



WEST MICHIGAN
AVIATION ACADEMY

Course Selection Handbook
2021-2022

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GRADUATING FROM WEST MICHIGAN AVIATION ACADEMY

1. Graduation from West Michigan Aviation Academy implies that students have satisfactorily completed an approved course of study and that they have acceptably passed any examinations and/or other requirements established by the school.
2. It shall be the responsibility of the CEO and/or his or her designee to maintain a record system that will provide the information necessary to assure that the above policy is enforced.
3. Only approved courses will be accepted for graduation. Coursework taken anywhere but at West Michigan Aviation Academy must be approved in advance to prevent loss of credit through misunderstanding.
4. Prior high school credit earned from accredited schools is transferable, with these exceptions: doctrinal religion courses; driver's education; service activities such as teacher, office, or library assistant.
5. Students enrolling in summer school for credit must have school counselor approval in advance of enrollment in the summer school program.
6. A student may repeat a course that s/he has taken and passed, but it will not be for credit. Both grades will be recorded, but only the higher grade will be used in computing the GPA.
7. KCTC coursework will transfer in to WMAA as elective credit only.
8. Kent ISD programs (KCTC, KTC, Launch U) must meet the same grade requirements (70% or higher) as WMAA courses in order to earn high school credit.
9. Credit for high school courses taken in middle school can articulate as credit to West Michigan Aviation only if credit is documented on an official high school transcript.
10. Students, through approval of their parents, teacher, and counselor, may request to take a course on a credit/no credit basis rather than for a letter grade, but it is limited to one course per semester. It is wise to check with a counselor on the merits of doing so, especially if college admission is a factor.
11. Twenty-six credits are needed to receive a diploma from West Michigan Aviation Academy. Students lacking not more than one credit at graduation time will be permitted to participate in commencement, provided they are enrolled in and have paid for summer school. The diploma will be withheld until all graduation requirements have been fulfilled.
12. For the small percentage of students that may be unable to meet certain Michigan Merit Curriculum requirements or wish to enrich the Michigan Merit requirements, a Personal Curriculum can be developed. Please see a school counselor regarding this possibility.
13. The Academy's deans and counselors will provide information and assistance to all students to enable them to develop a schedule of courses that will meet requirements for colleges, vocational schools, or any post-high school program selected by the student and her/his parents.
14. The following policies shall govern the graduation requirements of transfer students:
 - A. Any student who attends West Michigan Aviation Academy during the entire senior year will be allowed to graduate from West Michigan Aviation Academy if s/he fulfills the graduation requirements of WMAA.
 - B. Any student who attends West Michigan Aviation Academy for only the last semester of the senior year will be allowed to graduate from West Michigan Aviation Academy if s/he fulfills the graduation requirements of this school, and the school s/he has transferred from refuses to grant a diploma.
 - C. Any student who has attended West Michigan Aviation Academy through the first semester of the senior year and then transfers to another school will be allowed to receive a diploma from West Michigan Aviation Academy and participate in the graduation exercises, if s/he fulfills all of the Academy's graduation requirements. This does not apply to a student who is expelled from West Michigan Aviation Academy

WMAA GRADUATION REQUIREMENTS

DEPARTMENT	CREDITS	SPECIFIC REQUIREMENTS
English	4.0	
Mathematics	4.0	Through Algebra II content standards All students must have a math experience senior year
Science	3.0	1.0 credit in physical science (Physics of the Universe) 1.0 credit in chemical science (Chemistry of the Earth) 1.0 credit in life science (Biology of the Earth)
Social Studies	3.0	1.0 credit world history 1.0 credit U.S. history .5 credit government .5 credit in economics
World Language	2.0	Two years of the same world language
Physical Education	0.5	
Health	0.5	
Visual, Performing or Applied Arts	1.0	Met through Intro to Engineering & Robotics, Automation, and Manufacturing
Electives	8.0	Aviation, engineering, or elective courses
Community Service		100 Hours Required (pro-rated for transfer students)
Michigan Merit Exam		Good faith effort on required State of Michigan assessments
TOTAL	26.0	Minimum Credits Required

CREDIT ALLOCATION

For traditional courses at West Michigan Aviation Academy, success in each semester long course provides .5 credit. As such, students at West Michigan Aviation Academy, enrolled in seven classes per semester, have the possibility of earning seven credits per year. A student is considered to have completed a credit if the student demonstrates that he or she has successfully met the content expectations for the credit area; students may earn credit if they successfully demonstrate mastery of the subject area content standards

In addition to earning credit through traditional courses, students can also earn credit through:

1. Dual enrollment (see page 7)
2. Testing Out (see page 8)
3. Demonstrating proficiency in a more advanced course for which standards are vertically aligned to content standards in a lower level course.

GRADE LEVEL PLACEMENT

To encourage students to make continuing progress toward graduation, credit requirements have been established for grade level placement. The number of credits earned will determine the grade level placement and the grade classification for each student:

For a student to be in 10 th Grade	---	Student must have earned a minimum of	5 credits
For a student to be in 11 th Grade	---	Student must have earned a minimum of	11 credits
For a student to be in 12 th Grade	---	Student must have earned a minimum of	18 credits

Grade level placements are determined prior to the start of each new school year; students may not change grade levels during the school year. Students who fail to advance to the next grade level will be affected in terms of:

- Locker assignment
- Yearbook photo designation
- Grade level meetings or assemblies
- Class offices and Student Council

Any student who withdraws from school for any period of time will be enrolled at the appropriate grade level based on earned credits at the time of re-enrollment. All students new to WMAA will be assigned to a grade level based on credits earned and accepted by WMAA. Final grade placement will be determined by the school's Dean of Academic & Student Services.

ACADEMIC HONORS

Student honor roll will be identified twice per year, once after first semester grades and again for the spring honors program.

After first semester, students will be identified using semester 1 weighted GPA as follows:

Cum Laude	3.5000 to 3.7999
Magna Cum Laude	3.8000 to 3.99999
Summa Cum Laude	4.0000+

For the spring honors programs, academic honors will be defined using cumulative weighted GPA as:

Cum Laude	3.5000 to 3.7999
Magna Cum Laude	3.8000 to 3.99999
Summa Cum Laude	4.0000+

* Grades are provided on a 4.0 scale with weighted grades on a 5.0 scale for all honors and Advanced Placement courses. Cumulative weighted grade point averages are provided on all official transcripts. WMAA does not provide specific class ranking; rather, WMAA uses a quintile ranking system.

SELECTING CLASSES

The West Michigan Aviation Academy Board of Directors has established the following guidelines regarding a student's course load:

1. All students, in all grades, are to be scheduled in seven classes per semester.
2. A college preparatory curriculum consists of a MINIMUM OF FOUR ACADEMIC courses (English, mathematics, social studies, science, world language) each of the four high school years. The more selective the college, the more rigorous the academic load should be in both course difficulty and in number of classes taken.
3. Honors and AP Selection: Each department has developed criteria to help identify who will likely be successful in both honors and AP courses. Using data from each department, students will be placed in and/or encouraged to select the appropriate course during the course registration and scheduling periods.
4. After first semester, content teachers and the department chair will identify students who are not meeting and/or exceeding course expectations. Using teacher input and course performance data, students may be moved to a different level course with equivalent content. For course-specific policies regarding midyear moves, please review individual course syllabi.

STEM ENDORSEMENT

The STEM endorsement exists to inspire and recognize students who have strong interest and performance in Science, Technology, Engineering, and Mathematics. The endorsement will serve to set students apart on college and career applications as well as during interviews and scholarship competitions. Students will be recognized for successful completion of the STEM curriculum at the senior honors program as well as on their diploma.

Students must earn...

1. an unweighted letter grade of B or better in all qualifying STEM endorsement credits.
2. 4 credits in mathematics through trigonometry/pre-calculus
3. 4 credits in science
4. 4 additional credits in STEM elective courses
5. a minimum of 5 honors or AP credits within their STEM credits

Students interested in learning more or applying for the STEM endorsement should see their school counselor.

STATE MANDATED DUAL ENROLLMENT PROGRAM

The Postsecondary Enrollment Options Act, commonly referred to as dual enrollment, provides eligibility guidelines and standards, including:

1. Students in grades 9 through 12 may take up to ten postsecondary courses during their high school career. For a student that first dual enrolls in:
 - a. 9th grade: not more than two courses per year in 9th, 10th, and 11th grade, and not more than four courses in grade 12
 - b. 10th grade: not more than two courses in 10th grade, and not more than four courses in 11th and 12th grade
 - c. 11th or 12th grade: not more than six courses per year
2. Public Act 594 of 2004, one of the pieces of legislation that created the MME, requires the Michigan Department of Education to set the passing scores on the readiness exams that are used to determine eligibility for dual enrollment. These readiness exams are the MME, the PSAT, the SAT and the ACT. Updated score requirements can be provided by the school counselor or the Michigan Department of Education website.
3. Students must be enrolled in both the eligible school (public or private) and eligible postsecondary institution during the local school's regular academic year and must be enrolled in at least one high school class.
4. The college courses cannot be a hobby, craft, or recreation course, or in the subject areas of physical education, theology, divinity, or religious education.
5. School districts are required to pay an amount equal to the prorated percentage of the statewide pupil-weighted average foundation allowance, based on the proportion of the school year the eligible student attends the eligible postsecondary institution.
*Students/families should plan to pay for any tuition, fees, or books not covered by the allocated foundation allowance.

West Michigan Aviation Academy encourages and supports dual enrollment for students who show readiness for college level coursework. Students and parents interested in pursuing dual enrollment should be aware that:

1. A signed *Dual Enrollment Agreement* must be on file for each semester of dual enrollment
2. Students should meet with their counselor to start the dual enrollment application process.
 - a. Students should begin the application process by March 1 for fall semester
 - b. Students should begin the application process by October 1 for winter/spring semester
 - c. Students and parents are responsible for meeting all dual enrollment application deadlines through the college or university.
3. The portion of a student's WMAA class schedule, as well as high school credit allocation, will be based on full time college credit equivalency (12 credit hours)

TESTING OUT POLICY

West Michigan Aviation Academy, in compliance with the School Code of Michigan, will allow students to “test out” of any course or credit area. These tests will be a sound demonstration that a student meets or exceeds the content expectations associated with the credit area. Because some end-of-year tests do not serve as comprehensive measures of content and skill “mastery” as expressed in the Michigan School Code, students may be required to demonstrate a reasonable degree of mastery either through a written examination, written papers, projects, portfolios, or other comparable forms.

The following statements will apply to the testing out provision:

1. Course advancement, credit and/or waiver will only be granted for a C+ (77%) or better. If there is no final exam, credit will be earned by exhibiting mastery through the basic assessment used in the course and may consist of a portfolio, performance paper, project, and/or presentation.
2. When testing out of high school courses, this testing out provision will count toward high school credits towards the graduation requirements.
3. Successful completion of the testing out provision will also count toward fulfillment of a requirement for a subject area or a course sequence.
4. Credits earned through testing out will not be included in a computation of grade point average.
5. Students who pass a higher class that is vertically aligned in its progression of standards, the student is eligible to receive credit in the lower level course.

TIMELINE FOR TESTING OUT OPTION

February 2021	Test out information available during course registration.
April 30, 2021	Deadline for returning students to sign up for test out.
June 14-17, 2021	Study materials available from Student Services.
August 9, 2021	Test out assessments for all returning students administered at 12:30pm.
August 9, 2021	Test out assessments for all incoming students administered at 12:30pm
August 16-20, 2021	Notification of test out results will be reflected in updated student schedules.

ONLINE COURSES

West Michigan Aviation Academy strongly believes that face-to-face classroom instruction at the high school building is the best learning environment for students. Enrollment in a face-to-face course offered at the high school will be the priority option for all students. However, we recognize that there are situations when a student's best learning option is to enroll in an online/virtual course.

To be successful in an online class, the student must:

- be a self-starter with a strong sense of direction and the ability to set goals.
- work independently, stay on task, and maintain a daily schedule of logging on and keeping up with readings, course assignments, homework and other expectations.
- possess problem-solving skills, organization, and self-advocacy skills

Students and parents must also be aware that:

- Students wishing to enroll in a virtual course must request virtual learning during the course registration process.
- Students must meet with his/her counselor during the registration process to determine if online learning is the best learning option and, if so, select from an approved list of courses.
- Students and parents will be required to sign the *Online Learning Agreement* prior to the student gaining access to the online course.
- The offsite, online instructor is responsible for unlocking all tests, quizzes, and assessments. Online teachers are given up to 48 hours after a student request to unlock the assessment.
- Each course is assigned a Michigan certified teacher through the online platform who monitors online course progress, communicates with the student, grades assignments and determines the final grade for the course.
- Students and parents should refer to the online platform for accurate information related to a student's progress in the online course. Students grades are calculated based on the quality of the work completed in combination with the student's progress within course.
- Use of online learning options are limited for when:
 - The student's daily schedule prevents him/her from enrolling in a specific academic or elective course offered by WMAA,
 - The student needs to fulfill a graduation requirement not offered at WMAA,
 - The student needs to enroll in a course for credit recovery and it is not available during the school day, i.e. to make up credit for a course s/he previously failed
 - The Educational Development Plan (EDP) necessitates a course not offered at WMAA
 - Parent requests online learning through 21F legislation
- WMAA uses two platforms for online learning coursework:
 - APEX Learning: Utilized for credit recovery of core content and remediation
 - Michigan Virtual: Utilized for Advanced Placement coursework and world languages other than Spanish.

WEST MICHIGAN AVIATION ACADEMY COURSE DESCRIPTIONS

AVIATION DEPARTMENT

Course Title	Credit	Grade Offered
Introduction to Aviation	0.5	9
Aviation History and Literature (AHL)	0.5	9
Introduction to Aviation Weather & Air Traffic Control	0.25	10
Introduction to Aviation Flight Planning	0.25	10
Introduction to Aviation Maintenance	0.25	10
Introduction to Remote Control Aircraft	0.25	10
Private Pilot Ground School	1.0	11
Unmanned Aerial Systems	1.0	11, 12
Project Build a Plane 1	2.0	11
Project Build a Plane 2	2.0	12
Private Pilot Flight Lab	3.0	12

AV12X: INTRODUCTION TO AVIATION

Prerequisite: None
Credit: 0.5
Grade Level: 9 *Required for all 9th grade students

This *Introduction to Aviation* course is designed to expose students to the exciting field of aviation and provide a solid foundation of knowledge, skill, and strategies that will be refined, applied, and extended in future aviation courses. In *Introduction to Aviation*, students will explore the basics of aeronautics and aerodynamics, fundamentals of flight, rockets and space, navigation, basic weather principles and the exploration of the aerospace community. West Michigan Aviation Academy freshman will use this course to begin to define and expand their individual interest in one of four core areas of study: Aircraft Maintenance Technology, Engineering, Aviation Administration, or Aviation Flight Science. The course will also be used to ignite and kindle a life-long passion for aviation.

AV13X: AVIATION HISTORY AND LITERATURE (AHL)

Prerequisite: None
Credit: 0.5
Grade Level: 9 * Required for all 9th grade students

This class, required for all incoming freshmen, is designed to expose students to the rich history of aviation and the literature and art that has been inspired by human flight. While we explore this fascinating field across multiple eras, we will work on building the necessary reading, writing, and presentation skills needed to succeed in the field of aviation. This course will examine the early discovery and invention of flying machines, significant aviation-related milestones, the impact of aviation in warfare, and aviation-related crises. Students will be expected to describe the various people and events key to developments in the field of aviation. AHL students will read several non-fiction and fiction aviation-related selections to experience a diverse display of the interest and ingenuity surrounding the field of aviation. At the end of the course, students will be asked to complete a Creative Response Project to demonstrate new learning.

AV15X: INTRODUCTION TO AVIATION WEATHER & AIR TRAFFIC CONTROL

Prerequisite: None

Credit: 0.25

Grade Level: 10 *Suggested for sophomores pursuing the flight program

This class is designed to give students an overview of both aviation weather and air traffic control concepts. Aviation weather concepts will be specifically analyzed from the pilot perspective introducing the student to multiple aviation weather flight planning resources. Knowledge of how weather and atmospheric processes affect the air traffic control system will be explored. This class will highlight many Federal Aviation Regulations (FARs) and investigate the complexities of the National Airspace System (NAS). Students can expect the integrated use of the internet web base ATC Live interface to experience actual first-hand real-time communication scenarios. This class will also conduct several case studies investigating the importance of highly skilled and trained air traffic controllers. Finally, students will gain an understanding of the requirements to become an FAA Certified Air Traffic Controller.

AV23X: INTRODUCTION TO AVIATION FLIGHT PLANNING

Prerequisite: None

Credit: 0.25

Grade Level: 10 *Required for sophomores pursuing the flight program

This *Introduction to Aviation Flight Planning* course is designed to expose students to the necessary math-related skills required for aviation flight science. The class will make full use of aviation maps, charts, graphs, and flight planning tools. Basic algebra concepts will be utilized to complete flight-planning requirements associated with time, distance, speed, and fuel calculations. Additionally, the component of wind will be introduced as it relates to wind triangle calculations for flight planning and flight execution for calculating crosswind-landing requirements. Students will also be required to utilize the appropriate aviation-related charts and graphs to complete altitude conversions, aircraft weight and balance calculations, as well as takeoff and landing calculations. Finally, simple aviation map interpretation and airspace structure should be expected.

AV21X: INTRODUCTION TO AVIATION MAINTENANCE

Prerequisite: None
Credit: 0.25
Grade: 10

The *Introduction to Aviation Maintenance* course will introduce interested sophomore students to various aspects of aviation maintenance technology. The course will include field trips to such places as Signature Flight Support, Kent Aviation Center, and the School of Missionary Aviation and Technology at the Ionia Airport. Establishing an environment of aviation safety is paramount for this aviation elective. Students will be held to strict procedures to ensure safety at all times – SAFETY FIRST! Topics will include the basics of aircraft maintenance that include: utilizing hand and measuring tools, electrical components, reciprocating engine theory, aircraft hardware, aircraft inspections, preventive maintenance, metal structure repair, wood structure repair, and composite repair.

AV29X: INTRODUCTION TO REMOTE CONTROL (RC) AIRCRAFT

Prerequisite: None
Credit: 0.25
Grade Level: 10

This *Introduction to Remote Control Aircraft* course is designed to expose students to the basic flying and construction requirements to become proficient at both flying and building R/C aircraft. The use of Real Flight R/C Simulation will be a centerpiece of this class to provide students with the foundational skills necessary to become safe and confident R/C pilots. As students strive to become proficient at flying, they can expect a hands-on environment in which they will work within small groups to construct small-scale indoor electric R/C aircraft. Finally, students will learn about the basic electronics required for operation to include the programming of transmitters and receivers for proper servo functionality.

AV320, AV325: PRIVATE PILOT GROUND SCHOOL

Prerequisite: Algebra I (B or higher), Introduction to Aviation Flight Planning
Credit: 1.0
Grade: 11

The *Private Pilot Ground School (PPGS)* course is designed to prepare students for successful completion of the Federal Aviation Administration (FAA) private pilot written examination and prepare them for Phase I of the Flight Science Course. In PPGS, students will examine aviation topics such as: principles of flight, aircraft systems, airplane performance, flight operations, radio communication, FAA regulations, human factors associated with aviation, aeronautical decision making, aviation weather, navigational charts and calculations, and cross country flying. Additionally, the integration of desktop flight simulation will allow hands on opportunities to apply classroom concepts and provide exposure

to basic flight maneuvers. Upon successful completion of this course, students will receive a Certified Flight Instructor (CFI) logbook endorsement to take the FAA Private Pilot Written Examination. To receive a CFI endorsement, a course final examination grade of 80% or higher is required as well as passing each semester with a minimum grade of a C.

AV390, AV395: UNMANNED AERIAL SYSTEMS (UAS)

Prerequisite: Introduction to Remote Control (RC) Aircraft
Credit: 1.0
Grade: 11, 12

The Unmanned Aerial Systems course is designed to provide all the information a student will need to take the FAA Part 107 test to earn their Commercial FAA Unmanned Pilot's License. This is a rapidly growing field that is changing the nature of the aviation industry. Students will engage hands-on in the flight and maintenance of various unmanned aircraft. Guest speakers will highlight real world applications of what is being learned in the classroom. Students who successfully complete this course will be able to immediately begin a career as a commercial unmanned pilot.

AV370, AV375: PROJECT BUILD A PLANE 1

Prerequisite: None
Credit: 2.0
Grade: 11

The *Project Build a Plane* course is designed to engage students in the first-hand experience of building an aircraft certified for flight while highlighting future aviation-STEM education career opportunities. This multi-year project will integrate many facets of the aviation industry with a heavy focus on aviation airframe, propulsion, avionics, and strict adherence to safety procedures and expectations. Students can expect to develop an understanding of reading blueprints; technical publication reading; planning sequence for construction and assembly; sheet-metal and/or composite construction related to aircraft design requirements; and specific skills such as riveting, precision measurements, and strict tolerance adherence necessary for safety of flight expectations. An in-depth exposure to professional aviation workspace expectations which include: High Bay safety procedures and precautions; industry standard tool control management program; and necessary team cooperation skills development and individual accountability.

AV400, AV405: PROJECT BUILD A PLANE 2

Prerequisite: None
Credit: 2.0
Grade: 12

The *Project Build a Plane* course is designed to engage students in the first-hand experience of building an aircraft certified for flight while highlighting future aviation-STEM education career opportunities. This multi-year project will integrate many facets of the aviation industry with a heavy focus on aviation airframe, propulsion, avionics, and strict adherence to safety procedures and expectations. Students can expect to develop an understanding of reading blueprints; technical publication reading; planning sequence for construction and assembly; sheet-metal and/or composite construction related to aircraft design requirements; and specific skills such as riveting, precision measurements, and strict tolerance adherence necessary for safety of flight expectations. An in-depth exposure to professional aviation workspace expectations which include: High Bay safety procedures and precautions; industry standard tool control management program; and necessary team cooperation skills development and individual accountability.

AV49X, AV49X5: PRIVATE PILOT FLIGHT LAB

Prerequisites: Private Pilot Ground School
Passed FAA Private Pilot Written Exam & FAA 3rd Class Medical Examination
Administrator Recommendation, Signed Parent Consent

Credit: 3.0
Grade Level: 12

The *Private Pilot Flight School (PPFS)* course is considered the capstone course for those students who have the desire and motivation to become FAA Certified Private Pilots. Students in this class can expect to utilize the WMAA Redbird simulator, advanced aviation simulation lab, and our Cessna 172s to complete the required FAA flight training requirements to become a private pilot. Additionally, this class will make full use of the Jeppesen Flight Training Syllabus and follow strict adherence to FAA performance standards to ensure student safety and success. The culmination of this class will be successful completion of the Private Pilot Practical Examination administered by an FAA Designated Flight Examiner.

ENGINEERING DEPARTMENT

Course Title	Credit	Grade Offered
Introduction to Engineering Principles	0.5	10
Robotics, Automation & Manufacturing	0.5	10
Intro to VEX Robotics	0.25	10
Intro to Computer Science	0.25	10
Intro to Aerospace Design	0.25	10
Intro to Drafting	0.25	10
Intro to BioMed	0.25	10
Aerospace Engineering	1.0	11
Principles of Biomedical Science	1.0	11
Introduction to Cybersecurity	0.5	11, 12
Computer-Aided Design and Drafting	0.5	11, 12
AP Computer Science Principles	1.0	11, 12
AP Computer Science A	1.0	12
Engineering Design and Development	0.5	12
Autonomous Vehicle Systems	0.5	12
Biomedical Innovations	1.0	12

EG23X: INTRODUCTION TO ENGINEERING PRINCIPLES

Prerequisite: None

Credit: 0.5

Grade Level: 10 *Required for all 10th grade students

This introductory lab and project-based course integrates science, technology, graphic arts & design, engineering, and mathematics (STEAM) concepts and exposes students to fundamental theories of engineering with an aviation focus. Students work in collaborative teams while developing skills in the areas of career exploration, electricity and electronics, drive mechanisms, mechanical design, and basic circuit board construction. Teamwork and time management are also key components of this course. This course will count towards the Michigan Merit Curriculum Visual, Performing, & Applied Arts requirement.

EG29X: ROBOTICS, AUTOMATION & MANUFACTURING (RAM)

Prerequisite: None
Credit: 0.5
Grade Level: 10 *Required for all 10th grade students

This introductory lab and project-based course integrates science, technology, engineering, graphic arts & design, and mathematics (STEAM) concepts and exposes students to fundamental theories of programming as well as introductions to 3D Printers, CNC Routers, Laser Cutter, and Robotics. Teamwork and time management are also key components of this course. Additionally, students will explore applied mathematical concepts needed for the foundation of engineering concepts. This course will count towards the Michigan Merit Curriculum Visual, Performing, & Applied Arts requirement.

EG20X: INTRO TO VEX ROBOTICS

Prerequisite: None
Credit: 0.25
Grade: 10

This course will introduce sophomores to VEX Robotics and the basic fundamentals of robotics design, construction, and programming. This class is designed to develop crucial problem-solving skills as well as critical & computational thinking. VEX is a metal-based robotics platform with bolt-together pieces that are machinable to create any mechanism. Students can begin at any level and move to more advanced engineering concepts as they explore and challenge their robotic design imagination. This class will be differentiated to challenge both new and experienced VEX Robotics students.

EG21X: INTRO TO COMPUTER SCIENCE

Prerequisite: None
Credit: 0.25
Grade: 10

In this project-based class students will develop some basic coding principles while creating video games. Students will have the chance to create their version of Pong and Mario as well as create something completely of their own design! The class is a wonderful preview of what coding can do and is the perfect lead up for AP Computer Science Principles and AP Computer Science A.

EG26X: INTRO TO AEROSPACE DESIGN

Prerequisite: None
Credit: 0.25
Grade: 10

This course serves as an introduction to the field of Aerospace Engineering. It should be looked at as an opportunity to try the subject before signing up for the full year-long Aerospace Engineering course. This course is project-based and asks students to apply physics concepts to things they build. Significant time is spent creating paper “skimmers”, foam plate gliders, balsa gliders, and other objects influenced by aerodynamics. The class will focus on looking at how those objects manipulate the air around them to create the forces necessary to perform as intended.

EG27X: INTRO TO DRAFTING

Prerequisite: None
Credit: 0.25
Grade: 10

This course will allow sophomore students to gain a brief preview of and some experience with paper and pencil drafting. Students will learn about different types of views, how to draw to scale, and how to represent their ideas in an organized and unambiguous manner on paper. This course serves as an excellent foundation to transition to graphic arts & design in the digital age of computer aided design.

EG28X: INTRO TO BIOMED

Prerequisite: None
Credit: 0.5
Grade Level: 10

Students play the role of real-life medical detectives as they collect and analyze medical data to diagnose disease. They solve medical mysteries through hands-on projects and labs, measure and interpret vital signs, dissect a sheep brain, investigate disease outbreaks, and explore how a breakdown within the human body can lead to dysfunction.

EG320, EG325: AEROSPACE ENGINEERING

Prerequisite: None
Credit: 1.0
Grade: 11, 12

Aerospace Engineering explores the evolution of flight, navigation and control, flight fundamentals, aerospace materials, propulsion, space travel, and orbital mechanics. In addition, this course presents alternative applications for aerospace engineering concepts. Students analyze, design, and build aerospace systems. Through hands-on projects, students use industry-standard 3D modeling software to help them design solutions to solve proposed problems, document their work using an engineer's notebook, and communicate solutions to peers and members of the professional community.

This capstone course focuses on the systems and processes necessary to design, build, and program fully autonomous vehicles. The end goal of this course is for students to be successful in building and programming fully autonomous drones capable of performing complex tasks without direct human control.

EG340, EG345: PRINCIPLES OF BIOMEDICAL SCIENCE

Prerequisite: None
Credit: 1.0
Grade: 11

In Principles of Biomedical Science (PBS), the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

EG32X: INTRODUCTION TO CYBERSECURITY

Prerequisite: Intro to Computer Science
Credit: 0.5
Grade: 11, 12

This class will introduce students to varying aspects of cybersecurity. Students will learn how vulnerable they are while surfing the internet and what can be done to protect their information. The class explores data transmission and capture, encryption, laws related to cybersecurity, multiple electronic attacks as well as physical attacks, and digital citizenship.

EG35X: COMPUTER AIDED DESIGN AND DRAFTING (CADD)

Prerequisite: None
Credit: 0.5
Grade: 11, 12

This course provides an introduction to computer-aided design and drafting (CADD). Students will be exposed to the basics of mechanical drawing and drafting, then transition to CADD using the SolidWorks software. The course will culminate with a computer-designed product that will be produced with a 3D printer (modeling). Learning 3D design is an interactive process; students will spend the majority of their class time exploring SolidWorks and expanding their design abilities.

EG370, EG375: ADVANCED PLACEMENT (AP) COMPUTER SCIENCE PRINCIPLES

Prerequisite: Algebra I
Credit: 1.0
Grade: 11, 12

This course introduces the fundamental concepts of computer science and challenges them to explore how computing and technology impact the world. With a unique focus on creative problem solving and real-world applications, this course prepares students for college and career. Students will be exposed to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cyber-security concerns, and the impact of computers. The class will give students the opportunity to use technology to address real-world problems and build relevant solutions.

EG470, EG475; ADVANCED PLACEMENT (AP) COMPUTER SCIENCE A

Prerequisite: Introduction to Computer Science; completion of or enrollment in Algebra 2
Credit: 1.0
Grade: 12

This course prepares students to take the College Board's AP Computer Science A exam. This challenging class is for junior- and senior-level students who are interested in an in-depth course in computer science theory and practice. Students will learn to program in the Java language, with an emphasis on problem solving, computer science theory, applications, algorithms, programming style, and programming design.

EG420: ENGINEERING DESIGN AND DEVELOPMENT (EDD)

Prerequisite: None
Credit: .5
Grade: 12

Implementing the engineering design process, this course allows students work in teams to design and develop an original solution to an open-ended technical problem. After carefully defining the problem, teams spend the duration of the course designing, building, and testing their solution(s) under the guidance of industry professionals. At the conclusion of the course, students are expected to present and defend their original solution to a panel of industry professionals.

EG415: AUTONOMOUS VEHICLES

Prerequisite: Intro to Computer Science or AP Computer Science
Credit: .5
Grade: 12

This capstone course focuses on the systems and processes necessary to design, build, and program fully autonomous vehicles. The goal is for students to be successful in building and programming fully autonomous drones capable of performing complex tasks without direct human control.

EG480, EG485: BIOMEDICAL INNOVATION

Prerequisite: Principles of Biomedical Science
Credit: 1.0
Grade: 12

The final course in the Biomedical Science sequence, students build on knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They will have the opportunity to work on an independent project with a mentor or advisor from a university, medical facility or research institute.

ENGLISH DEPARTMENT

Course Title	Credit	Grade Offered
Literacy Lab	1.0	9
English 9	1.0	9
English 9 Honors	1.0	9
Flight Brief	0.25	10
English 10	1.0	10
English 10 Honors	1.0	10
English 11	1.0	11
English 11 Honors	1.0	11
Yearbook	1.0	11, 12
Creative Writing	0.5	11, 12
English 12	1.0	12
AP English Literature and Composition	1.0	12

EN100, EN105: LITERACY LAB

Prerequisite: Placement by Student Services and English Department

Credit: .5 or 1.0

Grade: 9

The goal for Literacy Lab is to provide additional support and intervention to students enrolled in English 9 who have been identified as learners who will benefit from extended instruction in English content and skill development. This course will provide students with supplemental practices as they build their foundation of knowledge and strengthen their reading comprehension, writing fluency, grammatical competence, and vocabulary repertoire. Not only will students in Literacy Lab deepen their exposure with the various texts in English 9, but they will also review foundational elements of grammar and writing organization, expand vocabulary and engage in word studies, apply reading comprehension strategies, and practice close-reading text analysis.

Depending on the department recommendation, Literacy Lab may be taken as a semester or yearlong course. Students may 'graduate out' after first semester if they show adequate improvement as determined by the student's teacher and counselor.

EN120, EN125: ENGLISH 9

Prerequisite: None

Credit: 1.0

Grade: 9

The goal for *English 9* is to build a solid foundation of knowledge, skills, and strategies that will be refined, applied, and extended as students engage in more complex ideas, texts, and tasks. In *English 9*, students will engage with various genres of classic and contemporary narrative and informational texts that will be read and analyzed throughout high school. Students will consider how they build their identities, how their relationships impact others, and their responsibility to society. Additionally, students will connect with and respond to texts by analyzing relationships within and across families, communities, societies, governments, and economies. Lastly, students will demonstrate mastery of literature, writing, language (vocabulary and grammar), and speaking and listening skills through small and large group discussion, individual and small group projects, written analysis, and quizzes and tests.

EN170, EN175: ENGLISH 9 HONORS

Prerequisite: Middle school or Department Recommendation
Credit: 1.0
Grade: 9

The goal for *English 9 Honors* is to extend beyond the basic knowledge, skills, and strategies to engage in more complex ideas, texts, and tasks. In *English 9 Honors*, students will engage with various genres of classic and contemporary narrative and informational texts that will be read and analyzed throughout high school. Students will consider how they build their identities, how their relationships impact others, and their responsibility to society. Ninth graders will connect with and respond to texts by analyzing relationships within and across families, communities, societies, governments, and economies. Additionally, students will demonstrate mastery of literature, writing, language (vocabulary and grammar), and speaking and listening skills through small and large group discussion, individual and small group projects, written analysis, and quizzes and tests. The complexity of texts and the pace of *English 9 Honors* are both more challenging than the traditional sections of *English 9*.

EN220, EN225: ENGLISH 10

Prerequisite: English 9
Credit: 1.0
Grade: 10

The goal for *English 10, American Literature*, is to further students' literacy skills, knowledge, and strategies as they apply to the reading and writing of literature, particularly as it relates to their world. In *English 10*, students will delve into the various genres of classic and contemporary American narrative and informational texts through reading and analysis. Tenth graders will connect with and respond to texts by analyzing relationships between cultures, ethnicities, regions, economies, and time periods. By engaging with texts written by a diverse set of authors, students will learn to relate their lives and experiences to those of other people and groups. Students will also learn to question their role in and responsibility to society.

EN270, EN275: ENGLISH 10 HONORS

Prerequisite: Department Recommendation
Credit: 1.0
Grade: 10

The goal for *English 10 Honors* is to further students' literacy skills, knowledge, and strategies as they apply to the reading and writing of literature, particularly as it relates to their world. Students will delve into the various genres of classic and contemporary American narrative and informational texts through reading and analysis. Tenth graders will connect with and respond to texts by analyzing relationships between cultures, ethnicities, regions, economies, and time period and will learn to relate their lives and experiences to those of other people and groups. Students will also learn to question their role in and responsibility to society. The complexity of texts and the pace of *English 10 Honors* are both more challenging than the traditional sections of *English 10*.

AV25X: FLIGHT BRIEF

Prerequisite: None
Credit: 0.25
Grade Level: 10 *required for all 10th grade students

The purpose of WMAA's *Flight Brief* course is to develop and improve students' ability to speak publicly in a range of settings. Students will be exposed to a variety of public speaking opportunities within the field of aviation and beyond. Emphasis will be placed on listening skills, organization and support of speech writing, and dynamic delivery. The course goals include improving control over speaking habits and enunciation and addressing all situations with poise and confidence. *Flight Brief* students will be expected to participate in formal and informal speaking opportunities as well as delivering a panel discussion group presentation.

EN320, EN325: ENGLISH 11

Prerequisite: English 10
Credit: 1.0
Grade: 11

English 11 is designed to give students a taste of the English literary canon while developing an appreciation for the evolution of the English language. *English 11* is a comprehensive survey of British authors and the chronological development of British literature. Through reading, writing, speaking, listening, and viewing experiences, students explore works from *Beowulf* through the Modern Age. The course will cover the development and importance of storytelling in society. Students will develop critical thinking skills through literary analysis and open dialogue. The course encourages literary analysis through a variety of writing modes in preparation for higher academic writing.

EN370, EN375: ENGLISH 11 HONORS

Prerequisite: Department Recommendation
Credit: 1.0
Grade: 11

The *English 11 Honors* course offers pre-AP English students an opportunity for a rigorous survey of British authors and the chronological development of British literature. Through extensive reading, writing, speaking, listening, and viewing experiences, students explore works from Beowulf through the Modern Age. The course encourages in-depth literary analysis with an increased sophistication in analytic and argumentative writing and research. Students will create a variety of written and creative projects and products. Reading will include essays, non-fiction texts, novels, short stories, and poems.

EN330, EN335: YEARBOOK

Prerequisite: Department Approval based on Required Application
Credit: 1.0
Grade: 11, 12

Yearbook is businesslike in nature and allows students to participate in the production of the school yearbook and multiple school news outlets. Students in this course are required to learn layout design; write and fit copy, captions, and headlines; sell advertisements; learn basic photography skills; and be proficient on a computer. Individual responsibility is essential toward completion of assignments for deadlines. Students will also have the opportunity to accept leadership positions and develop new skills as they build the yearbook. Students will also have an opportunity to participate in multiple committees including photography, copy editing, senior photo and quote collecting, WMAA News/ social media broadcasting and advertising, administrative inventory and invoicing, and layout design. Interested students must complete and submit an application. This course will count toward an elective credit.

EN33X: CREATIVE WRITING

Prerequisite: None
Credit: 0.5
Grade: 11, 12

This semester long elective will allow students to explore and refine their creative writing skills in a variety of different mediums. We will write short stories, poetry, memoirs, and many other types of creative, written expression. We will also explore the editorial and publishing process in more depth than a general English class. Student work will culminate in a portfolio of polished work completed by the end of the semester. This elective would be ideal for a student who wants a creative outlet during the day or who is interested in a career in journalism, writing, or publishing. This course will count toward an elective credit.

EN420, EN425: ENGLISH 12

Prerequisite: English 11
Credit: 1.0
Grade: 12

English 12 is a course in which students prepare for the reading and writing lives they will lead after high school. Three essential components exist: the choice reading program, professional writing, and world literature. In the first semester, we launch the choice reading program, which continues throughout the entire year. We then layer in a focus on the methodology of writing within the realms of post-secondary preparation. Towards the end of first semester, we will begin incorporating whole-class texts, studying multimodal literature (in the form of a podcast), the formation of one's identity, and journeys. This evolves into second semester's study of world literature. Important concepts from our whole-class texts include discernment, cultural understanding, and empathy with regard to all forms of literature in a global context. Students will seek to understand the moral and artistic value of various cultures through the works studied. Together we will learn and think about the world's literatures and discuss other worldviews with an open mind.

EN480, EN485: ADVANCED PLACEMENT (AP) ENGLISH LITERATURE AND COMPOSITION

Prerequisite: Department Recommendation
Credit: 1.0
Grade: 12

AP English Literature and Composition is a two-semester, college-level course designed to foster deeper growth in the careful reading and critical analysis of works of literary merit. The course involves extensive study of how to form meaning and produce college-level writing about these texts. Students will consider a work's structure, style, themes, and literary elements and how they contribute to the work's significance. Summer reading prior to the course will be required. Each student is expected to take the AP English Literature and Composition Exam that is administered in May. Successful achievement on the AP Exam allows the student the potential to earn college credit.

MATHEMATICS DEPARTMENT

Course Title	Credit	Grade Offered
Pre-Flight Math	1.0	9
Algebra I	1.0	9, 10
Algebra I (H)	1.0	9, 10
Geometry	1.0	9, 10, 11
Geometry (H)	1.0	9, 10, 11
Algebra II	1.0	10, 11, 12
Algebra II (H)	1.0	10, 11, 12
Trigonometry/Pre-Calculus	1.0	11, 12
Trigonometry/Pre-Calculus (H)	1.0	11, 12
Financial Math I	0.5	11, 12
Financial Math II	0.5	11, 12
Advanced Placement (AP) Calculus AB	1.0	11, 12
Advanced Placement (AP) Statistics	1.0	11, 12

MA100, MA105: PRE-FLIGHT MATH

Prerequisite: 8th Grade Math and/or placement from New Student Orientation
Credit: 1.0
Grade Level: 9

The purpose of this course is to enhance the foundation of concepts and skills in numbers & operations, algebra, geometry, measurement, and probability & statistics in preparation for Algebra 1. In addition, students will build on their ability to solve problems, reason logically, communicate understanding, and make mathematical connections.

MA120, MA125: ALGEBRA I

Prerequisite: Pre-flight math, pre-algebra, or middle school recommendation
Credit: 1.0
Grade Level: 9, 10

The purpose of this course is to lay the concept and skill foundation for all high school and college math courses with a functions approach to algebra. Students will build on their ability to communicate with graphs and symbols and begin developing an understanding of the meaning and use of data models. They will explore ways to represent data relationships (data tables, graphs, equations, and verbal descriptions). Through reasoning and practice, students will begin to develop fluency with all algebraic operations.

MA160, MA165: ALGEBRA I HONORS

Prerequisite: Pre-flight math or middle school recommendation
Credit: 1.0
Grade Level: 9, 10

This course is a more rigorous presentation of the curriculum in Algebra I. Honors students will work with the same topics as Algebra I students, but will be expected to take on more challenging and in-depth problems related to those topics. Honors students will be expected to complete additional assignments, a semester project, and extended assessments throughout the semester.

MA220, MA225: GEOMETRY

Prerequisite: Algebra I
Credit: 1.0
Grade Level: 9, 10, 11

In this course, students will develop skills in logic and proof, study right triangle trigonometry, and expand their knowledge of transformations, coordinate geometry, measurement formulas, and 3-dimensional figures. They will learn to apply their knowledge to solve problems involving principles of layout, structure, and design.

MA270, MA275: GEOMETRY HONORS

Prerequisite: Algebra I & department recommendation
Credit: 1.0
Grade Level: 9, 10, 11

Taking a more rigorous and in-depth approach than geometry, students will develop skills in logic and proof, study right triangle trigonometry, and expand their knowledge of transformations, coordinate geometry, measurement formulas, and 3-dimensional figures. They will learn to apply their knowledge to solve problems involving principles of layout, structure, and design. Additional topics of study include symbolic logic, exploring the Golden Ratio, and trigonometric topics such as the unit circle and polar coordinates.

MA320, MA325: ALGEBRA II

Prerequisite: Algebra I and Geometry
Credit: 1.0
Grade Level: 10, 11, 12

This course emphasizes linear, exponential, logarithmic, trigonometric, polynomial, and other special functions for their abstract properties and as tools for modeling real world situations. Concepts from algebra and geometry will lead to skills in data analysis, discrete math, and trigonometry.

MA360, MA365: ALGEBRA II HONORS

Prerequisites: Algebra I, Geometry & department recommendation
Credit: 1.0
Grade Level: 10, 11, 12

This course is a more rigorous presentation of the curriculum in Algebra II. Students will work with the same topics as Algebra II students, but will be expected to take on more challenging and in-depth problems related to those topics. Compared to Algebra II, students will be expected to complete additional assignments, a project, and extended assessments throughout the semester.

MA430, MA435: TRIGONOMETRY/PRE-CALCULUS

Prerequisite: Algebra II
Credit: 1.0
Grade Level: 11, 12

This course introduces students to trigonometric concepts of polar and parametric functions, conic sections, and logistic modeling. Linear, exponential, logarithmic, trigonometric, and polynomial functions, as well as matrices, will also be studied in depth. In addition, the course provides a solid foundation for calculus by expanding students' understanding of the usefulness of data models, honing their ability to make sense of data tables and symbolic expressions, and establish fluency with symbol manipulation techniques. Students will examine both algebraic and non-algebraic functions and relationships, including exponential, logarithmic, composite, rational, and trigonometric. Such functions are used in many scientific endeavors and occupations. Lastly, students will be introduced to AP Calculus content including continuity, limits, and derivatives.

MA460, MA465: TRIGONOMETRY/PRE-CALCULUS HONORS

Prerequisites: Algebra II & department recommendation
Credit: 1.0
Grade Level: 11, 12

This course is a more rigorous presentation of the curriculum in Trigonometry/Pre-Calculus. Additional topics of study include in-depth analysis of trigonometric graphs including tangent and the reciprocal functions, analytic trigonometry and verification of identities, physics applications of vectors, matrix computations, and introductory AP Calculus content including continuity, limits, and derivatives.

MA410: FINANCIAL MATH I

Prerequisite: Completion of or concurrent enrollment in Algebra II

Credit: 0.5

Grade Level: 11, 12

This course is recommended for students who have completed Algebra II and are looking for a career in any aspect of business. This course is comprised of 8 major units that have applications in real-life mathematics. Units are as follows: life after high school, consumer awareness and expenses, income savings and taxes, budgets, bargain shopping and negotiation, credit and debt, housing and insurance, investing, and retirement.

MA415: FINANCIAL MATH II

Prerequisite: Completion of or concurrent enrollment in Algebra II

Credit: 0.5

Grade Level: 11, 12

This course is recommended for all students and is designed to teach beginner and intermediate skills necessary to be successful with spreadsheets. Aspects covered in this class will be: cell and data manipulation, formatting and conditional formatting, formulas with cell references, and creating charts and graphs. Students will see how setting up a proper spreadsheet will save them time and effort and help them be financially successful.

MA480, MA485: ADVANCED PLACEMENT (AP) CALCULUS AB

Prerequisites: Trigonometry/Pre-Calculus & department recommendation

Credit: 1.0

Grade Level: 11, 12

This course follows the guidelines provided by the College Board for Advanced Placement courses. Functions, their graphs, their limits (including one-sided limits), and the property of continuity are covered in detail. Rate of change and the derivative at a point on a function and the derivative of the entire function, along with integrals of functions are also studied which culminate in the use of the Fundamental Theorem of Calculus. The course concludes with the Advanced Placement Calculus AB exam offered in May.

MA470, MA475: ADVANCED PLACEMENT (AP) STATISTICS

Prerequisites: Algebra II & department recommendation

Credit: 1.0

Grade Level: 11, 12

Students will investigate data patterns with density and normal curves and study statistical correlation of data. Students will design experiments and study probability with discrete, continuous, binomial and geometric distributions. Students will be able to interpret results using significance tests and make inference for distributions, proportions, Chi-Square procedures and regression models. Reading and problem solving are emphasized throughout the course. Students are encouraged to take the Advanced Placement Statistics examination.

Course Title	Credit	Grade Offered
Physics of the Universe	1.0	9
Physics of the Universe Honors (H)	1.0	9
Chemistry of the Earth	1.0	10
Chemistry of the Earth (H)	1.0	10
Biology of the Earth	1.0	11,12
Anatomy and Physiology	1.0	11, 12
Advanced Placement (AP) Biology	1.0	11, 12
Advanced Placement (AP) Chemistry	1.0	11, 12
Advanced Placement (AP) Physics 1	1.0	11, 12

SC140, SC145: PHYSICS OF THE UNIVERSE

Prerequisite: None

Credit: 1.0

Grade Level: 9

This yearlong course will combine physics concepts with space sciences. The storyline concepts that are found in this course include *Forces & Motion*, *Forces at a Distance*, *Energy Conservation*, *Nuclear Processes*, *Waves & Electromagnetic Radiation*, and *Stars & the Origin of the Universe*. Observations of the crosscutting concepts will be discussed throughout the course as students explore patterns, cause & effect relationships, scales, systems & models, energy flows & matter cycles, structure & function connections, and notions of stability & change. Students will also investigate natural phenomena by designing and implementing experiments that help them to better understand the physical world around them. This course also heavily emphasizes graphing and communicating scientific information through whole class discussions and lab reports.

SC 180, SC 185: PHYSICS OF THE UNIVERSE HONORS (H)

Prerequisite: Concurrent enrollment or completion of Algebra 1

Credit: 1.0

Grade Level: 9

This course is intended to introduce freshmen to the fundamentals of physics and the universe through extensive experimentation, discourse, reading and writing using common science practices and engineering principles modeled through all science courses at West Michigan Aviation Academy. Students will investigate topics including forces in motion, forces at a distance, energy conversion, nuclear processes, waves & electromagnetic radiation, and stars & the origin of the universe. This course will include a more rigorous application of reading, writing, and math as well as more student-designed experimentation than Physics and will serve as an excellent stepping stone to AP Physics and Chemistry of the Earth.

SC240, SC 245: CHEMISTRY OF THE EARTH

Prerequisite: Physics of the Universe or Physics of the Universe (H)
Credit: 1.0
Grade Level: 10

The hands-on course is designed for students to develop an understanding of the science of chemistry through the use of experiments, class discussions, demonstrations, projects, and presentations. The storyline concepts that are found in this course include density, combustion, heat & energy in the Earth, atoms, elements, molecules and chemical reactions. Students will investigate various phenomenon and propose working theories for the science behind the experiment.

SC280, SC285: CHEMISTRY OF THE EARTH HONORS

Prerequisite: Physics of the Universe or Honors Physics of the Universe
Credit: 1.0
Grade Level: 10

This course will include a more rigorous application of general chemistry concepts and place an emphasis on reading, writing, and math as well as more student-designed experimentation than general chemistry and will serve as an excellent stepping stone to AP Chemistry. The storyline concepts that are found in this course include density, combustion, heat & energy in the Earth, atoms, elements, molecules and chemical reactions. Students will investigate various phenomenon and propose working theories for the science behind the experiment.

SC340, SC345: BIOLOGY OF THE EARTH

Prerequisite: Chemistry of the Earth or Chemistry of the Earth (H)
Credit: 1.0
Grade Level: 11

This course aims to build student knowledge of science and of life through the study of living systems. The main concepts that are found in this course include *Ecosystem Interactions & Energy, Photosynthesis & Respiration, Evidence of Evolution, Inheritance of Traits, Structure, Function & Growth, and Ecosystem Stability & the Response to Climate Change*. Observations of the crosscutting concepts will be discussed throughout the course as students explore patterns, cause & effect relationships, scales, systems & models, energy flows & matter cycles, structure & function connections, and notions of stability & change. Students will also investigate natural phenomena by designing and implementing experiments that help them to better understand the living world around them.

SC430, AC435: ANATOMY AND PHYSIOLOGY

Prerequisite: Completion of or concurrent enrollment in Biology of the Earth or AP Biology
Credit: 1.0
Grade Level: 11, 12

This class starts with a basic overview of biological systems and their functions. Students will learn interactions between the levels of organization of the human body and the individual parts of each level. The anatomy and function of each of these systems will be discussed throughout the class: integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic and immune, respiratory, digestive, urinary, and reproductive. The anatomical planes and sections will also be studied. At the end of each unit, diseases will be discussed that pertain to the systems of the body being studied in the unit. This is a great class for any student interested in expanding on what they learned in Biology or AP Biology class and interested in pursuing a career in any health field. This is also a helpful class to take in order to better understand biomedical sciences.

SC460, SC465: ADVANCED PLACEMENT (AP) BIOLOGY

Prerequisites: Chemistry of the Earth or Chemistry of the Earth (H)
Credit: 1.0
Grade Level: 11, 12

This course is rigorous and is the equivalent of an introductory college biology course. Content will be covered in more depth and greater expectations will be placed on interpretation and analysis of information than previous biology courses. The four main areas of study are cells, genetics, evolution and ecology. Crosscutting concepts will be analyzed throughout the year. In addition, statistical analysis of data and modeling of concepts will be expected. A significant amount of studying must be completed at home to allow time for discussion, labs, and inquiry during class time.

SC470, SC475: ADVANCED PLACEMENT (AP) CHEMISTRY

Prerequisites: Chemistry of the Earth or Chemistry of the Earth (H)

Department recommendation

Credit: 1.0

Grade Level: 11, 12

AP Chemistry is designed to be a rigorous course that is the equivalent to a first-year college course. This class will include topics such as atomic structure/theory, chemical bonding, nuclear chemistry, states of matter, reaction types, equilibrium, kinetics, and thermodynamics. Crosscutting concepts will be analyzed throughout the year. A significant amount of studying must be completed at home to allow time for discussion, labs, and inquiry during class time. Students who enroll in this course are encouraged to take the AP Chemistry Exam in May.

SC480, SC485: ADVANCED PLACEMENT (AP) PHYSICS 1

Prerequisites: Algebra II and Physics of the Earth

Credit: 1.0

Grade Level: 11, 12

AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of physics through inquiry-based investigations as they explore topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. This class is equivalent in scope and rigor to a first-year college physics class. Students who enroll in this course are encouraged (but not required) to take the corresponding AP exam. This course is taught with the purpose of preparing students to take the AP Physics 1 Exam.

SOCIAL STUDIES DEPARTMENT

Course Title	Credit	Grade Offered
World History	1.0	9
World History (H)	1.0	9
U.S. History	1.0	10
Advanced Placement (AP) U.S. History	1.0	10
Government	0.5	11
Advanced Placement (AP) United States Government and Politics	1.0	11
Economics	0.5	11
Advanced Placement (AP) Macroeconomics	0.5	11
Advanced Placement (AP) Microeconomics	0.5	11
Psychology	1.0	11, 12
Child Development	0.5	11, 12
Sociology	0.5	11, 12
World Cultures	0.5	11,12
Human Geography	0.5	11, 12
AP Psychology	1.0	11, 12

SS120, SS125: WORLD HISTORY

Prerequisite: None

Credit: 1.0

Grade Level: 9

This course covers the history, geography and current issues of the Middle East, Asia, Africa, Europe, and the Americas. The social changes, political systems, rise and fall of empires and civilizations, technological advances, religions, and cultural achievements will be studied in the context of each cultural era. Through the analysis of primary source documents and other artifacts, students are encouraged to make connections between the past and present.

SS170, SS175: WORLD HISTORY HONORS

Prerequisite: None

Credit: 1.0

Grade Level: 9

This course covers the same topics as World History, but will progress at a faster pace and will include more in-depth reading and writing. The social changes, political systems, rise and fall of empires and civilizations, technological advances, religions, and cultural achievements will be studied in the context of each cultural era. Through the analysis of primary source documents and other artifacts, students are encouraged to make connections between the past and present.

SS220, SS225: U.S. HISTORY

Prerequisite: None
Credit: 1.0
Grade Level: 10

This comprehensive, yearlong study of United States history will stress political, economic, social, diplomatic, and cultural developments from the Reconstruction era to modern times. Students will be required to read primary and secondary sources, analyze historical trends, evaluate actions of individuals and groups, and develop writing skills that display historical ways of thinking. Balanced with the grade-appropriate rigor, this course offers the opportunity for students to closely interact with the curriculum through debate, discovery, film, projects and role-play.

SS280, SS285: ADVANCED PLACEMENT (AP) U.S. HISTORY

Prerequisite: Department Recommendation
Credit: 1.0
Grade Level: 10

This course is a comprehensive, accelerated, college-level survey course encompassing North American and United States history and geography from the colonial era to the present. The intent is to develop an understanding of the key people, events, ideas, issues, and trends throughout our history that have defined who and what we are today. Critical and evaluative thinking ability will be honed through shared research, class discussions, essay writing and the interpretation of primary and secondary source documents. College credit can be earned by demonstrating understanding of information and ideas on the College Board AP US History exam, which students will be encouraged to take. This course is considerably more challenging and demanding than most high school courses and requires a great commitment. The class will help strengthen students' ability to assess historical materials, their relevance to a given interpretive problem, their reliability, and their importance, and to weigh the evidence and interpretations presented in historical scholarship.

SS32X: GOVERNMENT

Prerequisite: None
Credit: 0.5
Grade Level: 11

In this course, students will evaluate the structure and function of the United States Government at the national, state, and local levels and the rights and responsibilities of citizens within that structure. The course covers the fundamental ideas, functions and processes that form the basis of the American political system. Areas to be addressed include power, authority, and government; foundations of American government; political participation and behavior; legislative, executive, and judicial branches of government; and the United States and the world.

SS360, SS365: ADVANCED PLACEMENT (AP) UNITED STATES GOVERNMENT AND POLITICS

Prerequisite: Department Recommendation

Credit: 1.0

Grade Level: 11

The yearlong course provides an analytical perspective on United States government and politics. This course includes both the study of general concepts used to interpret U.S. politics and the analysis of specific case studies. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. political reality. Students will become acquainted with a variety of theoretical perspectives and explanations for various behaviors and outcomes. Current political, legal, and government issues will be used to illustrate major concepts and refine the student's understanding of the American political system. AP U.S. Government and Politics will provide students with a true college atmosphere in content, pacing, and instruction. Emphasis will be placed on critical and higher-level thinking skills and essay writing. The course will challenge a student's ability to think and analyze material critically, and provides an opportunity to earn college credit through the AP exam.

SS33X: ECONOMICS

Prerequisite: None

Credit: 0.5

Grade Level: 11

The economics course enables students to understand and consider potential implications of basic scarcity, a problem faced by all individuals, businesses, and societies. From personal decisions to global concerns, economics teaches students how to successfully evaluate the concept of choice. Through weighing both short- and long-term costs and benefits, examining alternatives, and anticipating intended and unintended consequences of economic choices, students will be prepared to make decisions regarding the economy. Units of study include economic fundamentals, how markets work, economic institutions and organizations, economics of the public sector, measuring and monitoring the economy, and the U.S. and the global economy.

SS38X: ADVANCED PLACEMENT (AP) MACROECONOMICS

Prerequisite: Department Recommendation
Credit: 0.5
Grade Level: 11

The course is a one-semester study of the principles of economics that apply to the economic system as a whole with particular emphasis on the analysis of national income and price determination, government spending and taxation, money, banking, monetary policy and international trade. Students will also become familiar with economic performance measures, economic growth, the financial sector, stabilization policies, and international economies. This course is taught with the purpose of preparing students to take the AP Macroeconomics Exam.

SS42X: ADVANCED PLACEMENT (AP) MICROECONOMICS

Prerequisite: Department Recommendation
Credit: 0.5
Grade Level: 11

This is a one-semester study of the principles of economics in an introductory college-level course focused on the principles of economics that apply to the functions of individual economics decision-makers. The course also develops students' familiarity with the operation of product and factor markets, distributions of income, market failure, and the role of government in promoting greater efficiency and equity in the economy. This course is taught with the purpose of preparing students to take the AP Microeconomics Exam.

SS340, SS345: PSYCHOLOGY

Prerequisite: None
Credit: 1.0
Grade Level: 11, 12

This is a yearlong course that introduces students to the basic principles of psychology. Throughout the course, we will evaluate why humans behave the way that they do. We will look in-depth at the human brain, conditioning, sensation and perception, memory, sleep, human development, what motivates humans, what forms personality, theories of emotion, and psychological disorders. Students will explore the world of psychology through discussions, hands-on projects, and activities.

SS40X: CHILD DEVELOPMENT

Prerequisite: None
Credit: 1.0
Grade Level: 11, 12

This class will explore developmental psychology and the different stages children go through from birth to adulthood. Developmental psychology will be applied through career exploration units that all center around working with children. Careers that we will interact with include day care, education, social work, pediatrics, and government. This class is designed for people who have an interest in working with children or learning more about the development of a child.

SS35X: SOCIOLOGY

Prerequisite: None
Credit: 0.5
Grade Level: 11, 12

This introductory course examines the principles and methodology of sociology and the development, structure, and functioning of human society. Students will explore the role of culture, socialization, and deviance in society as well as how these sociological concepts influence group and individual behavior. Through this course, students will investigate research studies and subcultures, participate in group activities and simulations, and analyze group behavior like sociologists.

SS41X: WORLD CULTURES

Prerequisite: None
Credit: 0.5
Grade Level: 11, 12

This cultural and regional survey course will examine the various cultures of the modern world. The geographic, historic, religious, cultural, social, political, and economic aspects of several of the major world regions will be examined comparatively in order to provide students with an understanding of the various and diverse regions of the world. The course provides students with a sense of their own culture as well as a global framework and understanding.

SS31X: HUMAN GEOGRAPHY

Prerequisite: World History or World History Honors
Credit: 0.5
Grade Level: 11, 12

The purpose of this course is to explore how the *way* people live is affected by *where* they live. Students will study spatial patterns to examine how people make use of space with topics such as migration, agriculture, and political geography. We will study the environmental consequences that are associated with the geographic issues presented in this course. Students will be looking for patterns in different cultures, identifying trends, and then extrapolate how cultures might change and grow in the future. As a class, we will bring certain skills to study these patterns and trends at a more local level and apply them to the very diverse Grand Rapids area. Lastly, students will explore different methods and tools used by geographers in their practice in a lab-based setting.

SS310, SS315: ADVANCED PLACEMENT (AP) PSYCHOLOGY

Prerequisite: None

Credit: 1.0

Grade Level: 11, 12

AP Psychology serves motivated students seeking to understand human behavior from a scientific perspective. The course surveys and analyzes history, research, biology, social psychology, personality, stress and health, abnormal psychology, development, learning, intelligence, memory and more. Success in the course may facilitate success on the AP exam.

SPANISH DEPARTMENT

Course Title	Credit	Grade Offered
Spanish I	1.0	9
Spanish II	1.0	9, 10
Accelerated Spanish II/III Honors	1.0	10
Spanish III	1.0	10, 11
Spanish IV	1.0	10, 11, 12
Advanced Placement (AP) Spanish Language and Culture	1.0	11, 12

Throughout our Spanish courses, students will develop written, spoken, and cultural Spanish, using the Michigan Foreign Language Standards of:

- Communication (written and spoken),
- Culture (the practices and perspectives of groups of people),
- Connections (between other disciplines and languages and Spanish),
- Comparisons (of the Spanish language and cultures and your own), and
- Communities (using Spanish in and outside of the classroom).

The aim of the Spanish department is to develop the four main language skills of speaking, writing, reading, and listening in order to use Spanish in a wide range of settings and careers. Additionally, students will learn what it means to be a global learner prepared to meet the challenges of the contemporary world. A heavy emphasis of Spanish will be on making connections to different Hispanic cultures and countries throughout the world, as well as engaging with the vibrant Hispanic community in Grand Rapids.

Incoming students with previous experience in Spanish can be placed in a higher level of Spanish by attending one of the placement testing sessions offered the Spring before or during New Student Orientation. During placement testing, students will be asked to demonstrate the level of proficiency they have in understanding and using Spanish and will be placed in the level of Spanish that matches their proficiency level.

WL120, WL125: SPANISH I

Prerequisite: None
Credit: 1.0
Grade Level: 9

This course is designed for students with little to no previous Spanish experience or students who need a thorough review of the basics of the language. Students will daily be exposed to spoken and written Spanish as we study Hispanic culture and will learn basic communication skills. These skills will be refined through a variety of methods including repetition, cultural units, storytelling, and novels.

WL220, WL225: SPANISH II

Prerequisite: Completion of Spanish I or Department Recommendation
Credit: 1.0
Grade Level: 9, 10

This course is designed for students who have already completed Spanish 1 or demonstrate a proficiency level equivalent to the completion of Spanish 1. Similar to Spanish 1, Spanish 2 will daily expose students to the Spanish language, both spoken and written, as we study Hispanic culture and further develop our communication skills. The main units of this course will include storytelling, novels, and cultural units.

WL280, WL285: ACCELERATED SPANISH II/III HONORS

Prerequisites: Overall Grade of 90% in Spanish I and/or Department Recommendation
Credit: 1.0
Grade Level: 10

Spanish 2/3 Accelerated is an honors-level Spanish course. This fast-paced course is designed to both push our linguistically minded students and allow our students to be able to take AP Spanish by their senior year. Spanish 2/3 Accelerated follows the main units of both Spanish 2 and Spanish 3 courses. Students will daily be exposed to spoken and written Spanish as we study Hispanic culture and further develop our written and spoken communications. These skills will be refined through storytelling, novels, and cultural units.

WL320, WL325: SPANISH III

Prerequisite: Spanish II or Department Recommendation
Credit: 1.0
Grade Level: 10, 11

This course is designed for students who have already completed Spanish 2, or demonstrate a proficiency level equivalent to the completion of Spanish 2, and who wish to further enhance their Spanish language skills. The focus of the class will be on improving communication and literacy skills through thematic cultural units and reading novels. Students will also continue to develop writing and speaking skills and begin to develop Spanish academic language proficiency.

WL420, WL425: SPANISH IV

Prerequisite: Spanish II Honors, Spanish III, or Department Recommendation

Credit: 1.0

Grade Level: 10, 11, 12

This course, similar to our other courses, contains cultural units, storytelling, and novels. However, Spanish 4 focuses on higher level language, including: grammar, extended vocabulary, sentence structure and style. Additionally, Spanish 4 pushes students to develop academic language skills through extensive reading, listening, writing, and speaking. Spanish 4 is designed to grow students with varying experience and background in Spanish to higher levels of fluency and prepare students to be very successful in AP Spanish.

WL470, WL475: ADVANCED PLACEMENT (AP) SPANISH LANGUAGE AND CULTURE

Prerequisite: Spanish IV or Department Recommendation

Credit: 1.0

Grade Level: 11, 12

Taught predominantly in Spanish, AP Spanish Language and Culture emphasizes communication by applying interpersonal, interpretive, and presentational skills in real-life situations, including vocabulary usage, language control, communication strategies, and cultural awareness. The AP Spanish Language and Culture course engages students in an exploration of culture in both contemporary and historical contexts. The course develops students' awareness and appreciation of cultural products (e.g., tools, books, music, laws, conventions, institutions); practices (patterns of social interactions within a culture); and perspectives (values, attitudes, and assumptions). This course is taught with the purpose of preparing students to take the AP Spanish Language Exam.

Course Title	Credit	Grade Offered
Health	0.5	9
Physical Education	0.5	9
Fit for Flight	0.5	11, 12
Leadership	0.5	11,12
Strength Training	0.5	11, 12
Lifetime Sports	0.5	11, 12

HEALTH AND PHYSICAL EDUCATION DEPARTMENT

PE12X: HEALTH EDUCATION

Pre-Requisite: None
 Credit: 0.5
 Grade Level: 9 *Required

The goal of the 9th grade Health Education class is to focus on the importance of maintaining good health in order to live a long, healthy, and fulfilling life. The class will emphasize the impact that physical, social, emotional, spiritual, and mental health has on an individual's performance in the classroom and within their work environment. The Health Education class will give WMAA students a chance to learn concepts and practice skills throughout a variety of units, including: Healthy Behaviors, Decision Making, Communication, Goal Setting, Advocacy, Accessing Information, Analyzing Influences, and Comprehending Concepts, CPR and First Aid.

PE13X: PHYSICAL EDUCATION

Pre-Requisite: None
 Credit: 0.5
 Grade Level: 9 *Required

This class will focus on the importance of developing motor, cognitive, and personal-social skills in order for students to be happy, healthy, and active across the lifespan. The class will give students a chance to learn and practice skills in a variety of activities, while learning the importance of physical activity on their personal health and well-being. Students will learn how to record and track their fitness progress by using the results of their fitness tests, which will occur three times per year. This integral part of this class will emphasize the importance of being accountable for one's own health and being able to relate good health to positive performance in the classroom and in the work place.

PE31X, PE32X: FIT FOR FLIGHT 1, FIT FOR FLIGHT 2

Prerequisite: Physical Education
Credit: 0.5
Grade: 11, 12

This course will be structured around the United States Air Force Academy's fitness standards in body composition, muscular strength and endurance and cardiovascular endurance. Students will learn the proper knowledge and skills to enhance their personal fitness. Students will perform cardiovascular workouts and will engage in strength training. This program will be structured on an individual basis so each student may achieve the maximum benefit. This course can be taken more than once.

PE33X: LEADERSHIP

Prerequisite: None
Credit: 0.5
Grade Level: 11, 12

Students will be exposed to different perspectives on the topic through engagements with modern media, class discussions, and a variety of texts. The course will emphasize public speaking skills ranging from civil in-class debates to independent and group presentations. Through a combination of in-class activities, hands-on lessons, and authentic opportunities to engage in civic leadership outside of the classroom, students will learn from the examples of others while becoming models of leadership themselves. The class culminates in the presentation and reflection of a project in servant leadership.

PE35X, PE36X: STRENGTH TRAINING 1, STENGTH TRAINING 2

Prerequisite: Physical Education
Credit: 0.5
Grade: 11, 12

The emphasis of the strength-training course is to build knowledge of muscular strength, endurance, and flexibility as well as the practice of each, along with practice of understanding and developing cardiovascular endurance and body composition. The students will learn weight room safety, warm-up/cool down procedures, lifting technique, major muscle identification, and individual goal setting. In addition, students will monitor and improve their fitness levels by participating in assessments throughout the semester as well as developing their own workout plans catered to their own individual goals. This course can be taken more than once.

PE42X: LIFETIME SPORTS

Prerequisite: 9th Grade PE

Credit: 0.5

Grade: 11, 12

This class will focus on learning rules and playing sports such as ultimate Frisbee, volleyball, badminton, pickle ball, floor hockey, basketball, Saturn ball, team handball, softball, kickball, and soccer.

MULTIDISCIPLINARY

Course Title	Credit	Grade Offered
English Language Development (ELD)	1.0	9, 10, 11, 12
Evidence Based Literacy Instruction (EBLI)	0.5	9, 10, 11, 12
Skills for Success	1.0	9, 10, 11, 12

ELSO, ELS5: SUMMIT COURSE

Prerequisite: Department Placement
Credit: 1.0
Grade Level: 9, 10, 11, 12

The Summit course is designed to support English Learners by teaching 21st century skills such as organization, study skills, communication, self-advocacy, career exploration, and community networking. This course is designed to fill in the gaps of life and personal skills that are not able to be taught during traditional high school content courses or English Language Development courses

ELL220, ELL225: ENGLISH LANGUAGE DEVELOPMENT (ELD) II

Prerequisite: Department Placement
Credit: 1.0
Grade Level: 9, 10, 11, 12

The course is designed to help students work towards achieving proficiency in reading, writing, speaking, and listening in the English language. The curriculum is centered around WIDA's 6 Key Uses of language: Discuss, Inquire, Explain, Narrate, Inform, and Argue. Students will receive authentic practice and instruction in the social language of English. With a focus on developing fluency for multiple purposes through the use of theme-based units and informational text, students will be exposed to a variety of texts to build background and students will produce writing for academic purposes. Using WIDA's 6 Key Uses and the Academic Vocabulary Toolkit, students will work to increase their vocabulary in academic contexts, continue to develop their listening comprehension and increase their fluency by repeated practice of text designed to expose students to academic language used across the content areas.

EN025: EVIDENCED BASED LITERACY INSTRUCTION (EBLI)

Prerequisite: Department Placement
Credit: 0.5
Grade Level: 9, 10, 11, 12

Evidence Based Literacy Instruction (EBLI) is a research-based program designed to teach students how to read fluently, become a better writer, and spell correctly. Spelling patterns are taught in the context of writing and misspelled words are corrected immediately. Correct writing conventions are modeled and practiced. Students will be exposed to a variety of engaging texts and will work towards identifying the main idea, writing concise summaries, and participating in literature circles. This course is divided into 2 parts. The first half is made up of 30 intensive units to train students in EBLI, and the second half consists of students implementing what they've learned. Students will track their weekly progress, participate in independent and group center readings and activities, and will monitor their reading fluency, comprehension, and growth.

SE110, SE115: Skills for Success

Prerequisite: Department Eligibility Required

Credit: 0.5

Grade Level: 9, 10, 11, 12

The Skills for Success Course is offered to a student with an Individual Education Plan (IEP) requiring a resource program. The course is designed to be results-oriented, focused on improving both functional and academic skills of the student. Alignment of the specially designed instruction (SDI), related services, and/or accommodations support the student's unique areas of around the individual's IEP and post-secondary vision/course of study.