9th Grade Requirements:

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
PE or Athletics
LOTE II
Computer Science I

11th Grade Requirements:

ENGL 1301*/ 1302*
HIST 1301*/ 1302*
PreCal PreAP
Physics PreAP or AP Physics
Digital Forensics / Mobile APP Dev.
Principles of Technology
Elective

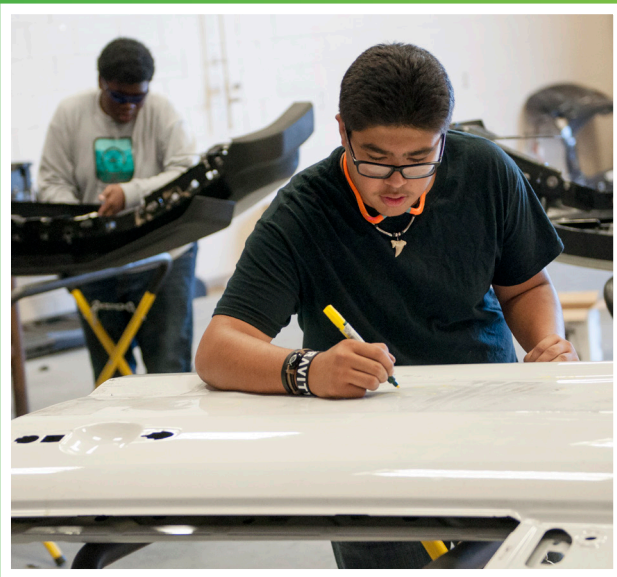
10th Grade Requirements:

English II PreAP
Discrete Math for Computer Science
Geometry PreAP
Chemistry PreAP
SPCH 1315*/ HUMA 1315*
AP Computer Science
Elective

12th Grade Requirements:

ENGL 2322*/ 2323*
GOVT 2305*/ ECON 2301*
AP Calculus AB
AP Chemistry
Computer Science 3
Elective x 2

ENGINE



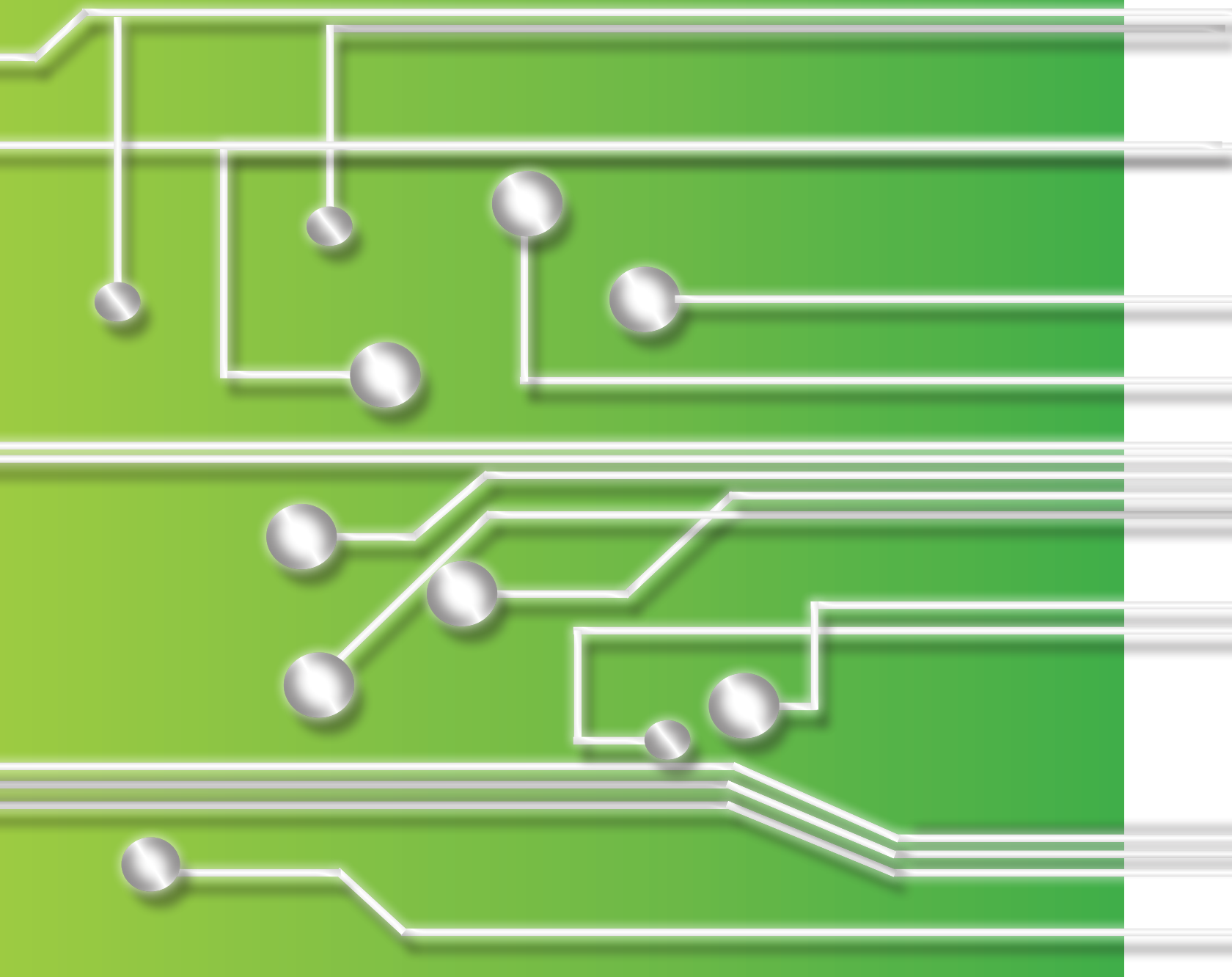
En·gi·neer·ing

noun

The branch of science and technology concerned with the application of mathematics, science, economics, and social and practical knowledge to invent, innovate, design, build, maintain, research, and improve structures, machines, tools, and systems.

EEARING

Pathway



PATHWAY: Associate of S

Total College Hours: 75

*College Credit

High School Course

College Course

9th Grade

- English PreAP
- World History PreAP or AP World History
- Algebra II PreAP
- Geometry PreAP
- Biology PreAP
- PE or Athletics
- LOTE II

10th Grade

- English II PreAP
- Dual Credit Algebra/ PreCal
- Chemistry PreAP
- Special Topics in Social Studies TX GOVT
- Communication App/Art I
- Elective x 2.5

MATH 1414*/ 2412*

GOVT 2306*
SPCH 1315*/ HUMA 1315*

Science Degree in Engineering

High School Course

College Course

11th Grade

English III
Physics PreAP or AP Physics
US History
(ISM) Calculus I/ Calculus II
Principles of Engineering
(SRD I) - Chemistry
Elective x 1.5

ENGL 1301*/ 1302*

HIST 1301*/ 1302*

MATH 2413*/ 2414*

ENGR 1201*/ 2301*

CHEM 1411*

12th Grade

English IV
Dual Credit Physics
Government
Economics
(ISM) Calculus III
(SRD II) Engineering
(SRD III) Mechanics II - Dynamics
Elective x 2

ENGL 2322* / 2323*

PHYS 2425*/ 2426*

GOVT 2305*

ECON 2301*

MATH 2415*

ENGR 2302*/ 2305*

ENGR 2332*

PATHWAY: Core Complete

Total Potential College Hours: 54

*College Credit

9th Grade Requirements:

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
LOTE II
Principles of Applied Engineering
Elective

11th Grade Requirements:

ENGL 1301*/1302*
HIST 1301*/1302*
MATH 1414*/ 2412*
Physics PreAP or AP Physics
GOVT 2306*/ Elective
Engineering Science
Solid State Electronics or Robotics 2

10th Grade Requirements:

English II PreAP
Chemistry PreAP
Geometry PreAP
SPCH 1315*/ HUMA 1315*
AC/DC Electronics or Robotics I
PE or Athletics
Elective

12th Grade Requirements:

ENGL 2322*/ 2323*
GOVT 2305*/ ECON 2301*
MATH 2413*/ 2414* (CALC I/CALC II)
ENGR 1201*/ 2301*
Engineering Design and Presentation
Elective x 2

PATHWAY: Up to 30 College Hours

Total Potential College Hours: 30

*College Credit

9th Grade Requirements:

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
LOTE II
Principles of Applied Engineering
Elective

11th Grade Requirements:

ENGL 1301*/ 1302*
HIST 1301*/ 1302*
PreCal PreAP
Physics PreAP or AP Physics
Engineering Science
Robotics 2
Elective

10th Grade Requirements:

English II PreAP
Chemistry PreAP
Geometry PreAP
SPCH 1315*/ HUMA 1315*
PE or Athletics
Robotics 1
Elective

12th Grade Requirements:

ENGL 2322*/ 2323*
GOVT 2305*/ ECON 2301*
AP Calculus AB
AP Chemistry
Engineering Design and Presentation
Elective x 2

PATHWAY: CTE Engineering

Engineering Cluster

9th Grade Requirements:

English I PreAP
Algebra II PreAP
Biology PreAP
PE or Athletics
Principles of Applied Engineering
LOTE II
Elective

11th Grade Requirements:

English III PreAP
US History PreAP
PreCal PreAP
Physics PreAP or AP Physics
Engineering Science
Elective x 2

10th Grade Requirements:

English II PreAP
Chemistry PreAP
Geometry PreAP
World History PreAP
Principles of Technology
Elective x 2

12th Grade Requirements:

English IV
Government
Economics
Engineering Mathematics
Physics PreAP or AP Physics
Digital Electronics
Elective x 2

Engineering Cluster Options

Robotics Cluster

9th Grade Requirements:

English I PreAP
Algebra II PreAP
Biology PreAP
PE or Athletics
Principles of Applied Engineering
LOTE II
Elective

11th Grade Requirements:

English II PreAP
US History PreAP
PreCal PreAP
Robotics II
Physics PreAP or AP Physics
Elective x 2

10th Grade Requirements:

English II PreAP
Geometry II PreAP
Chemistry PreAP
World History PreAP
Robotics I
Elective x 2

12th Grade Requirements:

English IV
Government
Economics
Engineering Mathematics (Choose 5th Math)
Practicum in STEM- Robotics (2)
Engineering Science
Elective

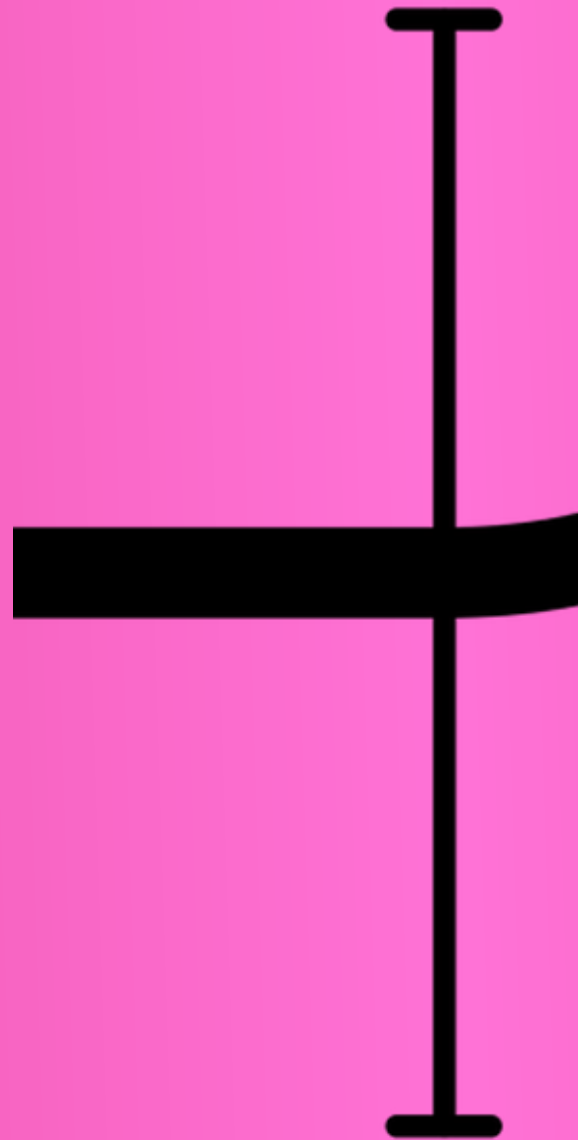
MATHE



Math·e·mat·ics

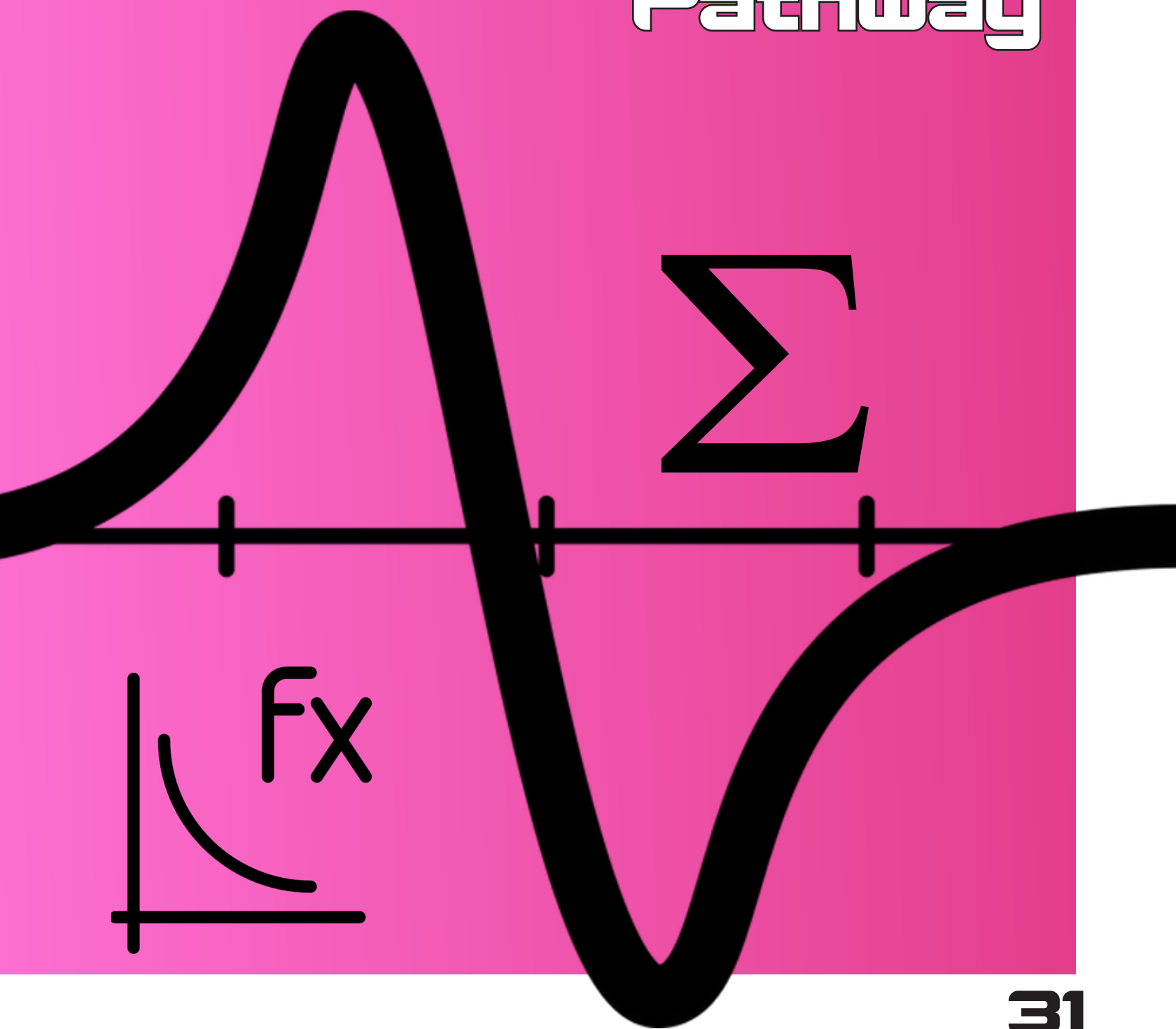
noun

Mathematics is the science that deals with the logic of shape, quantity, and arrangement using processes, rules, and symbols.



MATICS

Pathway



PATHWAY: Associate of Science

Total College Hours: 63

*College Credit

High School Course

College Course

9th Grade

English I PreAP
World History PreAP or AP History
Algebra II PreAP
Geometry PreAP
Biology PreAP
PE or Athletics
LOTE II

10th Grade

English II PreAP
Dual Credit Algebra/ PreCal
Chemistry PreAP
Special Topics in Social Studies TX GOVT
Communication App/ Art I
STEM Elective
Elective

MATH 1414*/ 2412*

GOVT 2306*

SPCH 1315*/ HUMA 1315*

Science Degree in Mathematics

High School Course

College Course

11th Grade

English III
Physics PreAP or AP Physics
(ISM) Calculus I/ Calc II
US History
Elective x 3

ENGL 1301*/ 1302*

MATH 2413*/ 2414*
HIST 1301*/ 1302*

12th Grade

English IV
Dual Credit Biology
Government
Economics
(ISM III) Calc III/ Differential Equations
Elective x 3

ENGL 2322*/ 2323*
BIOL 1406*/ 1407*
GOVT 2305*
ECON 2301*
MATH 2415*/ 2320*

M

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S

PATHWAY: Up to 30 College Hours

Total Potential College Hours: 30

9th Grade Requirements:

English I PreAP
World History PreAP or AP World History
Algebra II PreAP
Biology PreAP
Geometry PreAP
PE or Athletics
LOTE II

11th Grade Requirements:

ENGL 1301*/ 1302*
HIST 1301*/ 1302*
AP Calculus AB
Physics PreAP or AP Physics
Elective x 3

10th Grade Requirements:

English II PreAP
PreCal PreAP
Chemistry PreAP
SPCH 1315*/ HUMA 1315*
STEM Elective
Elective x 2

12th Grade Requirements:

ENGL 2322*/ 2323*
GOVT 2305*/ ECON 2301*
AP Calculus BC
AP Chemistry
AP Statistics
Elective x 2

Why STEM?

The STEM Academy is a problem based learning environment that offers opportunities for students to create solutions for questions yet to be asked.

The goal of the KISD High School STEM Academy is to offer STEM opportunities to all students no matter where they begin their STEM journey. KISD's HS STEM Program offers flexibility in multiple entry points. Talk to your counselor to determine your best entry point into the STEM Program.



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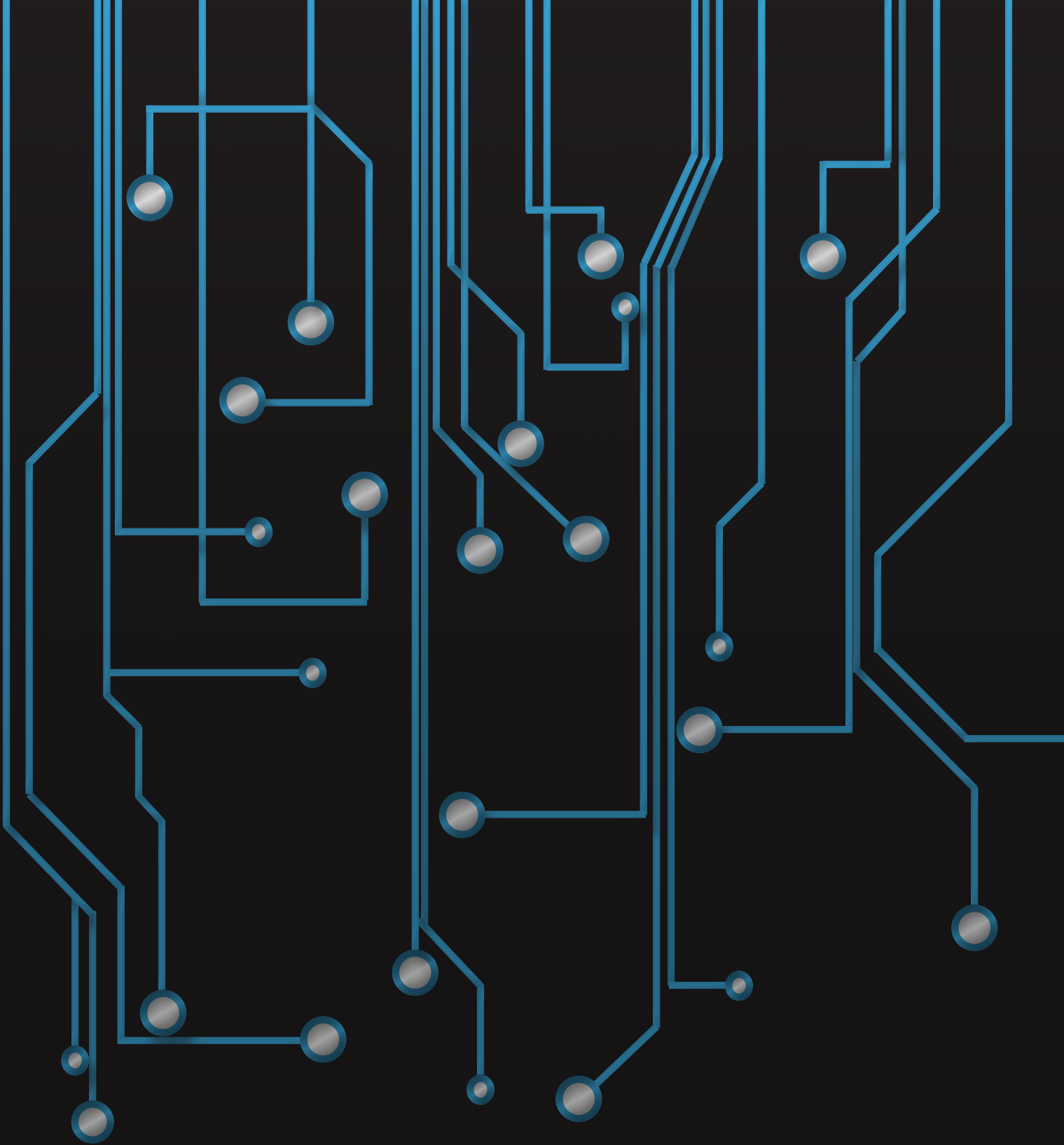
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