



KETTERING FAIRMONT HIGH SCHOOL

2019-2020

PROGRAM OF STUDIES





IS THIS YOU?

Do you have an aptitude for math, science, and/or computers?

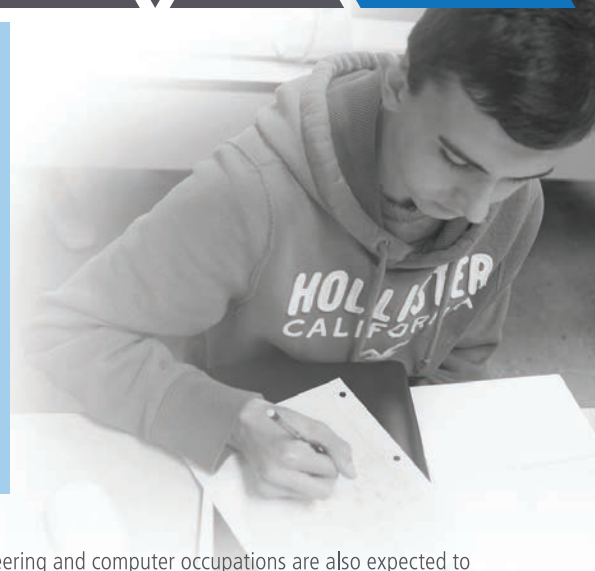
Can you read scientific information and follow directions?

Do you have above average mathematics and science skills? Can you use the scientific method and arrive at logical solutions?

Do you enjoy solving problems using facts and judgments?

Can you work accurately with detailed information?

If you answer yes to most of these questions, the Math and Science Pathway may be for you.



STEM careers include a variety of options for jobs in health services, engineering, technology and natural sciences. Many of the fastest growing occupations are concentrated in health and natural science, which are expected to increase more than twice as fast as the economy

as a whole. Engineering and computer occupations are also expected to grow rapidly to satisfy expanding needs for scientific research and applications of computer technology in business and industry.

STEM CAREER OPPORTUNITIES BY EDUCATIONAL LEVEL

Technical Training or 2-Year College

Bio/Medical Technician
Clinical Laboratory Technologist
Computer Technician
Dietetic Technician
Dental Assistant/Hygienist
EKG Technician
EEG Technician
EMT/Paramedic
Environmental Technician
Engineering Technician
Hazardous Materials Tech
HVAC Technician
Laser Technician
Licensed Practical Nurse
Machinist/Tool Technician
Medical Assistant
Medical Lab Technician
Network Systems Specialist
Nuclear Medicine Technician
Occupational Therapist Assistant
Operating Room Technician
Optician
Physical Therapist Assistant

Radiologic Technician
Radiologic Technologist
Respiratory Therapist
Robotics Technician
Surgical Technician
Traffic Engineering Technician
Ultrasound Technologist

4-Year College and Beyond

Aerospace Engineer
Anesthesiologist
Astronaut
Astronomer
Anthropologist
Automotive Engineer
Botanist
Biochemist
Biomedical Engineer
Cardiologist
Cartographer
Chemist
Chiropractor
Civil Engineer
Computer Engineer

Computer System Specialist
Crime Lab Technician
Criminologist
Dietitian
Dentist
Ecologist
Electrical Engineer
Environmental Scientist
Epidemiologist
Family Practitioner
Forensic Scientist
Geneticist
Geologist
Horticulturist
Industrial Engineer
Manufacturing Engineer
Marine Biologist
Mechanical Engineer
Medical Researcher
Meteorologist
Nurse Anesthetist
Registered Nurse
Obstetrician
Occupational Therapist
Oceanographer

Optometrist
Pediatrician
Pharmacist
Physical Therapist
Physician
Physician's Assistant
Podiatrist
Prosthetics
Psychiatrist
Psychologist
Radiologist
Safety Engineer
Sports Physician
Soil Conservationist
Sociologist
Sonographer
Statistician
Surgeon
Surveyor
Systems Analyst
Teacher
Toxicologist
Veterinarian
Zoology

Credit Transfers: This plan serves only as a general guideline. It is important to remember that the receiving school has the right to determine whether or not credits will transfer. For specific information regarding transfer of credit, students should consult an academic counselor at the institution to which he or she wishes to transfer credit. **Pathways Certificate:** Students earning 4 credits with a 2.0 average in Math/Science electives listed in this cluster are eligible to receive a Math/Science Pathway certificate at graduation.

GRADE 9

CORE COURSES

Intro to Lit and Comp, English 9 or Pre AP/IB English I	1
Integrated Science or Biology	1
Algebra I, Algebra Concepts & Applications, or Geometry (H)	1
Health 9	1/2
Physical Education I	1/4
US History or US History (H)	1

SUGGESTED ELECTIVES 2 1/4

- Art I
- Intro to Engineering Design I
- Intro to Engineering Design II
- Personal Financial Management
- World Languages

GRADE 10

CORE COURSES

Survey of Lit and Comp, English 10, or Pre AP/IB English II	1
Biology I, General Biology or Chemistry I	1
Plane Geometry, Geometry Concepts & Appl. or Algebra II (H)	1
U.S. Government or U.S. Government (H)	1
Career & College Readiness, Personal Financial Management or Career Exploration	1/2
Physical Education II	1/4

SUGGESTED ELECTIVES 2 1/4

- Child Development
- Culinary Fundamentals
- Global Foods
- Good Eating
- Introduction to Computer Programming and Technology
- Intro to Engineering Design I
- Intro to Engineering Design II
- Microsoft Office
- Financial Literacy
- Principles of Engineering
- Aerospace Engineering
- Any listed grade 9 elective not taken

GRADE 11

CORE COURSES

U. S. Lit and Comp, English 11 or AP English Language and Comp	1
Physics I, Chem I, AP Biology II, AP Chem II, IB Physics, IB Biology, IB Environmental Systems & Societies	1
Algebra II, Algebra II/Pre-calc (H) block or Pre-calc (H)	1
Social Studies Elective	1/2

SUGGESTED ELECTIVES 3 1/2

- Allied Health (2 yrs)
- Anatomy and Physiology
- Biotechnology (2 yrs)
- Environmental Management (CHS-2 yrs.)
- Environmental Science
- Exercise Science (CHS-2 yrs.)
- Information Technology (2 yrs)
- PLTW Aerospace Engineering
- PLTW Engineering (2 yrs)
- Principles of Engineering
- Any listed grade 9 or 10 elective not taken

GRADE 12

CORE COURSES

Lit Appreciation and Comp, English 12 or AP Literature and Comp	1
Social Studies Elective	1/2 or 1
AP Statistics, AP Calculus AB, BC or Multivariable Calculus, Pre-calculus	1
World History	1/2

SUGGESTED ELECTIVES 5 1/2

- AP Physics
- Biotechnology II
- Material Science
- Any listed grade 9, 10 or 11 elective not taken



FAIRMONT STEM

Technology has made us part of a global community; more connected than ever. Leaders in education, government and business recognize the importance of encouraging students to pursue a field of study in Science, Technology, Engineering, and Math (STEM). With an overall goal to stay competitive in today's global economy, there is a great need today for young people to have strong skills in STEM.

Fairmont High School is a leader in STEM education and offers a wide variety of STEM classes. Our course offerings have a superior representation of all four subject areas that span the high school to college continuum, establish a college ready and work ready culture, and provide a rigorous and diverse curriculum.

Science and Math classes inspire all levels of students from college prep to Advanced Placement (AP) and International Baccalaureate

(IB). In addition, Fairmont has Technology and Engineering classes that fit into the cross-disciplinary nature of STEM and are partnered with 2- and 4-year colleges. Below is the list of 24 STEM classes for the discerning student.

No other school in the Dayton Area offers a selection of STEM classes equal to Fairmont. At Fairmont, STEM students learn and do every day. STEM students are regularly involved in inquiry and project based learning assignments throughout the year, oftentimes participating in (and winning) state and national competition. Class work is directly connected to the real work world done by scientists, engineers, strategists, planners, innovators, and entrepreneurs throughout the world.

Specific STEM classes will be designated with a **STEM** symbol on the course description pages in the rest of the Program of Studies.

STEM Programs

Grades 9, 10, 11, 12

- Aerospace Engineering
- Digital Design Basics
- Introduction to Engineering Design I & II
- Introduction to Computer Programming and Technology
- Introduction to Broadcasting
- Intro to Film & Special Effects Production
- Intro Healthcare Concepts & Careers
- Principles of Engineering

Junior/Senior

2-year STEM Programs

- Allied Health
- Biotechnology
- Computer Information Technology
- Digital Design
- Interactive Media
- Project Lead the Way Engineering

Fairmont STEM Classes

- AP Chemistry II
- AP Biology II
- AP Physics I
- AP Physics II Lab
- IB Biology
- IB Environmental Systems and Societies (College Credit Plus)
- IB Physics
- Material Science
- Anatomy and Physiology (College Credit Plus)
- AP Calculus AB
- Calc BC (College Credit Plus)
- Multi-variable Calculus (College Credit Plus)
- AP Statistics
- Environmental Science



COURSE LISTINGS

Art

Course Title	Course #	Year	Credit
Art I	AR104	9,10,11,12	1/2
Art II	AR204	9,10,11,12	1/2
Art III Drawing and Painting	AR404	10,11,12	1/2
Art Photo I	AR302	10,11,12	1/2
Art Photo II	AR303	10,11,12	1/2
Art Photo III	AR305	11,12	1
AP Studio Art 3D Design	AR521	11,12	1
AP Studio Art Drawing	AR511	11,12	1
Crafts and Ceramics I	AR114	9,10,11,12	1/2
IB Art SL/HL, Junior	AR610	11,12	1
IB Art SL/HL, Senior	AR710	12	1
Sculpture and Ceramics II	AR224	10,11,12	1/2

Business Education

Course Title	Course #	Year	Credit
Accounting	BU300	10,11,12	1
Business and Street Law I	BU204	10,11,12	1/2
Business and Street Law II	BU304	10,11,12	1/2
Advertising	BU103	9,10,11,12	1/2
Financial Literacy	BU203	9,10,11,12	1/2
IB Business Management SL	BU620	11,12	1
IB Business Management HL	BU720	12	1
Introduction to Business	BU100	9,10,11,12	1/2
Microsoft Office	BU202	9,10,11,12	1/2
Google and Other Software Applications	BU101	9,10,11,12	1/2
Small Business Management	BU201	10,11,12	1/2
Leadership	BU302	10, 11, 12	1/2

Career Electives/Explorations

Course Title	Course #	Year	Credit
Aerospace Engineering STEM	CT291	10,11,12	1
Digital Design Basics STEM	CT240	9,10,11,12	1/2
Career Exploration Lab	CT100	10	1/2
Intro to Sports Media	CT160	9,10,11,12	1/2
Intro to Engineering Design I STEM	CT190	9,10,11,12	1/2
Intro to Engineering Design II STEM	CT290	9,10,11,12	1/2
Intro to Film & Special Effects STEM	CT260	9,10,11,12	1/2
Intro to Comp Programing & Tech STEM	CT270	9,10,11,12	1/2
Intro to Fire Science	CT205	9,10,11,12	1/2
Intro to Health Care Concepts & Careers	CT210	9,10,11,12	1/2
Intro to Automotives	CT220	9,10,11,12	1/2
Film Production Level II	CT261	9,10,11,12	1/2
Principles of Engineering STEM	CT292	10,11,12	1
Sports & Entertainment Marketing	CT280	9,10,11,12	1/2

Career Tech Programs

Course Title	Course #	Year	Credit
Allied Health I STEM	CT310	11	2
Allied Health II STEM	CT410	12	3
Automotives Technology I	CT320	11	3
Automotives Technology II	CT420	12	3
Biotechnology I STEM	SC331	11	2
Biotechnology II STEM	SC431	12	2
Business Academy I	CT300	11	2
Business Academy II	CT400	12	2
Fire Science I	CT305	11	2
Fire Science II	CT405	12	3

Information Technology I STEM	CT370	11	2
Information Technology II STEM	CT470	12	3
Construction Trades I	CT330	11	3
Construction Trades II	CT430	12	3
Digital Design I	CT340	11	2
Digital Design II	CT440	12	3
Early Childhood Education I	CT350	11	2
Early Childhood Education II	CT450	12	3
Environmental Management I (CHS)	CT800	11	3
Environmental Management II (CHS)	CT900	12	3
Exercise Science I (CHS)	CT810	11	3
Exercise Science II (CHS)	CT910	12	3
Culinary I (CHS)	CT830	11	3
Culinary II (CHS)	CT930	12	3
Interactive Media I STEM	CT360	11	3
Interactive Media II STEM	CT460	12	3
Marketing I	CT380	11	1
Marketing II	CT480	12	1
Marketing Work	CT481	12	2
PLTW Engineering I STEM	CT390	11	2
PLTW Engineering II STEM	CT490	12	2
Technical Theatre I (CHS)	CT820	11	3
Technical Theatre II (CHS)	CT920	12	3

English

Course Title	Course #	Year	Credit
Aerie Literary Magazine	CO547	9,10,11,12	1/2
AP/IB HL Yr 1 Lang & Comp	EN323	11	1
AP/IB HL Yr 2 Lit and Comp	EN423	12	1
Comedy and Satire	EN524	11,12	1/2
Communication Skills	EN305	11,12	1/2
Creative Writing	EN574	11,12	1/2
English 9	EN100	9	1
English 10	EN200	10	1
English 11	EN300	11	1
English 12	EN400	12	1
Flyer Newsmagazine	EN503	10,11,12	1
Guided Independent Study of Literature	EN554	11,12	1/2
IB Theatre I	FA610	11,12	1/2
IB Theatre II	FA620	11,12	1/2
IB Theory of Knowledge Yr 1	CO710	11	1
IB Theory of Knowledge Yr 2	CO720	12	1
Intro to Lit & Comp	EN101	9	1
Pre AP/IB English I	EN102	9	1
Journalism	EN564	9,10,11,12	1/2
Literary Appreciation and Composition	EN413	12	1
Pre AP/IB English II	EN223	10	1
Muse Machine - Fine Arts Option	FA623	11,12 1/2 or 1	
Public Speaking	EN204	9,10,11,12	1/2
Survey of Literature and Composition	EN213	10	1
Theatre I	FA101	9,10,11,12	1/2
Theatre II	FA102	10,11,12	1/2
U.S. Literature and Composition	EN313	11	1
Yearbook	CO533	10,11,12	1

Must be IB Diploma Candidate to take Theory of Knowledge

To check if a course is NCAA approved, students should contact their counselor

COURSE LISTINGS

Family & Consumer Sciences

Course Title	Course #	Year	Credit
Career and College Readiness- Online.....	CT203	10	1/2
Career and College Readiness.....	CT204	10	1/2
Child Development	HE214	9,10,11,12	1/2
Culinary Fundamentals	HE404	9,10,11,12	1/2
Global Foods	HE405	9,10,11,12	1/2
Interior Design	HE804	9,10,11,12	1/2
Lifetime Relationships.....	HE904	11,12	1/2
Personal Financial Management	HE203	9,10,11,12	1/2
Textile Design and Construction.....	HE805	9,10,11,12	1/2
Good Eating	HE301	10,11,12	1/2

World Language

Course Title	Course #	Year	Credit
AP/IB French V HL.....	WL104	12	1
AP/IB German V HL.....	WL304	12	1
AP Latin V.....	WL508	12	1
AP/IB Spanish V HL.....	WL204	12	1
Chinese I.....	WL601	9,10,11,12	1
Chinese II.....	WL602	9,10,11,12	1
Chinese II(H).....	WL603	9,10,11,12	1
Chinese III(H).....	WL604	10,11,12	1
French I.....	WL101	9,10,11,12	1
French II.....	WL102	9,10,11,12	1
French II(H)	WL106	9,10,11,12	1
French III(H)	WL103	10,11,12	1
German	WL301	9,10,11,12	1
German II.....	WL302	9,10,11,12	1
German II(H).....	WL305	9,10,11,12	1
German III(H).....	WL303	10,11,12	1
Greek and Latin Derivatives.....	WL401	10,11,12	1/2
Greek and Roman Mythology.....	WL402	10,11,12	1/2
IB Chinese IV SL.....	WL605	11,12	1
IB French IV SL.....	WL105	11,12	1
IB German IV SL.....	WL306	11,12	1
IB Latin IV SL.....	WL506	11,12	1
IB Latin V HL.....	WL509	12	1
IB Spanish IV SL.....	WL206	11,12	1
Latin I.....	WL501	9,10,11,12	1
Latin II.....	WL502	9,10,11,12	1
Latin II(H).....	WL507	9,10,11,12	1
Latin III(H).....	WL505	10,11,12	1
Spanish I.....	WL201	9,10,11,12	1
Spanish II.....	WL202	9,10,11,12	1
Spanish II(H).....	WL205	9,10,11,12	1
Spanish III(H).....	WL203	10,11,12	1

Health & Physical Education

Course Title	Course #	Year	Credit
CPR/First Aid	HL301	10,11,12	1/2
Health 9.....	HL101	9	1/4
Physical Education I	PE101	9	1/4
Physical Education II	PE201	10,11,12	1/4
Weight Training - Sem 1	PE301	10,11,12	1/4
Weight Training - Sem 2	PE302	9,10,11,12	1/4

Mathematics

Course Title	Course #	Year	Credit
Algebra Concepts and Applications	MA101	9	1
Geometry (H).....	MA233	9	1
Geometry Concepts and Applications	MA203	10	1
Algebra I.....	MA121	9,10	1
Algebra II/Pre-calculus (H) Block	MA001	10,11,12	2
Plane Geometry	MA221	10,11,12	1
Algebra IIA	MA311	11	1
Algebra II (H).....	MA331	11,12	1
AP Calculus AB STEM.....	MA513	11,12	1
Algebra II.....	MA321	11,12	1
AP Statistics STEM.....	MA515	11,12	1
IB Math SL STEM.....	MA620	11,12	1
IB Math Studies Sem 1 STEM.....	MA405	11,12	1/2
IB Math Studies Sem 2 STEM.....	MA406	11,12	1/2
Pre-calculus	MA313	11,12	1
Pre-calculus (H)	MA323	11,12	1
Algebra III A	MA411	11	1
Allied Health Math	MA414	12	1
Calculus I	CCPW17	11,12	1
Calculus II	CCPW18	11,12	1
Applied Math Career Tech.....	MA084	12	1
Business Math	MA410	12	1
Calculus III.....	CCPW15	12	1
Math for technologist.....	MA413	12	1

Music

Course Title	Course #	Year	Credit
Band.....	BA100	9,10,11,12	1
Choir.....	CH100	9,10,11,12	1
Orchestra.....	OR100	9,10,11,12	1
IB Music SL Yr 1	MU610	11	1
IB Music SL Yr 2	MU710	12	1
Music Theory.....	MU401	10,11,12	1

Science

Course Title	Course #	Year	Credit
Anatomy & Physiology STEM	SC411	11,12	1
AP Biology II STEM	SC502	11,12	1
AP Chemistry II STEM	SC512	11,12	1
AP Physics II Lab STEM	SC532	12	1
AP Physics II Lecture STEM	SC522	12	1
Biology I	SC201	9,10	1
Biotechnology Tech Prep I.....	SC331	11	2
Biotechnology Tech Prep II.....	SC431	12	2
Catastrophic Events in Science (SEMESTER 1)	SC310	11,12	1/2
Catastrophic Events in Science (SEMESTER 2)	SC311	11,12	1/2
Chemistry I	SC301	10,11,12	1
Environmental Science (SEMESTER 1) STEM	SC321	11,12	1/2
Environmental Science (SEMESTER 2) STEM	SC322	11,12	1/2
General Biology	SC200	10	1
General Chemistry	SC300	11,12	1
IB Biology HL Yr 1 STEM	SC710	11	1
IB Biology HL Yr 2 STEM.....	SC720	12	1
IB Environ. Sys. & Soc. SL STEM.....	SC610	11,12	1
IB Physics SL STEM	SC620	11,12	1
Integrated Science	SC101	9	1
Material Science/Tech. (SEMESTER 1) STEM.....	SC303	11,12	1/2
Material Science/Tech. (SEMESTER 2) STEM.....	SC304	11,12	1/2
Physics I.....	SC401	11,12	1

COURSE LISTINGS

Social Studies

Course Title	Course #	Year	Credit
AP U.S. Government and Politics	SS514	11,12	1
AP U.S. History	SS504	11,12	1
Comparative World Religions	SS304	11,12	1/2
Contemporary Global Issues	SS334	11,12	1/2
Economics	SS324	10,11,12	1/2
IB History HL Yr 1	SS620	11,12	1
IB History HL Yr 2	SS630	12	1
IB Psychology HL Yr 1	SS720	11,12	1
IB Psychology HL Yr 2	SS730	12	1
IB Psychology SL	SS710	11,12	1
Psychology	SS314	11,12	1/2
IB Global Politics SL	SS810	11,12	1

Sociology	SS214	10,11,12	1/2
Sport and Society	SS404	11,12	1/2
U.S. Government	SS903	12	1/2
US Government (H)	SS913	10	1
U.S. Government Online	SS905	10	1
U.S. History	SS102	9	1
U.S. History (H)	SS112	9	1
Urban Studies	SS414	11,12	1/2
World Geography	SS311	10,11,12	1/2
World History: Ancient Civilizations	SS401	10,11,12	1/2
World History: Modern Civilizations	SS402	10,11,12	1/2
World History Through Film	SS403	11,12	1/2

To check if a course is NCAA approved, students should contact their counselor



FOUR YEAR PLANNER CLASS OF 2018 & BEYOND

Use this chart to plan your classes for your four years at Fairmont High School. **Students need 21.5 credits in order to graduate.**

NAME _____ CLASS OF _____ DATE _____

SUBJECT***	GRADE 9	GRADE 10	GRADE 11	GRADE 12
ENGLISH a total of 4 credits required	English 9 or Intro to Lit or Intro to Lit (H)	Sem I	Sem I	Sem I
		Sem II	Sem II	Sem II
		Credit total	Credit total	Credit total
MATHEMATICS a total of 4 credits required	Algebra I or Geometry (H)	Sem I	Sem I	Sem I
		Sem II	Sem II	Sem II
		Credit total	Credit total	Credit total
SCIENCE a total of 3 credits required	Integrated Science or Biology I	Sem I	Sem I	Sem I
		Sem II	Sem II	Sem II
		Credit total	Credit total	Credit total
SOCIAL STUDIES* a total of 3 credits required	US History or US History (H)	US Government or US Government (H)	Sem I	Sem I
			Sem II	Sem II
			Credit total	Credit total
HEALTH/PE** a total of 1 credit required	Health Sem I PE I	PE II Sem I	Sem I	Sem I
			Sem II	Sem II
			Credit total	Credit total
BUSINESS/TECHNOLOGY, FINE ARTS OR WORLD LANGUAGE *** a total of 1 credit required			Sem I	Sem I
			Sem II	Sem II
			Credit total	Credit total
ELECTIVES a total of 5.5 credits required Choose from Business/Tech, World Language, Family & Consumer Science and Career Tech		Planning for College/Work or Career Explorations Sem I	Sem I	Sem I
			Sem II	Sem II
			Credit total	Credit total

* CLASS OF 2021 AND BEYOND REQUIRED TO EARN 1/2 CREDIT OF WORLD HISTORY AND CIVILIZATIONS.

** IT IS RECOMMENDED THAT ALL 9TH GRADE STUDENTS TAKE HEALTH & PHYSICAL EDUCATION I.

*** ART & MUSIC CLASSES SATISFY THE FINE ARTS REQUIREMENT. FINE ARTS IS REQUIRED EXCEPT FOR CERTAIN CAREER TECHNICAL STUDENTS.

KETTERING FAIRMONT
HIGH SCHOOL

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