

PROGRAM OF STUDIES



2020-2021

Montgomery High School
Skillman, New Jersey

Administration

Mr. Paul J. Popadiuk	Principal
Mrs. Corie Gaylord	Director of Student Academic & Counseling Services
Mrs. Naoma Green	Vice Principal/Supervisor of Health & Physical Education
Mrs. Melissa Hodgson	Supervisor of Social Studies
Mr. Scott Pachuta	Vice Principal
Mr. Christopher Penna	Director of Athletics
Mrs. Heather Pino-Beattie	Vice Principal/Supervisor of Career Education
Ms. Alma Reyes	Supervisor of World Languages
Mrs. Jennifer Riddell	Supervisor of Mathematics
Ms. Karen Stalowski	Supervisor of English
Mr. Jason Sullivan	Supervisor of Science
Ms. Daryl Schwenck	Supervisor of Special Services
Mr. Adam Warshafsky	Supervisor of Visual & Performing Arts

Guidance Staff

Mrs. Kelly Apel	School Counselor
Mrs. Maureen Conway	School Counselor
Mr. Keith Glock	School Counselor
Mrs. Christine Grossmann	Student Assistance Counselor
Ms. Carla Hampton	School Counselor
Mr. Matthew Pogue	School Counselor
Mrs. Jessica Ritson	School Counselor
Mr. Raheel Saleem	School Counselor

Special Services Staff

Dr. Stacey Delbridge	School Psychologist
Ms. Karen Krusen	Social Worker
Ms. Viveka Mandhyan	School Psychologist
Ms. Megan Matsil	School Psychologist/Transition Coordinator
Ms. Danielle Olney	Speech/Language Therapist
Mrs. Ellen Stein	Social Worker
Ms. Kristen Wawrzyniak	LDTC

Board of Education

Ms. Phyllis Bursh
Ms. Minkyo Chenette
Mrs. Amy Miller
Mr. Michael J. Morack, Jr.
Mr. Jinesh Patel
Ms. Ranjana R. Rao
Mr. Shreesh Tiwari
Mrs. Joanne Tonkin

Central Office Administration

Mrs. Mary McLoughlin, Acting Superintendent of Schools



Message from the Principal

Dear Students and Parents:

It is with great pleasure that I present to you the 2020-2021 Program of Studies for Montgomery High School. The administration and faculty are dedicated to providing an extensive and varied curriculum offerings suited to meet the diverse needs of all students. The emphasis on quality education for everyone is reflected in the courses listed.

Students should consider the many opportunities offered at Montgomery High School. I encourage you to read the information contained in this document carefully prior to course selection. Additional information on each academic program is available from the school's administration and counseling staff who are willing to meet with parents and students on an individual basis.

Montgomery High School is a school of excellence. Our courses are taught by an experienced and dedicated teaching faculty and will provide students with the skills necessary to decipher complex problems and situations, develop autonomy, and value the correlation between hard work and reward. We invite all students to embark on a journey of life-long learning and individual growth, developing their social, emotional and cognitive skills for the future.

Sincerely yours,

Paul J. Popadiuk

Paul J. Popadiuk
Principal

Montgomery High School Mission Statement

Montgomery High School is an academically challenging and supportive community that provides innovative educational, extra-curricular, and social opportunities that encourage responsible citizenship and life-long learning.

We believe that the MHS community will:

Provide a supportive environment for academic and personal growth that fosters independence, self-reliance, and self-worth

Prepare students for a diverse and ever-changing society

Encourage the development of programs that promote good character

Enable everyone to feel physically, emotionally, and intellectually safe (free to verbally express opinions and ideas)

Value all for their unique qualities

Encourage all to pursue their individual goals in a challenging, supportive, and safe environment

Provide a positive learning environment where mutual respect and opportunity exist for the exchange of ideas among teachers, students, parents, and community members

Deliver an instructional program that addresses a variety of learning styles, interests, and levels of readiness for all students in all disciplines

Demonstrate honesty, integrity, and trustworthiness in academic pursuits and social interactions

Respect all people and cultures

Encourage participation in one's community as a social, civic, and personal responsibility

Promote learning as a life-long process.

Table of Contents

Graduation Requirements	1
Grading Information	3
Prerequisites, Course Placement & Waiver Applications.....	6
Course Change and Credit Information	7
Option II Guidelines.....	9
Somerset County Vocational Technical School - Shared Time Program.....	11
Course Descriptions.....	12
English.....	13
Social Studies.....	17
Mathematics.....	20
Science	25
World Languages	31
21 st Century Life and Careers or Career Technical Education.....	38
Visual, Performing and Technical Arts.....	43
Health, Safety and Physical Education.....	48
Index.....	51

GRADUATION REQUIREMENTS

All students must demonstrate successful completion of the following requirements:

NJ State Minimum* Graduation Requirements by Content Area

NJ DEPARTMENT OF EDUCATION REQUIRED ASSESSMENTS	Class of 2016, and on
ENGLISH/LANGUAGE ARTS LITERACY	20 credits aligned to grade 9 through 12
MATHEMATICS	15 credits including algebra I and geometry or the content equivalent**, and a third year of math that builds on the concepts and skills of algebra and geometry and prepares students for college and 21 st century careers
SCIENCE	15 credits including at least five credits in laboratory biology/life science or the content equivalent**; an additional laboratory/inquiry-based science course including chemistry, environmental science, or physics; and a third laboratory/inquiry-based science course
SOCIAL STUDIES	15 credits including satisfaction of N.J.S.A. 18A:35-1 and 2; five credits in world history; and the integration of civics, economics, geography and global content in all course offerings
FINANCIAL, ECONOMIC, AND ENTREPRENEURIAL LITERACY	2.5 credits
PHYSICAL EDUCATION, HEALTH AND SAFETY	A minimum of 3.75 credits in physical education, health & safety* during each year of enrollment, distributed as 150 minutes per week
VISUAL AND PERFORMING ARTS (Art, Music, Drama, Dance)	5 credits
ELECTIVES	15 credits
WORLD LANGUAGES	5 credits
21ST CENTURY LIFE AND CAREERS (Family/Consumer Science, Business Administration & Technology, Technology Education)	5 credits
TOTAL CREDITS (State Minimum)	120***

*School districts may establish course and/or credit requirements which exceed the State minimums.

** “Content equivalent” means courses or activities that include the same or equivalent knowledge and skills as those found in traditionally titled courses which are required for high school graduation and which are aligned with N.J. State Standards. This content must be taught by certified teachers, may be integrated in one or more courses, may be titled differently, or may present material in an interdisciplinary or spiral format.

***The 120 credit total is greater than the sum of the individual requirements above, to allow for student electives.

Class of 2019 and 2020:

For the most current New Jersey Department of Education Graduation requirements please visit this website: <http://www.state.nj.us/education/assessment/parents/GradReq.pdf>

Class of 2021 and beyond:

For the most current New Jersey Department of Education Graduation requirements please visit this website: <http://www.state.nj.us/education/assessment/parents/GradReq.pdf>

Note: The information in this Program of Studies is subject to change due to changes or revisions to district policies and/or state code that may occur during the school year.

EARLY GRADUATION

Parents/Guardians of a student seeking early graduation may initiate a written request for special consideration. The written request by the student’s parents/guardian must be filed in the Counseling/Guidance Office before March 15 of the student’s sophomore year for consideration for the following year. The request must include the reasons for the student’s plan for fulfilling graduation requirements. A meeting with the student’s school counselor must follow this request. The principal will review and either approve or deny the request.

GRADING INFORMATION

Montgomery High School uses a numerical grading system based on the 100 point scale.

Grade Range: 0 - 100

Lowest Passing Grade: 60

Highest Grade Allowed: 100

For your convenience, the guidelines for letter grade equivalents are listed below:

A+ = 98-100 B+ = 88 - 89 C+ = 78 - 79 D+ = 68 - 69 F = 0 - 59

A = 93 - 97 B = 83 - 87 C = 73 - 77 D = 63 - 67

A- = 90 - 92 B- = 80 - 82 C- = 70 - 72 D- = 60 - 62

Rounding

Use standard scientific rules of rounding to the nearest whole point for all marking period grades (0.5 will be rounded up for report card only).

Weighted GPA

A weighted GPA is computed to provide information for scholarships and to determine valedictorian, salutatorian, and students graduating with honors. The weighted GPA is determined by adding 5 points to Honors and AP courses.

Class Rank

Montgomery High School does not engage in the automatic calculation and reporting of class rank for students. A student's class rank shall be calculated to determine valedictorian, salutatorian, and students graduating with honors. A student's class rank will only be released to a requesting institution (such as a service academy) or a scholarship provider.

Honor Roll/Principal's Honor Roll

Students qualify for Honor Roll if they are full time students carrying a minimum of 30 credits and all unweighted grades within a marking period are 80 or better. To qualify for the Principal's Honor Roll students must carry a minimum of 30 credits and all unweighted grades within a marking period must be 90 or better.

GRADE POINT AVERAGE

Montgomery High School computes two averages for students. The first computation is an unweighted or “true” average for all courses attempted. The second is a weighted average to determine valedictorian, salutatorian, and honor students.

Example: Unweighted GPA Computation

Course	Grade	Credit	Grade Points
English II Honors	90	5	450
World History	88	5	440
Biology Honors	80	5	400
Physical Education	82	<u>5</u>	<u>410</u>
		20	1700

$1700/20 = 85.00$ Unweighted GPA (rounded to 2 decimal places)

Example: Weighted GPA Computation

Course	Grade	Add'l Points	Total	Credits	Grade Points
English II Honors	90	5	95	5	475
World History	88	0	88	5	440
Biology Honors	80	5	85	5	425
Physical Education	82	0	82	<u>5</u>	<u>410</u>
				20	1750

$1750/20 = 87.50$ Weighted GPA (rounded to 2 decimal places)

The student who has the highest average using the weighted computation after seven semesters is determined to be the valedictorian; the student with the second highest average using the weighted computation after seven semesters is determined to be the salutatorian. After seven semesters, the top ten percent of the class, based on the weighted computation, is deemed to be graduating with honors.

Transfer Students

All transcripts of incoming students are analyzed on an individual basis with appropriate credit and weight assigned based upon the course offerings of MHS. An honors course completed at another high school receives appropriate weight as long as a comparable course was available at MHS. A transfer student must attend MHS for his/her entire junior and senior years to be considered as valedictorian or salutatorian. Transcripts of students entering MHS from a school in another country will be given credit based on the translation of the transcript and equivalency to courses available at MHS and will receive a P (pass)/F (fail) grading. Students entering MHS with credits from an Accredited Online Program will be given the appropriate credit and a P (pass)/F (fail) will appear on their transcript for the grade.

Courses Taken Prior to High School

Any high school level courses taken prior to 9th grade may be used for advancement in a specific subject area or to satisfy a prerequisite. However, only courses taken during the student's high school career will appear on the transcript, be included in the GPA calculation, and count towards graduation requirements. A student is considered to be in 9th grade once they have successfully completed 8th grade.

Grade Level Promotion Requirements

In order for students to be promoted to the next grade level, they must have successfully completed a required amount of credits prior to the beginning of the next school year. These minimums may not meet athletic eligibility requirements. For minimum athletic eligibility requirements please refer to page 7.

9th grade to 10th grade 27.5 credits

10th grade to 11th grade 55.0 credits

11th grade to 12th grade 82.5 credits

GRADING

Full Year Courses

- No grade may be lower than 50 for semester 1 of a full year course.
- The second semester grade and the final examination will reflect the actual grade earned, i.e., there is no minimum grade. A student who has attempted all course requirements will receive a grade no lower than 50 on the transcript.
- Special situation: If a student passes both semesters but has a failing average due to the final exam grade, he/she will receive a 60* (provided that the student took the exam and made a diligent effort to pass). The * contains the notation that “the passing grade was issued despite the student’s failing the exam.”
- Final exam
 - Equals 12 percent of the final grade
 - Averages with the first and second semester grades to determine the final grade.
 - Seniors who have a pre-exam average of 90 or higher are exempt from taking the exam.
 - Any student who cheats on the exam will receive a zero.

Semester Courses

- No grade may be lower than 50 for the first half of the course.
- No grade may be lower than 30 for the second half of the course.
- No grade may be lower than 25 for the final exam, provided that the student took the exam and made a diligent effort to pass.
- Special situation: If a student passes the semester but has a failing average due to the final exam grade, he/she will receive the minimal passing grade of 60 (provided that the student took the exam and made a diligent effort to pass).
- The final exam is equal to 12 percent of the course grade.
- Any student who cheats on the exam will receive a zero.

Communication of Student Progress

All parents are encouraged to create an account to access the Montgomery Township School District Parent Access online portal.

Parents/guardians should check student progress regularly including attendance, missing assignments, and grades. If parents/guardians have questions concerning their child’s academic progress, they should first contact the classroom teacher, and then if necessary, the appropriate department supervisor. For concerns about overall student progress, the parent/guardian should contact their child’s school counselor.

Prerequisites, Course Placement & Waiver Applications

Counselors will guide students into proper placement for English, Math, Social Studies and World Language courses based on established prerequisites. Science placement will be based on diagnostic strategies including previous grade earned, proficiency assessments, level of interest and teacher recommendation. MHS faculty and administrators strongly believe that the prerequisites set forth in the high school's Program of Studies are reasonable guidelines. Whenever prerequisites are not applicable, counselor and teacher recommendation should be adhered to. However, if the student did not meet the expectations that have been established for a course, but would like to challenge themselves beyond the MHS recommendation, a waiver application must be obtained from the students' current subject teacher and submitted through the appropriate department supervisor for approval. In order to maintain balanced class sizes and consistent learning environments, deadlines will be strictly adhered to and level changes, if waiver is approved, will be subject to supervisor approval.

If a student drops the course, the grade they have earned up to that point will be calculated into their grade in the new course. Students will only be permitted to make those changes prior to November 15th.

STEM and STEAM

Montgomery High School offers a wide array of courses allowing students the opportunity to develop both introductory and advanced skills in a variety of career paths:

- Architecture
- Photography
- Graphic Design
- Industrial Materials
- Computer Languages
- Web Design
- Robotics

Some courses are specifically designated in the Program of Studies as either STEM or STEAM. STEM is an acronym for Science, Technology, Engineering, and Math education. STEM is an interdisciplinary and applied approach that is coupled with hands-on, problem-based learning. STEAM, a newer movement widely adopted by institutions, corporations, and individuals, aims to integrate Art and Design in education and place it firmly at the center of STEM.

COURSE CHANGE AND CREDIT INFORMATION

Course Withdrawal

Students are placed in courses after serious discussion among students, parents and counselors. Students are encouraged to develop persistence and resilience in honoring their commitments to course selection by attending and satisfactorily completing the courses in which they enroll.

Students have until April 20th, 2020 to make adjustments to their course requests. After this period of time, changes will only be made when concerns regarding the student's schedule are initiated through the Montgomery High School professional staff. **Requests for discretionary schedule changes will not be considered (e.g., teacher, elective courses, physical education, and early dismissal).** Only changes that are deemed educationally beneficial for the student will be considered and reviewed. Of course, parents and students will be involved in this process before any final decisions are made.

Students must carry a minimum of 3 classes a day (30 credits total) to be considered a full-time student at MHS. Any request to drop a course which would cause the students total credits to fall below the 30 credit minimum will not be permitted without administrative approval.

All course withdrawals after November 15th will result in a record of WP (Withdrawal Passing) or WF (Withdrawal Failing) on the official transcript and report card. Students may not change classes (with the exception of a level change, i.e. Honors to CP, after the class has met for 10 days for a full year course and 5 days for a semester course. This includes elective classes in addition to English semester classes for juniors and seniors.

NOTE: Request to withdraw after Semester 1 will not be permitted without administrative approval (MHS Principal and Director of Student Academic & Counseling Services).

Level Changes

(e.g., Advanced Placement to Honors, Honors to College Preparatory and College Preparatory to General Ed.)

Level changes involving 11th and 12th grade English courses must be made prior to the fifth class meeting in accordance with attendance requirements. Requests for level change after the fifth class meeting will not be granted.

All level changes should be made in consultation with the department supervisor, school counselor, teacher, and parent(s)/guardian(s). It is imperative that all parties reflect carefully on the proposed changes to determine whether they are in the student's best interest; they might have an influence on the overall student schedule.

All level changes occurring after November 15th will result in a record of WP (Withdrawal Passing) or WF (Withdrawal Failing) on the official transcript and report card. The unweighted grade earned at the time of the level change will be transferred to the new course and will be included in the cumulative average.

NCAA

For students who participate in the MHS athletic program, dropping a class may jeopardize a student's eligibility to participate in interscholastic athletics during the next academic year or sports season. Students must confirm to all rules and regulations set forth by the state's governing body for athletics, the New Jersey State Interscholastic Athletic Association.

The NJSIAA bylaws in Section 2E states:

E: Credits

1) To be eligible for athletic competition during the first semester (September 1 to January 31) of the 10th grade or higher, or the second year of attendance in the secondary school or beyond, a pupil must have passed 25% of the credits (30) required by the State of New Jersey for graduation (120) during the immediately preceding academic year.

2) To be eligible for athletic competition during the second semester (February 1 to June 30) of the 9th grade or higher, a pupil must have passed the equivalent of 12 ½ of the credits (15) required by New Jersey for graduation (120) at the close of the preceding semester (January 31). Full year courses shall be equated as one-half of the total credits to be gained for the full year to determine credits passed during the immediately preceding semester.

Incomplete Grades

When a student returns to school after an absence, he/she is responsible for making up all missed assignments. The work should be completed as soon as possible after returning to school. If the absence occurs within the last two weeks of the semester and the work is not completed by the time grades are submitted, an INC (Incomplete) is given as the marking period grade. Students have a maximum of 10 days to submit all work after the end of the marking period. Failure to do so will result in the student receiving no credit for all missing assignments with the potential of failing the semester.

Early Dismissal Privilege

The MHS Early Dismissal privilege is an opportunity for seniors to leave school earlier by one period; provided they continue to meet the required 30 credit minimum. Without prior administrative approval, students with Early Dismissal privileges must leave school grounds at the end of the school day.

Any student who is in danger of not passing a course required for graduation **will** jeopardize this privilege which in turn might result in an additional change in his/her course schedule.

OPTION II GUIDELINES

(Alternative pathways for attaining High School Graduation Credits)

General Statement: Option II establishes alternate pathways for students of Montgomery High School to satisfy graduation requirements and meet the N.J. State Standards in accordance with New Jersey Administrative Code {N.J.A.C. 6A:8-5.1 (a) I ii}. Option II alternative experiences are voluntary. Students may fulfill the requirements for graduation by pursuing credits earned through the traditional classroom environments, alternative learning experiences availed through Option II or through a combination of both programs.

Option II permits students to engage in a variety of alternative learning experiences which are stimulating and intellectually challenging, enabling them to fulfill or exceed expectations set forth by the academic department's Core Curriculum Content Standards. Students may take part in Option II alternatives by participating in the following: student exchange programs, theme-based programs, and accredited college coursework, concurrent enrollment at colleges and universities, on-line and distance learning opportunities.

Transportation, personal safety and well-being, specialized equipment and any and all costs not otherwise provided by Montgomery High School will be the responsibility of the student and/or parent/guardian.

Rationale for Option II:

1. Credit Recovery – *To make up a subject failed during regular school session:*
 - Credits are awarded after the recovery course and the respective MHS proficiency assessment have been successfully completed. Successful completion requires the minimum passing grade.
 - The course must have a minimum of 60 clock hours to recover five credits.
 - (PCR) pass credit recovery or (F) fail will be recorded on the student's transcript and a number grade of 60 will factor into the G.P.A. for a passing grade of (PCR).
 - It is the student's responsibility to have appropriate grade reports forwarded to the Guidance Office upon completion of the external course.
2. Original Credit – *To earn credits outside of MHS for academic advancement or meet graduation requirements:*
 - Credits are awarded after the course/program and the respective MHS proficiency assessment have been successfully completed. Successful completion requires the minimum passing grade. Option II courses will only be included on the student's transcript after the course and the assessment are complete.
 - A (P) pass or (F) fail will be recorded on the student's transcript and will not affect G.P.A. If the course is taken at an accredited college or university, a letter grade will be recorded on the student's transcript; this will not be calculated into the G.P.A.
 - A copy of the transcript from the institution where an alternate class was taken must be provided to the Guidance Office and will be sent with the MHS transcript.
3. To Meet Grade Prerequisites – *To improve grade for the purpose of meeting prerequisites ONLY.*
 - For the purpose of meeting grade prerequisites, the summer school course must be completed and no grade will be recorded on the transcript. A proficiency assessment will be required and the assessment grade will determine placement.

Application for Option II

Montgomery High School students are required to complete an application which must include an attached course syllabus/curriculum. The completed application must be given to the Montgomery High School Guidance Department and approved by the content area supervisor and school principal (or designee) **PRIOR** to enrolling in a course. The course must be offered by an accredited institution and must meet or exceed N.J. State Standards. Such courses may not take the place of a course that is a required academic course (i.e. English 9-12, U.S. History I & II, etc.) for graduation; however, it may be taken for advancement (i.e. in math courses) only when approved by the content area supervisor. **Any course taken by an MHS student without the prior approval of administration will NOT be granted course credits.**

Deadlines

For summer courses, Option II applications must be submitted by May 15th and course must be completed by August 3rd. For the fall semester, Option II applications must be submitted by September 11th and course must be completed by January 15th. For the spring semester, Option II applications must be submitted by January 15th and the course must be completed by June 1st. For full year courses, Option II applications must be submitted by September 25th and the course must be completed by June 1st.

Any Option II course not completed by the course deadline will not be eligible for course credit.

Proficiency Assessments

Proficiency assessments are used for placement purposes and may also be required for Option II credits to be received. For math courses students must show a minimum proficiency on the designated assessment for the course taken. The grade earned on the assessment will determine placement in the following course or the student's ability to advance to the next course. These assessments will be administered by the MHS department supervisor or designee. These assessments are aligned with N.J. State Standards. For other courses students should be prepared to submit a portfolio of work completed, if requested by the department supervisor. A (P) pass or (F) fail will be recorded on the student's transcript *after the course is completed.*

SOMERSET COUNTY VOCATIONAL TECHNICAL SCHOOL – SHARED TIME

The Somerset County Vocational-Technical High School offers a shared-time program for students who want to learn a technical trade but wants to complete their academic requirements in their local high school. Students who select this vocational shared-time option spend a portion of each day at Vocational-Technical High School and the remainder of the day at Montgomery High School. Transportation is provided at no cost both to and from the Vocational School. Upon graduation, students receive a M.H.S. diploma. (See your counselor for a description of the Vocational offerings at Somerset County Vocational-Technical School.)

Students who are interested in attending Somerset County Vocational-Technical High School are to inform their counselor by January of the prior year. It is the responsibility of the Parent/Student to check the Vo-Tech application for specific program deadlines. Students and their families are encouraged to arrange on their own a tour of Somerset County Vocational-Technical High School before requesting to attend.

COURSE DESCRIPTIONS

ENGLISH

AP and HONORS COURSE EXPECTATIONS - ALL LEVELS: PLEASE READ CAREFULLY

Honors level courses offered in grades 9-12 and AP level courses offered in grades 11 and 12 are designed for students who wish to challenge themselves academically and desire a rigorous study of literature, language and composition. It is important to carefully consider a student's past performance in English when selecting an appropriate course of study. AP and Honors courses require students to complete additional coursework, read avidly and widely, and maintain a higher level of independent accountability than non-weighted courses. The Language Arts department offers assistance in placement decisions through teacher recommendations, diagnostic assessments describing cognitive readiness, and core competency review materials. In cases where students select a course level for which they have not met the prerequisites, the student and parent/guardian will be required to complete a waiver application that must be approved by the department supervisor pending review. It must also be understood that if a student takes an Honors or AP English course and decides to drop it, the un-weighted grade will transfer to his/her new College Prep or Honors class. Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

COURSE OPTIONS FOR GRADE 9

11000 English Literature and Composition 9 **5 credits**

This is a full year, comprehensive survey of the elements of literature, language, and composition. The aim of this course is to improve students' control of the skills of communication, reading, writing (narrative writing, argumentative writing) speaking, listening and viewing – and to help them appreciate a wide selection of readings that increase students' understanding and appreciation of literature. Students are expected to write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence (N.J. State Standards). Students are expected to write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences (N.J. State Standards). Additionally, students will conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on

the subject, demonstrating understanding of the subject under investigation.

PREREQUISITE: Successful completion of 8th Grade Language Arts

11500 English Literature and Composition 9 **(Honors) 5 credits**

PREREQUISITE: 93% average for Marking Periods 1 & 2 in 8th grade Language Arts

COURSE OPTIONS FOR GRADE 10

12000 English Literature and Composition 10 **5 credits**

This full year course continues to explore the elements of literature, language, and composition begun in 9th grade. Examples of the major literary genres are studied along with an emphasis on the development of the expository essay. Students are expected to write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence (N.J. State Standards). Students are expected to write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences (N.J. State Standards). Additionally, students will conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

PREREQUISITE: Successful completion of English Literature & Composition 9

12500 English Literature & Composition 10 **(Honors) 5 credits**

PREREQUISITE: Successful completion of English Literature and Composition 9 Honors OR a current average of 90% in English Literature and Composition 9

COURSE OPTIONS FOR GRADES 11 AND 12

Students electing to take either **COLLEGE PREP OR HONORS ENGLISH** in their Junior and/or Senior year must choose a **combination of two (2) semester courses** for the year to satisfy their graduation requirement for English. These thematically organized courses (**detailed course descriptions included below**) are designed to continue the development of critical reading, writing and thinking skills through engagement with a variety of texts. Students in all classes will develop reasoning and evidence collection/research skills that are essential for success in college, career and life. All courses are offered at both the College Prep and Honors level; please see **AP AND HONORS COURSE**

EXPECTATIONS described above for assistance with appropriate level selection.

Level changes involving 11th and 12th grade English semester courses must be made prior to the fifth class meeting in accordance with attendance requirements. Requests for level change after the fifth class meeting will not be granted.

COURSE DESCRIPTIONS FOR GRADE 11

FALL: And Justice for All?

What are the consequences of injustice in society? What responsibility does an individual have in combating injustice? This is a semester-long course designed to help students answer these questions as they continue to develop their skills as critical readers and writers by actively engaging with a variety of texts. Juniors read thematic texts, centering around the concept of injustice, and they continue to improve skills in reading, writing, listening, viewing, and oral communication. Students write in a variety of modes of discourse in order to explore the limitations of justice in society.

FALL: Heroes, Villains and Monsters

This course will explore the concepts and definitions of heroes, villains, monsters, and everything in between. The course will analyze the characteristics of a monster, the shades of good and evil, and how society's point of view affects our perceptions of those around us. Through analyzing texts from different cultures and critiquing film, students will leave the course with a deeper understanding of the factors that influence how we define heroes, villains, and monsters.

SPRING: Is this Really Happening?

This course will explore the fine line between the concepts of reality and illusion. The course will analyze the relationship between reality and illusion, how truth can be found through telling stories, and how illusion can sometimes serve as a coping device during hardships. Through analyzing texts from around the world and critiquing film, the students will leave the course with a comprehensive understanding of the functions both reality and fantasy serve in the world around us.

SPRING: Not All Those Who Wander Are Lost

From Tolkien to Homer, from Holden to Walden, making a journey is more than just a physical act. In this course, students will explore various literary journeys, analyzing character growth through both physical and emotional experiences. Students will recognize their own personal journey within the diverse texts of this course. Both narrative and analytical writing will be emphasized as students establish connections between

fictional explorations and the realities of their own world. By the end of the course, students will know that the experience of a journey is sometimes more satisfying than the destination. As J.R.R. Tolkien reminds us, "little by little, one travels far."

GRADE 11: COURSE COMBINATION OPTIONS

13001 And Justice for All? & Not All Those Who Wander Are Lost 5 credits

13501 And Justice for All? & Not All Those Who Wander Are Lost (Honors) 5 credits

PREREQUISITE: Successful completion of English Literature and Composition 10 Honors OR a current average of 90% in English Literature and Composition 10

13002 Heroes, Villains and Monsters & Is this Really Happening? 5 credits

13502 Heroes, Villains and Monsters (H) & Is this Really Happening? (Honors) 5 credits

PREREQUISITE: Successful completion of English Literature and Composition 10 Honors OR a current average of 90% in English Literature and Composition 10

13003 And Justice for All? & Is this Really Happening? 5 credits

13503 And Justice for All? & Is this Really Happening? (Honors) 5 credits

PREREQUISITE: Successful completion of English Literature and Composition 10 Honors OR a current average of 90% in English Literature and Composition 10

13004 Heroes, Villains and Monsters & Not All Those Who Wander Are Lost 5 credits

13504 Heroes, Villains and Monsters & Not All Those Who Wander Are Lost (Honors) 5 credits

PREREQUISITE: Successful completion of English Literature and Composition 10 Honors OR a current average of 90% in English Literature and Composition 10

COURSE DESCRIPTIONS FOR GRADE 12

FALL: It's All Relative

How each of us defines family is uniquely personal, and while one view of family might be comfortably traditional and another may be wildly unconventional, one truth remains constant: family is more than blood. This course is designed to help students think about the family unit, not simply as roles in a household, but as a

unique group of people to whom we are somehow connected. Through exploration of thematic texts centering on different types of families, students will examine how personal connections are created, how the bonds we make affect us as individuals in creating our own identities, and how our relationships are strengthened and weakened by our personal values, interactions, and societal views.

FALL: Watch Your Back!

This course will explore why and how characters are driven by power, greed and revenge. We will ask ourselves, "when does ambition drive characters to go too far to achieve their goals?" Consequently, we will also analyze when and how these power-hungry actions inspire others to take revenge. Finally, we will question whether or not revenge and vengeance provide satisfaction, and if redemption can every truly be achieved. The texts we will study will take us on a thrilling, psychological and suspenseful journey through the darker side of humanity.

SPRING: From Beyond the Boundaries

What does it mean to be "normal"? How does breaking free from normalcy allow a person to find his/her identity? Students in this course will explore the concept of defying social norms and how doing so not only helps us become the unique individuals we are meant to be but brings about change within society as well. "It is our choices that show us what we truly are far more than our abilities." - Albus Dumbledore

SPRING: Happily Ever After?

Found in cultures around the world, traditional literature such as fairy tales and folk tales have continued to thrive because of their universality and their honest reflection of societal norms. These tales teach right from wrong, they expose cultural and social fears, and they model proper narrative form. Students in this course will examine fairy tales, folk tales, mythology and legends to explore the societal implications of these types of stories and their continued relevance in modern society. The stories might be short, but the magic is endless!

GRADE 12: COURSE COMBINATION OPTIONS

14001 It's All Relative & From Beyond the Boundaries **5 credits**

14501 It's All Relative & From Beyond the Boundaries (Honors) **5 credits**

PREREQUISITE: Successful completion of an Honors level course combination in grade 11 OR an average of 90% in a College Prep level course combination for grade 11

14002 Watch Your Back! & Happily Ever After? **5 credits**

14502 Watch Your Back! & Happily Ever After? (Honors) **5 credits**

PREREQUISITE: Successful completion of an Honors level course combination in grade 11 OR an average of 90% in a College Prep level course combination for grade 11

AP COURSES FOR GRADES 11 AND 12

13900 AP Language and Composition **5 credits**

The AP course in English Language and Composition engages students in becoming skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts and in becoming skilled writers who compose for a variety of purposes. Selections from American Literature will also be studied. Students in this course will be expected to take the AP Language and Composition examination in May of the year in which they are enrolled in this course.

PREREQUISITE FOR JUNIORS: A final grade of 85% in English Literature & Composition 10 Honors OR a final grade of 90% in English Literature & Composition 10

PREREQUISITE FOR SENIORS: A final grade of 85% in an honors level course combination in grade 11 OR a final grade of 90% in a college prep level course combination in grade 11 OR successful completion of AP Literature & Composition

14900 AP Literature and Composition **5 credits**

The AP course in English Literature and Composition is designed to engage students in learning how to understand and evaluate works of fiction, poetry, and drama from various genres, periods, and cultures. The course focuses on critical exposition and analysis of challenging literature. Students in this course will be expected to take the AP Literature and Composition examination in May of the year in which they are enrolled in this course.

PREREQUISITE FOR JUNIORS: A final grade of 85% in English Literature & Composition 10 Honors OR a final grade of 90% in English Literature & Composition 10

PREREQUISITE FOR SENIORS: A final grade of 85% in an honors level courses in grade 11 OR a final grade of 90% in a college prep level course in grade 11 OR successful completion of AP Language & Composition

15100 Creative Writing Seminar I (s) 2.5 credits

This is a one-semester course in which students explore writing as art. Students will read, analyze, and create works of fiction, non-fiction, drama, and poetry. Throughout the semester, the student will compile a portfolio of his/her best work. The course culminates in presentations of original manuscripts of poetry, prose, and/or criticism that demonstrate the student's growth. This course provides the time, space, materials, instruction, and skills necessary to pursue meaningful creative writing to fulfill academic and/or intrinsic goals.

PREREQUISITE: None

15200 Creative Writing Seminar II (s) 2.5 credits

In this one-semester course, students further develop as writers do when they read, analyze, and create works of fiction, nonfiction, poetry and drama. In Creative Writing II, students are required to design a focus or theme for their portfolios and submit their work to various publications. Taking both Creative Writing I and Creative Writing II during the same year is recommended but not required.

PREREQUISITE: Successful completion of Creative Writing I

18100 Expository Writing Workshop (Semester 1)

2.5 credits

18200 Expository Writing Workshop (Semester 2)

2.5 credits

The purpose of this one-semester course is to provide an intensive writing experience in a workshop environment. The emphasis will be on expository writing including essays, research reports, and transactional writing. Students will receive instruction in the forms and conventions of expository writing and will use the writing process to create fully revised and edited products. Types of writing to be explored will include narrative, descriptive and persuasive. Assessment will be based on, but not limited to rubrics adapted from the PARCC/N.J. State Standards Scoring Rubric.

PREREQUISITE: None

SOCIAL STUDIES

HONORS/ADVANCED PLACEMENT COURSE

EXPECTATIONS: PLEASE READ CAREFULLY

The AP and Honors courses are designed for students who wish to challenge themselves academically and desire a rigorous course of study. It is important to carefully consider a student's past performance in Social Studies when selecting an appropriate course of study. AP and Honors courses require students to complete additional coursework, read avidly, and widely, and maintain a higher level of independent accountability than non-weighted courses. The Social Studies department offers assistance in placement decisions through teacher recommendations, diagnostic assessments describing cognitive readiness and core competency review materials. It is recommended that students who wish to challenge themselves at the honors level have earned a 90 or better in the College Prep class taken the year prior. In cases where students select a course level that was not recommended, the student and parent/guardian will be required to complete a waiver application. It must also be understood that if a student takes an honors Social Studies course and decides to drop it, the unweighted grade will transfer to his/her new College Prep class. Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

21000 World Studies **5 credits**

The World Studies course is a full-year course intended for all freshmen. It will fulfill the New Jersey graduation requirement of a one-year study of World History. The course begins with the Italian Renaissance and concludes with an overview of the issues of the 21st century.

PREREQUISITE: None

21500 World Studies (Honors) **5 credits**

The World Studies Honors course is a full-year course intended for freshmen who want to explore the course curriculum in more depth. This course will stress critical reading and analytical thinking and writing and encourage students to further develop as independent learners. It will fulfill the New Jersey graduation requirement of a one-year study of World History. The course begins with the Italian Renaissance and concludes with an overview of the issues of the 21st century.

PREREQUISITES: 1) 93% average for Marking Periods 1 & 2 in 8th grade Social Studies; 2) 93% average for Marking Periods 1 & 2 in 8th grade Language Arts

22000 U.S. History I **5 credits**

This is the first course of a two-year sequence that meets the state and local requirements for graduation. Through extensive use of primary source material this course investigates the American experience from Colonization to the early 20th Century. Featured events include the Foundations and Development of our Nation, the Civil War, the Industrial Revolution and the Progressive Era.

PREREQUISITE: Successful completion of World Studies or World Studies Honors

22500 US History I (Honors) **5 credits**

This course is a study of the American experience from colonial times through the Age of Industry and serves as a preparation for the more rigorous AP U.S. History II class. Students will be introduced to the application of higher level analytical skills in both written expression and class discussion/debate. Students with a passion for American history and written analysis are encouraged to take the course. The course meets one of the two years of U.S. History required by the state for graduation.

PREREQUISITE: Students must meet the following minimum requirements: 1) 90% in World Studies or 85% in World Studies Honors 2) 85% in English Literature and Composition 9 Honors or 90% in English Literature and Composition 9

23000 U.S. History II **5 credits**

This is the second course of a two year sequence that meets the state and local requirements for graduation. Through extensive use of primary source material this course investigates the American experience during the past century. Featured events include World War I, World War II, the Civil and Women's Rights Movements, the Vietnam and Persian Gulf Wars, and the wars in Iraq & Afghanistan, as well as trends in popular culture. Students also focus on post WWII leaders and events to gain an understanding of present day issues.

PREREQUISITE: Successful completion of U.S. History I or AP US History I

23900 AP U.S. History II **5 credits**

This course serves as the second year of the AP US History program with a focus on the American experience from the Age of the City through the modern era and is conducted in a similar fashion to a college seminar class. Students enrolled in the course are expected to use the analytical skills learned in part I and apply them to a greater degree and intensity in part II including extensive discussion and debate skills. All of this serves as preparation for taking the AP U.S. History Exam in May along with additional AP/honors courses in the senior year and beyond.

PREREQUISITE: A final grade of 70% or better in AP U.S. History I (part 1 of 2)

23500 The U.S. in a Modern World (Honors)

5 credits

This rigorous year-long honors elective course will examine the shifting role of the U.S. on the global stage from the ending of the Cold War and into the post-9/11 world. This history will be analyzed with particular focus on the newsworthy events that have happened during the students' lives and linking them to current events today. Through research, primary source analysis, discussion, and presentations, students will discover how and why recent events happened while analyzing their local and global impact, and how those events shape the United States' role in the modern world. (Note: Summer assignment required)

PREREQUISITE: Students must have completed the two-year U.S. History requirement with a minimum final grade of 85% in U.S. II or an 80% in AP U.S. II.

24900 AP Government and Politics

5 credits

By utilizing student-centered discussions, debates, and cooperative learning activities, this college level year-long course teaches students to think critically about the government and politics of the United States in preparation for the AP exam. Students analyze foundational documents, Supreme Court decisions, and other writing to enhance their comprehension of politics. Current political events and other provocative topics are explored through research, analytical writing, and discussions. This course closely examines Congress, the White House and the Supreme Court. Additional studies focus on civil liberties, civil rights, campaigns, elections and a variety of public policies. There are also several research projects focused on civics topics selected by students.

PREREQUISITE: This course is an elective open to students in grades 11 and 12 who have earned an 85% or higher in their most recent (US I or US II) History course OR 80% or higher in their most recent AP US History course

25900 AP Art History

5 credits

AP Art History is the study of the past through works of art and architecture. In this class you will learn about various cultures, societies, and civilizations through the art and architecture that they produced. AP Art History also focuses on the artists and architects responsible for creating specific works of art and styles. Beginning with pre-historic art and ending with contemporary and modern art, students will utilize critical thinking and observational skills to understand, discuss, and make connections between 250 works of art selected by the College Board. A field trip to the Metropolitan Museum of Art also allows students to see specific styles and works of art that are examined in the class. Assessments emulate and reflect past AP exams to provide students

with a realistic experience of assessment methods prior to taking the exam. This course compliments science and math courses and aligns with STEAM goals. Consider taking this course if you are interested in history, architecture, learning about different societies and cultures, or if you are looking to improve your analytic and observational skillset.

PREREQUISITE: This course is an elective open to students in grades 11 and 12 who have earned an 85% or higher in their most recent (US I or US II) history course OR 80% or higher in their most recent AP US History course

26900 AP Economics

5 credits

It is important to note that AP Economics is not a Business or Finance course. The purpose of the AP Economics course is to provide students with a thorough understanding of the principles and applications of microeconomics and macroeconomics. This rigorous college level class will examine topics including (but not limited to): scarcity, cost, marginal analysis, supply and demand, the operations of free markets, externalities, distribution of income, government fiscal and monetary policy, aggregate analysis, the Federal Reserve System, inflation and unemployment, game theory, international trade and the U.S. and world economies. Students taking this course will be prepared for the national AP Microeconomics and AP Macroeconomics Exams. It fulfills the graduation requirement for "financial literacy."

PREREQUISITE: This course is an elective open to students in grades 11 and 12 who have earned 1) an 85% or higher in their most recent (US I or US II) History course OR 80% or higher in their most recent AP US History course, 2) at least an 85% average in CP Algebra II, PreCalculus, or Calculus or an 80% in Algebra II Honors, PreCalculus Honors, or AP Calculus

27100 Sociology (s)

2.5 credits

Sociology is the scientific study of society, social institutions, social relationships, and human group behavior. Sociology looks at how groups, societies and social conditions shape the way people act. It examines both people's and groups' personalities and the environment in which situations occur. This course is offered to students in grades 11 and 12. It is designed to give students an opportunity to explore their own behavior in groups, and study topics that directly affect them in the real world. Some of the topics studied are groups, group behavior, socialization through the stages of life (infancy, childhood, adolescence, adulthood, and old age), human and group behavior, social norms, morals and values, gender differences, marriage and divorce, cult behavior, and violence in society. The students will participate in an active learning

environment that enables them to apply their life experiences to the topics of study. Sociology is a fun and active course that is extremely beneficial to the social development of students.

PREREQUISITE: This elective is open to students in grades 11 and 12

27200 Elements of Human Behavior (s) 2.5 credits

Elements of Human Behavior, is a semester course offered to students in grades 11 and 12. The course is designed to give students an opportunity to explore many interesting topics in an active learning environment. Some of the topics studied include different approaches to psychology, emotion, personality, motivation, memory, sensation and perception, psychological research, stress, and mental disorders. The students will participate in discussions and experiments testing popular theories and applying these theories to real life experiences. Elements of Human Behavior, is a fun and active course that is extremely beneficial to the social development of students.

PREREQUISITE: This elective is open to students in grades 10, 11 and 12

27300 Crime and Punishment (s) 2.5 credits

Crime and Punishment provides a comprehensive overview of the American justice system covering criminal law, procedure and criminology. Students will actively participate in such topics as: current crime issues, gangs, organized crime, police conduct, courts and case process, prison life, juvenile delinquency and much more. Activities will include field trips, guest speakers, debates, and round-table discussions. Students will explore how crime and punishment impacts their lives. This course will also expose students to various careers related to criminal justice.

PREREQUISITE: This elective is open to students in grades 11 and 12

**27400 American History & Culture through Film (s)
2.5 credits**

American Film and Culture offers students of all academic levels an alternative way to view how and why America changed during the 20th century. The films selected for this course will be chosen for their specific message, which typified the time period in which they were made. Through film analysis, students will gain insight into the social climate that existed during historical events of the 20th century.

PREREQUISITE: This elective is open to students in grades 10, 11 and 12

MATHEMATICS

Math Prerequisites

Montgomery Township School District is committed to providing a solid foundation for its students in the area of mathematics. Because math skills are sequential, it is essential that prerequisite skills be mastered before complex courses are taken. The prerequisites are firmly based on the proficiency a student demonstrates over the entire year of work in mathematics preceding each course. Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

The Mathematics Proficiency Tests

The Mathematics Proficiency Tests are used to assess the proficiency of students at various stages in their mathematical education. These tests reflect questions given on Chapter/Unit tests, Quarterly Exams, and/or Final Exams for the various courses offered by the department. The following students **must participate** in the testing process:

- New students who have met the honors course requirements in another school and who wish to continue in honors at MHS
- New students who are entering MHS as a freshman.
- New students whose placement needs to be determined
- Students who wish to advance by means of an approved summer or online external course

Please note that summer and online courses do not cover the curriculum in as much depth as a full-year course. Therefore, summer or online courses are good for enrichment or review; they are not recommended to be used as a replacement for a full year math course.

30100 Math Connections I 2.5 credits

The focus of this course is to enable students to fulfill the state requirement of targeted intervention in mathematics to help them accelerate their learning. The content clusters covered in this course are: 1) Ratios and Proportional Relationships, 2) The Number System, 3) Expressions and Equations, 4) Geometry, 5) Statistics and Probability. Skills and strategies for standardized test taking are developed. Problem solving with mathematical concepts is practiced and expanded upon in the area of Functions and their real life application.

**30400 Math Connections IV - Part 1 2.5 credits
Alternative High School Assessment**

This course is required to students who did not pass the math section of the state assessment for graduation. The focus of the course will be differentiated according to the students' needs. It is designed to help students develop proficiency in the course content that is standards aligned they did not previously demonstrate proficiency on for graduation requirements. The application of mathematical concepts through problem solving will be emphasized and the techniques necessary to answer application questions in mathematics at the various DOK levels and Type 1, 2, 3, assessment levels. Calculators will be used as a tool to help students develop confidence in problem solving.

**30500 Math Connections IV - Part 2 2.5 credits
Alternative High School Assessment**

This course would be a sequential course to Part 1 if Proficiency is still in question. The focus of this course is to enable students to fulfill the New Jersey state requirement in math for graduation by continuing to complete Assessment Tasks on the applicable content per the students' need. After successful completion, the course offers the study of financial algebra in banking and independent living. A scientific calculator is required.

31200 Algebra I 5 credits

Algebra I is the first course in the college preparatory program in mathematics. Emphasis is placed upon the development and understanding of the real number system and the basic structure of Algebra. Also, the course helps students develop an appreciation for logical problem-solving and deductive reasoning as well as precision in the communication of mathematical ideas and its context to real world. A scientific calculator is required.

PREREQUISITE: Successful completion of Algebra I, Part 1

31250 Algebra I with Lab 6 credits

Algebra I is the first course in the college preparatory program in mathematics. This course differs from the

Algebra I non Lab class by providing a half of block more time devoted to Function comprehension, number properties and Linear Equations. It then completes the development and understanding of the real number system and the basic structure of Algebra. Logical problem solving, deductive reasoning and precise communication of mathematical ideas are expanded upon as per the State Learning Standards. A scientific calculator is required.

PREREQUISITE: Successful completion of Pre-Algebra

32200 Geometry 5 credits

Geometry combines the essential elements of plane geometry and the basics of solid geometry. Strong emphasis is placed on deductive reasoning and writing original proofs. In addition, the student is given the opportunity to develop powers of spatial visualization, strengthen basic algebraic skills, and learn to use precise and clear mathematical language. A strong background in Algebra I is required from the beginning of the course. A scientific calculator is required.

PREREQUISITE: Successful completion of Algebra 1

32250 Geometry with Lab 6 credits

Geometry combines the essential elements of plane geometry and the basics of solid geometry. Deductive reasoning, logic in proof writing and physical constructions are emphasized. Students will develop spatial visualization, precision in measurement, and establish language for geometric figures and their properties and characteristics while strengthening algebraic skills.

PREREQUISITE: Successful completion of Algebra I, priority is given to Algebra I Lab students

32500 Geometry (Honors) 5 credits

This course is designed for students who want a more challenging approach to geometry and who plan on taking additional mathematics courses in college. It combines the essential elements of plane geometry and the basics of solid geometry. Strong emphasis is placed on deductive reasoning and solving complex original proofs. Additional topics include introductory trigonometry, coordinate geometry and transformations. A strong background in Honors Algebra I will be required from the beginning of the course, and students will be expected to understand the concepts taught in class, as well as to transfer them to novel applications and problem solving situations. A scientific calculator is required.

PREREQUISITE: 85% in Algebra I Honors or 95% in Algebra I taken over a school year

33101 Algebraic Functions and Analysis 5 credits

This course is offered as the third year math course that reviews terminology, concepts, skills and applications of Algebra I by means of a critical examination of the real number system. It furthers the development of algebraic concepts with students factoring, simplifying and solving rational expressions and equations, using powers, roots, and radicals. The units of study are Quadratics Functions, Polynomial Functions, Rational Exponents/Radical Functions, Exponential Functions and Logarithmic Functions. This course is offered to juniors and seniors. Students enrolled in this course intend to enroll in Applied Algebraic Extensions.

PREREQUISITE: Successful completion of Algebra I and Geometry

33102 Applied Algebraic Extensions 5 credits

This course is the sequential course to Algebraic Functions & Analysis. It continues the review of Algebraic concepts, skills, terminology and applications. It furthers the development of sequences, series, permutations, combinations, probability, statistics, non-linear functions and an introduction to Trigonometry. The units of study are Rational Functions, Data Analysis and Statistics, Counting through Sequences and Series and Trigonometric Functions. Throughout the course, students will use technology as a tool for processing data, performing calculations, and exploring concepts for function comprehension. This course is offered to seniors.

PREREQUISITE: Successful completion of Algebraic Functions & Analysis

33200 Algebra II 5 credits

Algebra II is the third course in the regular college preparatory program in mathematics. The course reviews basic terminology, concepts, skills, and applications of Algebra I by means of a critical examination of the real number system. Algebra II furthers the development of working with Algebra I concepts with new major topics expanding the students' knowledge of Algebra and preparing them for higher level mathematics courses. These Major topics include: simplifying and solving rational expressions and equations; solving and graphing non-linear functions; working with powers, roots, and radicals; sequences, series, probability/statistics, applications of new functions and an introduction to trigonometry. Throughout the course, students use scientific and graphing calculators as a tool for processing data, performing calculations, and exploring. Scientific and graphing calculators are required.

PREREQUISITE: 70% in Algebra I and 70% in Geometry

33500 Algebra II (Honors) 5 credits

Algebra II Honors is designed for students who want a more challenging approach to Algebra II and who plan on taking additional honors mathematics courses in the future. The students study the structure of the real and complex number systems, develop the concept of systems of equations in two and three variables, determinants, polynomial equations and functions, rational expressions, sequences and series, probability/statistics, exponential equations, logarithms, and trigonometry. A strong background in Honors Algebra I and Honors Geometry will be required from the beginning of the course, and students will be expected to understand the concepts taught in class, as well as to transfer them to novel applications and problem solving situations. Scientific and graphing calculators are required.

PREREQUISITE: 85% in Geometry-Honors or 95% in Geometry AND 85% in Algebra I-Honors or 95% in Algebra I

34100 Algebra III 5 credits

This course is offered as the fourth year course in a four-year sequence that provides students with a modified version of the traditional Algebra I, Geometry, Algebra II, and Advanced Algebra/Trigonometry course sequence. The major part of the course strengthens Algebra skills and concepts. Emphasis is on solving equations and problem solving. Functions studied include polynomial, rational, logarithmic and exponential. Additionally, students start exploration of Trigonometry and the Unit Circle. A graphing calculator is required.

PREREQUISITE: Successful completion Algebra II

34200 Advanced Algebra and Trigonometry 5 credits

This course is designed for those students pursuing a four-year college program, who need additional development in Algebra mechanics. The first part of this course further develops those Algebra II skills and concepts. Emphasis is on problem solving. Functions studied include polynomial, rational, exponential, and logarithmic. The second half of the year includes a complete course in Trigonometry. A working knowledge of College Prep level Algebra II is required from the beginning of the course. Scientific and graphing calculators are required.

PREREQUISITE: 70% in Algebra II

35000 PreCalculus **5 credits**

This college preparatory course covers all the fundamental topics that prepare students for calculus. Emphasis is on problem solving and the study of relations, functions, equation solving, and graphing. The functions studied include polynomial, conics, rational, exponential, logarithmic, trigonometric, and inverse functions. Upon entering this course, students must have a strong working knowledge of the mechanics of Algebra II, and be able to grasp the more theoretical concepts that form the foundation for calculus. Scientific and graphing calculators are required.

PREREQUISITE: 80% in Algebra II or 75% in Advanced Algebra and Trigonometry or 65% in Algebra II-Honors

35500 PreCalculus (Honors) **5 credits**

This course is a full year PreCalculus course, which presents an in-depth examination of analytic trigonometry, trigonometric functions, exponential and logarithmic functions, polynomial and rational functions, and introduction to limits. The intent is to study and apply advanced mathematical topics while developing the student's abstract and critical thinking skills. A strong background in Honors Algebra II will be required from the beginning of the course, and students will be expected to understand the concepts taught in class, as well as to transfer them to novel applications and problem solving situations. Scientific and graphing calculators are required.

PREREQUISITE: 85% in Algebra II-Honors or 95% in Algebra II

36000 Calculus **5 credits**

The college prep level calculus course provides students with an opportunity to develop a conceptual understanding of calculus and its applications. The course emphasizes a multi-representational approach to calculus with concepts, results, and problems being expressed geometrically, analytically, verbally and numerically. The unifying themes of the course are limits, differentiation, integration and real world applications of these concepts. Graphing calculators and other technology are used to reinforce mathematical relationships, to confirm written work, to implement experimentation, and to assist in interpreting results. A strong background in PreCalculus topics will be required from the beginning of the course. Scientific and graphing calculators are required.

PREREQUISITE: 80% in PreCalculus or completion of PreCalculus-Honors

36910 AP Calculus AB **5 credits**

This course is essentially Calculus Advanced Placement AB as described in the course outline published by the

College Entrance Examination Board. It covers limits, derivatives, and applications of both algebraic and transcendental functions as well as methods and applications of integration. The approach used is that of combining the essentials of the theory with practical applications. A strong background in Honors PreCalculus will be required from the beginning of the course, and students will be expected to understand the concepts taught in class, as well as to transfer them to novel applications and problem solving situations. This course is equivalent to a 1st semester college calculus course. Graphing calculators are required.

PREREQUISITE: 85% in PreCalculus-Honors or 95% in PreCalculus OR 80% in Calculus taken over a full school year

36920 AP Calculus C **5 credits**

Taught as a continuation of Calculus AB, this course covers additional techniques of integration, polar coordinates, series, applications of integrals, parametric graphing and differential equations. The emphasis is on theory and problem-solving techniques. A strong background in AP Calculus AB will be required from the beginning of the course, and students will be expected to understand the concepts taught in class, as well as to transfer them to novel applications and problem solving situations. This course is equivalent to a 2nd semester college calculus course. Graphing calculators are required.

PREREQUISITE: 80% in AP Calculus-AB, taken over a full school year

36930 AP Calculus BC **5 credits**

This course is essentially the College Board Calculus BC Curriculum. Students will master material covering two semesters of a college calculus program. Students selected to take this course may elect to take an AP test in math with the possibility of earning one or two semesters' credit at colleges and universities that participate in the College Board program. The course outline is the combination of the Calculus AB description and Calculus C listed above. Students will be expected to understand the concepts taught in class as well as transfer them to novel application and problem solving situations. Graphing calculators are required.

PREREQUISITE: Open to students in grades 11 and 12 with PreCalculus-Honors average over 94% and teacher recommendation

38000 Discrete Mathematics **5 credits**

Discrete mathematics addresses topics not covered or addressed only lightly in traditional math courses. It is an introduction into areas of mathematics that most students have never thought of before. In this course, the topics have a step-by-step nature rather than a

continuous one. This course stresses the connection between contemporary math and the modern society. Students are exposed to problem solving experiences in some or all of the following areas: decision-making in a democracy (election theory), graphs and graph theory (networking), coding information, logic and probability, game theory, and mathematical induction. These topics are often found in a standard mathematics course at the college level for the non-mathematics majors. A course in discrete mathematics is also effective preparation for applied combinatorics and graph theory courses offered as electives for mathematics and science majors at the college level. A working knowledge of Algebra II will be required from the beginning of this course. Graphing calculators are required.

PREREQUISITE: Successful completion of Algebra II

37000 Statistics **5 credits**

This course is an introductory, non-calculus based study of statistics designed as an elective math course for Juniors and Seniors only. Students are introduced to major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: Exploring Data, Planning a Study, Anticipating Patterns, and Statistical Inferences. This course would prepare students for AP Statistics or the college course equivalent. A good working knowledge of Algebra II will be required from the beginning of the course. Graphing calculators are required.

PREREQUISITE: 70% in Algebra II

37900 AP Statistics **5 credits**

AP Statistics is an Advanced Placement course, which is equivalent to a one-semester introductory, non-calculus based college course in statistics. It is an elective math course for Juniors and Seniors only. It introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: Exploring Data, Planning a Study, Anticipating Patterns, and Statistical Inferences. A strong background in Algebra II will be required from the beginning of the course. Students will be expected to understand concepts taught in class, and also to evaluate, synthesize and apply them to new applications and problem solving situations as preparation for the AP exam administered by CollegeBoard. Scientific and graphing calculators are required.

PREREQUISITE: Open to students in grades 11 or 12 with: 85% in Statistics, 80% in PreCalculus, 80% in Algebra II Honors, 90% in Algebra II

39500 Honors Math Methods in Engineering and the Sciences *STEM* **5 credits**

This course has been designed for the student who is interested in pursuing mathematics at the college level. It will offer a survey of topics that would be covered in four different college courses but in a smaller scope with more emphasis on applications. The first topic, Linear Algebra, will introduce and explore coordinate systems, graphs in three dimensions, vectors, matrices, diagonalization, eigenvectors and basis sets. The second topic, Multivariable Calculus, will explore partial derivatives, vector operators, gradients, and double integral. Differential Equations will explore methods, survey physics equations, functions as basis sets, and calculus of variations. Fourier Analysis will introduce frequency analysis, Fourier Series, Fourier Transforms, Discrete Fourier Transforms, signal processing and Fast Fourier Transforms.

PREREQUISITE: 80% in AP Calculus-C or 80% in AP Calculus-BC

SCIENCE

Three core science courses are required for graduation. The normal sequence is Physics, Chemistry, and Biology. Modification of the established course sequence requires approval of the MHS Science Supervisor. A student may replace one of these courses with the corresponding advanced placement course, though it is normally recommended that students take AP courses as their second course in the subject of interest. Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

All students will participate in a comprehensive science assessment, the New Jersey Student Learning Assessment-Science (NJSLA-S), in the spring of their junior year.

**** It is important to carefully consider a student's past performance in science and mathematics when selecting an appropriate course of study. AP and Honors courses require students to complete additional coursework, utilize advanced mathematical expertise, and maintain a higher level of independent accountability than non-weighted courses. The MHS Science program does not maintain any minimum grade prerequisites for entrance into various course levels; however students earning below a 75% in the previous year's science course will not be eligible to submit a waiver for a science course the following year. The Department offers assistance in placement decisions through teacher recommendations, diagnostic assessments describing cognitive readiness and core competency review materials. In cases where students select course level that was not recommended, the student and parent/guardian will be required to complete a waiver application. Please carefully review the information on page 7 for protocols and requirements related to course level changes. Waivers submitted past the published deadline will not be considered.**

41700 Integrated Physical, Earth and Life Sciences

5 credits

Integrated Physical, Earth and Life Sciences (IPELS) is a college preparatory laboratory science designed for students taking their first MHS science course. IPELS explores phenomena in the natural world through a combination of science disciplines. Students will approach topics from both a scientific and societal perspective. The course incorporates engineering design principles while developing scientific models of earth and space systems, global climate science, and forces and interactions between objects. Students will design lab investigations and use data to investigate cause and effect relationships, generate scientific representations, compare structure and function, construct an understanding of energy storage modes, and identify patterns through analysis of proportions and quantities. Students in IPELS will identify questions, plan investigations, analyze data, and communicate with other members of the learning community. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. IPELS will initiate a theme of energy that will continue in chemistry, followed by biology. This course is open to all students.

41200 Physics

5 credits

Physics is a college preparatory, laboratory science course designed for students in the ninth grade who seek a conceptual understanding and skills in physics. This course will incorporate basic mathematical applications, relying on multiple representations to describe the physical world. Students will be expected to utilize basic arithmetic, proportional reasoning, graphing and algebra to represent physical situations mathematically. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. This physics course will initiate a theme of energy that will continue in chemistry, followed by biology. This course is open to all students.

41500 Physics (Honors)

5 credits

Physics Honors is a college preparatory, laboratory science course designed for students in the ninth grade who seek a conceptual understanding and skills in Physics. This course will incorporate advanced mathematical applications (extensive algebra and introductory trigonometry), relying on multiple representations to describe the physical world, making use of more extensive algebraic representations. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. This physics

course will initiate a theme of energy that will continue in chemistry, followed by biology. Due to the increased level of mathematical complexity, additional topics in kinematics and reduction of in-class guided practice, this course receives honor's weighted credit. A diagnostic assessment and advanced preparation assignment will be provided to students electing to enroll in this course. It is highly recommended that students have demonstrated aptitude in proportional reasoning and advanced proficiency in algebra before enrolling in this course.

41920 AP Physics C: Mechanics and Electricity & Magnetism

5 credits

AP Physics C is a laboratory science course that forms the first part of a college sequence serving as the foundation in physics for students majoring in the physical sciences or engineering. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. The course is designed for students preparing to study the sciences in a post-secondary setting, especially engineering and physical science majors. The appropriate NJ State and National Standards are addressed. Due to the increased level of mathematical complexity, additional topics in kinematics, and reduction of in-class guided practice, this course receives honor's weighted credit. This course is designed to prepare students to take both the AP Physics C: Mechanics exam and AP Physics C: Electricity and Magnetism Exam. A previous physics course is recommended, but not required.

**The course instructor may require a summer assignment to be completed prior to the start of the course (please reference the MHS Science Department website to obtain the summer assignment after July 1st for updated summer assignments).*

42000 General Chemistry

5 credits

General Chemistry is a college preparatory science course cultivating a deep level of conceptual understanding of physical chemistry. The basic concepts are developed using student discourse and laboratory activities in preparation for college level science studies. The goals of this course are to help students develop an understanding of chemistry, cultivate problem solving and critical thinking skill, apply chemistry knowledge to decision making about scientific and technological issues, recognize the importance of chemistry in daily life, and understand benefits as well as limitations of science and technology. This course will build upon the theme of energy developed in physics, continuing in biology. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. Enrollment in General Chemistry is

limited, optimizing the student to instructor ratio. Permission to enroll in this course will be coordinated through the student's school counselor, current science instructor and the MHS Science Supervisor.

42200 Chemistry **5 credits**

Chemistry is a college preparatory, laboratory science course designed as a student's second high school science course. This course will apply basic mathematical equations and skills such as making and interpreting graphs, using exponents, significant figures, scientific notation and algebraic ratios to describe the physical world. A math review packet is available to students the summer before the start of the course. The math material addresses expectations from prior coursework and therefore limited class time will be devoted to this material. The concepts will be assessed on or after the 5th class session. A study of the structure of the atom and the periodic law leads to an understanding of the organization of the periodic table. This knowledge is used to develop concepts of bonding among atoms as well as writing chemical formulas and equations to quantitatively represent chemical reactions. Students are introduced to gas laws, states of matter, solutions, acid-base chemistry and the role of energy in chemistry. Through hands-on laboratory exercises, detailed observations, critical thinking and articulation students are guided to a deeper understanding of matter on an atomic level. The appropriate NJ State and National Standards will be addressed to raise the level of student discourse and develop scientific reasoning skills. This chemistry course will build upon the theme of energy developed in physics, continuing into biology. This course is open to all students.

42500 Chemistry (Honors) **5 credits**

Chemistry Honors is a college preparatory, laboratory science course designed for students who seek a conceptual understanding in chemistry and training in 21st century skills. The goal of the course is to develop a coherent description of matter at the particle level based on observable evidence collected through experimentation and real world experiences. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. This chemistry course will build upon the theme of energy developed in physics, continuing into biology. This course will require fundamental understanding of comparison by ratios, proportionality, percentage, scientific notation, operation of exponents, metric conversions and drawing and interpretation of graphs. Students should demonstrate mastery of basic atomic structure, density, measurement, graphing and physical

properties prior to enrolling in this course. A summer review packet, detailing the core competencies students should possess prior to the course, will be provided online and these concepts and skills will be assessed within the first two weeks of the course. Students enrolled in this course will be expected to have ability to work independently, drawing on prior chemistry knowledge, as well as collaboratively. Due to the higher level of critical thinking, and articulation required, this rigorous course receives honor's weighted credit. This course is open to all students. A diagnostic assessment and advanced preparation assignment may be provided to the students electing to enroll in this course. **The course instructor may require a summer assignment to be completed prior to the start of the course (please reference the MHS Science Department website to obtain the summer assignment after July 1st for updated summer assignments).*

42900 AP Chemistry **5 credits**

AP Chemistry is a laboratory science course that provides an in-depth study of chemistry. It is designed as a first year college course in chemistry for science majors. The topics covered in the course include: the structure and states of matter, chemical reactions, kinetics, equilibrium, thermodynamics, electrochemistry and descriptive chemistry. Laboratory work emphasizes experiments involving major chemistry concepts and skills, and the subsequent analysis of data and the interpretation and communication of experimental results. The appropriate NJ State and National standards are addressed. This chemistry course will build upon the theme of energy developed in physics, continuing into biology. Due to the increased level of mathematical complexity, additional topics in kinetics, redox reactions, and organic chemistry, and reduction of in-class guided practice, this course receives honor's weighted credit. A diagnostic assessment and advanced preparation assignment may be provided to students electing to enroll in this course. This course is designed to prepare students to take the AP Chemistry exam. This course is open to all students. A previous chemistry course is recommended, but not required. This course will require fundamental understanding of comparison by ratios, proportionality, percentage, scientific notation, operation of exponents, metric conversions and drawing and interpretation of graphs. Students should demonstrate mastery of basic atomic structure, density, measurement, graphing and physical properties prior to enrolling in this course on an assessment administered during the first 2 weeks of the class. **The course instructor may require a summer assignment to be completed prior to the start of the course (please reference the MHS Science Department*

website to obtain the summer assignment after July 1st for updated summer assignments).

43000 General Biology

5 credits

General Biology is a college preparatory, laboratory science course designed for students in the eleventh grade to gain conceptual understandings and skills in biology. The course will build upon a student's prior knowledge of physics and chemistry principles as they make connections between the concepts of biology and their everyday world. Students are introduced to biological topics including: the unity and diversity of life, the relationship between form and function within organisms, biochemical processes, genetics, evolution, the interdependence and relationships in ecosystems, classification, and applications in biotechnology through biology simulations, readings, and laboratory activities. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. Permission to enroll in this course will be coordinated through the student's school counselor, current science instructor and the MHS Science Supervisor.

43200 Biology

5 credits

Biology is a college preparatory, laboratory science course designed for students in the eleventh grade to gain conceptual understandings and skills in biology. The course will build upon a student's prior knowledge of physics and chemistry principles as they make connections between the concepts of biology and their everyday world. Students are introduced to biological topics including: the unity and diversity of life, the relationship between form and function within organisms, biochemical processes, genetics, evolution, the interdependence and relationships in ecosystems, classification, and applications in biotechnology through biology simulations, readings, and laboratory activities. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills.

43500 Biology (Honors)

5 credits

Biology Honors is a college preparatory, laboratory science course designed for students in the eleventh grade to gain conceptual understandings and skills in biology. This biology course will continue with the themes developed in chemistry and physics including energy transfer and transformation. Students are introduced to biological topics including: the unity and diversity of life, the relationship between form and function within organisms, biochemical processes, genetics, evolution, the interdependence and relationships in ecosystems, classification, and applications in biotechnology through biology

simulations and inquiry-based laboratory activities. This course will incorporate probability and mathematical modeling, relying on multiple representations to describe the physical world. It includes more extensive analytical lab, reading and writing assignments than the college prep biology course. Course assessments will require a sophisticated analysis of the concepts and focus on application of the core ideas. The appropriate NJ State and National Standards will be addressed so as to raise the level of student discourse and develop essential scientific reasoning skills. This course covers the same topics as the college preparatory course, but with more depth and additional math; this course receives honor's weighted credit. This course is open to all students. It is highly recommended that students successfully complete either Advanced Chemistry Honors or demonstrate a superior understanding of College Preparatory Chemistry prior to enrolling in this course.

43900 AP Biology

5 credits

AP Biology is a laboratory science course that provides an in-depth study of living systems. It is designed as a first year college course in biology for science majors. The course represents a comprehensive survey of general biology that includes biochemistry, cellular biology, molecular genetics and heredity, biotechnology, diversity, structure and function of organisms, ecology and evolution. Given that this course is the equivalent of a college level course, extensive comprehension and understanding of concepts will be required on the part of the student. This biology course will continue to build on chemistry and physics concepts. The appropriate NJ State and National Standards will be addressed. Due to the increased level of mathematical complexity, additional topics in biochemistry, genetics, evolution and reduction of in-class guided practice, this course receives honor's weighted credit. This course is open to all students. This course is designed to prepare students to take the AP Biology exam. It is highly recommended that students considering AP Biology have taken and successfully completed a previous biology course (i.e Biology Honors or Biology). Students who wish to take this course without having taking biology before are recommended to have successfully completed either AP Chemistry or Chemistry Honors. Many introductory chemistry concepts are considered prerequisite knowledge according to the College Board.

**The course instructor may require a summer assignment to be completed prior to the start of the course (please reference the MHS Science Department website to obtain the summer assignment after July 1st for updated summer assignments).*

44900 AP Environmental Science **5 credits**

AP Environmental Science is a full year capstone, laboratory science course designed to incorporate prior biology, chemistry and physics knowledge as it relates to environmental studies. Topics will include the study of the interrelationships of the natural world, the identification and analysis of complex environmental problems, earth systems and resources, the living world, populations, land and water use, energy resources and consumption, pollution, and global change. Students will be expected to critically analyze social, cultural and political influences on environmental problems in order to become better global thinkers. Strong mathematical skills are highly recommended as the mathematical complexity of the course is great. As a college-level equivalent course, students will be expected to work independently and collaboratively. Class time will include practical laboratory experiments, requiring students to complete formal lab reports and review concepts outside of regular class sessions. All students will be expected to complete necessary coursework in preparation for the AP Environmental Science Exam. As a result of the increased level of mathematical complexity, incorporation of previous course work in physics, chemistry and biology, and reduction in-class guided practice this course receives honor's weighted credit.

**The course instructor may require a summer assignment to be completed prior to the start of the course (please reference the MHS Science Department website to obtain the summer assignment after July 1st for updated summer assignments). Students enrolling in this course must have completed physics, chemistry, and biology. This course may be taken concurrent with biology.*

iSTEM - Advanced Scientific Investigations

iSTEM - Advanced Scientific Investigations is a collection of semester-long multidisciplinary course modules open to students who have completed IPELS/physics, chemistry and biology (biology may be taken concurrently) and 10th grade students with permission of the MHS Science Supervisor. Students will explore the connections between Science, Technology, Engineering, and Mathematics through individual inquiry and small group research collaborations. Students will design experiments, gain proficiency with scientific technology, and prepare for local, regional and national science challenge events. The course topics will vary year-to-year and may include optics, electricity and magnetism, green technology, biotechnology and horticulture. The course will make extensive use of computer, digital and engineering instrumentation. Students will select

modules from the potential options available for the upcoming academic year. Modules offered each academic year will be based on student interest, availability of teaching faculty, and accessibility to course resources. Additionally, students will be expected to conduct independent and collaborative research, provide and receive critical feedback from peers, instructional staff, and scientists working in applicable field of studies. Students may be assigned to present a capstone project in a science conference poster presentation format at the annual MHS STEM Day in June. iSTEM - Advanced Scientific Investigations is open to all students having completed the requisite courses. Students enrolling in the course may be required to complete a summer assignment prior to the start of the school year. As a result of the increased level of mathematical complexity, incorporation of previous course work in physics, chemistry and biology, and a reduction in in-class guided practice several of the course modules are designed for honor's weighted credit. Students are encouraged to select multiple modules and could potentially enroll in multiple iSTEM course modules concurrently during either semester.

45001 Anatomy & Physiology (s) **2.5 credits**

The Anatomy & Physiology module will carefully examine living organisms to investigate how systems and body parts work together to sustain life. This module will involve both real-life and online dissections. Prior work in the biological sciences is necessary for an in-depth exploration of the structures and functions of living organisms.

45002 Astronomy (s) **2.5 credits**

The Astronomy module will look at the historical significance of how humans have looked to the stars for navigation and philosophy. The course will explore how modern scientists take measurements in space, how objects interact in space, and how humans come to discover events and objects in space both in the past and present.

45003 Environmental Science (s) **2.5 credits**

The Environmental Science module will explore current topics and trends in environmental science. The curriculum will be focused on a series of lab activities and explorations that help build a comprehensive understanding of the earth's environmental systems. The module will consider current events and the challenges facing humans as our species cares for and preserves our living environment.

45004 Weather and Meteorology **2.5 credits**

The Weather and Meteorology module will build a global weather model. The curriculum will explore the science

behind weather forecasting and how independent weather agencies around the world gather, analyze, and predict weather events. This module will take a deep look at common weather apps to consider the sources and factors influencing weather models.

45501 Biotechnology (Honors) (s) 2.5 credits

The Biotechnology module will examine applications of technology in the life sciences. The curriculum will consider smart systems used in horticulture, PCR applications, and how systems can be analyzed using energy transfer and storage mechanisms.

45502 Microelectronics (Honors) (s) 2.5 credits

The Microelectronics module explores various electronic circuits and uses puzzles to uncover the mysteries as well as possibilities held within microchips. This module will also examine common DIY microelectronics including Arduino, Raspberry PI, Backyard Brains, SparkFun, and other commercially available microcontrollers. Some computer programming will be involved; however, no prior knowledge in coding languages is required.

45503 Organic Chemistry (Honors) (s) 2.5 credits

The Organic Chemistry module will conduct a series of introductory organic chemistry labs that build a coherent model that will be used for an end-of-module synthesis project. Prior knowledge in chemistry is required. Classtime will be used primarily for laboratory investigations with the majority of chemistry content delivered online in a “flipped classroom” format.

45200 iSTEMi - Advanced Independent Scientific Investigations (Honors) 5 credits

iSTEMi - Advanced Independent Scientific Investigations is full-year course where students work exclusively on independent science investigations. This course is designed as a follow-up to iSTEM; however students may submit a formal science research proposal to the MHS Science Supervisor for special permission to enroll in the course. All students will be required to submit a draft proposal of their research project by August 15th prior to the start of the school year. Student projects will be required to follow all safety guidelines and each project will require the equivalent of an Institutional Review Board approval. Students will be responsible for proposing a project budget, maintaining laboratory space, and publishing progress and findings from their work in the MHS Student STEM Board publication *Tau Magazine*. Students will present a capstone project in a science conference poster presentation format and will be encouraged to submit proposals to various student research conferences. Students who are involved in scientific research during the summer may be eligible to include and continue

project work in fulfillment of course requirements. As a result of the increased level of mathematical complexity, incorporation of previous course work in physics, chemistry and biology, and reduction in-class guided practice this course receives honor’s weighted credit.

**The course instructor may require a summer assignment to be completed prior to the start of the course (please reference the MHS Science Department website to obtain the summer assignment after July 1st for updated summer assignments).*

WORLD LANGUAGES

World Language instruction centers on developing proficiency in languages other than English and understanding the perspectives of those related cultures. Language proficiency is developed over time, through sequential building of knowledge and skill practice. Sequential programs starting in grade 9 are offered in French, German, Latin, and Spanish. We strongly encourage students to complete as many years of a language sequence as possible. Students who are uniquely positioned for multilingualism will be encouraged to study multiple languages, to develop full literacy in heritage languages and to pursue the New Jersey Seal of Biliteracy (see Montgomery High School World Languages webpage).

Prerequisites

Program sequences provide skill practice to build communication competencies and students are expected to demonstrate mastery of foundational skills before enrolling in upper level courses. Pre-requisites for courses are firmly based on the proficiency that a student demonstrates over the entire year of work in the preceding course. Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

Placement Testing

Placement tests are used to measure student knowledge and performance along the program continuum for the purposes of determining the course for which that student should register.

The following students must participate in placement testing:

- Students new to the district or to the program whose placement needs to be determined;
- Students new to the district who have met honors course requirements in another school and who wish to continue in honors at MHS.

Proficiency Testing

Language proficiency tests are used to assess student skills at various stages of their world language education. These tests reflect language structure mastery and vocabulary development as assessed on unit and final exams for various courses offered by the department and measure student proficiency in reading, writing, speaking and listening.

The following students must participate in the proficiency testing:

- Students wishing to study a language with which they have extensive experience in an immersion setting, or of which they are a native or heritage speaker;
- Students who wish to advance by means of an accredited summer or online course equivalent which has been pre-approved by the department through the Option II application process.

Note 1: *Summer and online courses traditionally do not cover the curriculum in as much depth as a full-year course. Therefore, although summer or online courses are good for enrichment, they are not recommended as a replacement for a full-year world language course.*

Note 2: *Students from the Upper Middle School register for French, German or Spanish Level 1 at Montgomery High School. Students having earned 85% or better in French 1b, German 1b and Spanish 1b may register for level 2.*

Seal of Biliteracy

The New Jersey Seal of Biliteracy is an acknowledgment by the New Jersey Department of Education that a student has achieved mastery of two or more languages. It encourages students to pursue biliteracy, honors the skills they attain, and provides evidence of skills that are attractive to future employers and college admissions offices.

Interested students must sit for a state-approved language proficiency exam on which they achieve the Intermediate Mid-level according to the American Council on the Teaching of Foreign Languages' Proficiency Guidelines. They also must demonstrate English proficiency by meeting the New Jersey English Language Arts graduation requirement or the appropriate cut score on the ACCESS for English Language Learners.

Information and an application to participate is distributed to juniors and seniors in the fall by their world language teachers or guidance counselors. Further information may be found on the [NJDOE's official Biliteracy Seal page](#) and on the Montgomery High School World Languages webpage.

51100 French 1**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) novice-mid proficiency. The novice-mid language learner understands and communicates at the word level and can independently identify and recognize memorized words and phrases that bring meaning to text. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures, which include the present, near future and recent past tenses. Thematic Vocabulary units are Getting to Know One Another; My Family and Home; School and Leisure Time; and Around Town. Major cultural points of focus and projects include the Francophone World, My Family Album and Paris.

PREREQUISITE: None

51200 French 2**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) novice-high proficiency. The Novice-High language learner has progressed from understanding and communicating at the word level to understanding and communicating at the sentence level and can use words, lists, and simple sentences to identify the main idea and some supporting details when reading; understand the gist and some supporting details of conversations dealing with everyday life; infer the meaning of some unfamiliar words when used in familiar contexts. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures, which include the present, *passé composé* and imperfect tenses. Thematic vocabulary units are My Daily Routine; Family Relationships; My Health; and My Childhood.

PREREQUISITE: Successful completion of MHS French 1 or UMS French 1b with 85% or better

51300 French 3**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) Intermediate-Low proficiency. The Intermediate-Low language learner understands and communicates at the sentence level and can: use simple sentences independently to identify, understand the gist, and infer meaning of the main idea and some supporting details when listening, reading, speaking & writing; initiate, maintain, and end a conversation by asking and answering questions;

express needs, requests and opinions and give reasons and suggestions. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures: Imperfect, future, conditional and subjunctive tenses. Thematic vocabulary units are: Fairy Tales, Wars, My Future, The Environment.

PREREQUISITE: Successful completion of French 2

51450 French 4 (Honors)**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) Intermediate-high proficiency. The Intermediate-high language learner has progressed from understanding and communicating at the sentence level to understanding and communicating at the paragraph level and can use connected sentences and paragraphs independently analyze, synthesize, infer meaning of unfamiliar words in new contexts, identify the organizing principle in oral and written text, infer and interpret an author's intent, and identify some cultural perspectives. Course objectives are for students to demonstrate competence in all communication modes using studied thematic vocabulary with emphasized language structures. ***This on-campus course is mandatory for participation in AP French.***

PREREQUISITE: Successful completion of French 3

51900 AP French**5 credits**

Advanced Placement World Language courses are for students who wish to continue the intensive speaking and writing activities of the previous level while taking up the more challenging reading of literature and the study of culture. Some colleges may award credit based upon the result of the AP exam. The course is based on six thematic units, dictated by The College Board, and utilizes a variety of authentic resources. Total Immersion is expected at this level. The target proficiency is advanced-low, according to the ACTFL proficiency guidelines.

PREREQUISITE: 85% or better in French 4 Honors

52100 German 1**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) novice-mid proficiency. The novice-mid language learner understands and communicates at the word level and can independently identify and recognize memorized words and phrases that bring meaning to text. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary

with emphasized language structures, which include the present, near future and modal verbs. Thematic Vocabulary units are Getting to Know One Another; My School; A Party!; and On the Weekend.

PREREQUISITE: None

52200 German 2 **5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) and state standards novice-high proficiency. The Novice-High language learner has progressed from understanding and communicating at the word level to understanding and communicating at the sentence level and can use words, lists, and simple sentences to identify the main idea and some supporting details when reading; understand the gist and some supporting details of conversations dealing with everyday life; and infer the meaning of some unfamiliar words when used in familiar contexts. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures which include the present perfect, preterite, and future tenses; the accusative and dative cases; present and past tenses of modal verbs. Thematic vocabulary units are: Holidays & Celebrations; Travel Adventures; A Look Back; Technology & Media

PREREQUISITE: Successful completion of MHS German 1 or UMS German 1b with 85% or better

52300 German 3 **5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards ACTFL intermediate-low proficiency. The Intermediate-Low language learner understands and communicates at the sentence level and can use simple sentences to identify the main idea and supporting details when reading, handle simple transactions related to everyday life, initiate, maintain, and end a conversation, express needs and opinions, and give reasons. Course objectives are for students to demonstrate competence in the 3 modes using thematic vocabulary with emphasized language structures-verb placement with reflexives, relative pronouns, and conjunctions, subjunctive mood, and passive voice. Thematic Vocabulary units are Health and Wellness, Life in a (divided) City, My Future, and Nature and the Environment.

PREREQUISITE: Successful completion of MHS German 2

52450 German 4 (Honors) **5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard

7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) Intermediate-high proficiency. The Intermediate-high language learner has progressed from understanding and communicating at the sentence level to understanding and communicating at the paragraph level and can use connected sentences and paragraphs independently analyze, synthesize, infer meaning of unfamiliar words in new contexts, identify the organizing principle in oral and written text, infer and interpret an author's intent, and identify some cultural perspectives. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures. ***This on-campus course is mandatory for participation in AP German.***

PREREQUISITE: Successful completion of German 3

52900 AP German **5 credits**

Advanced Placement World Language courses are for students who wish to continue the intensive speaking and writing activities of the previous level, as well as participating in more in-depth research and exposure to the cultures of Germany, Austria, and Switzerland (current events with a focus on Germany's key role in the European Union, the history, and the political system, as well as architecture, art, literature, music, and science). Some colleges may award credit based upon the result of the AP exam. The course is based on six thematic units, dictated by The College Board, and utilizes a variety of authentic resources. Total Immersion is expected at this level. The target proficiency is advanced-low, according to the ACTFL proficiency guidelines.

PREREQUISITE: 85% or better in German 4 Honors

53100 Spanish 1 **5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) novice-mid proficiency. The novice-mid language learner understands and communicates at the word level and can independently identify and recognize memorized words and phrases that bring meaning to text. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures, which include the present tense and reflexives, near future and recent past tenses.

Thematic vocabulary units are Let's get Started!; My Family-my Home; In and after school; and What we eat and where?

PREREQUISITE: None

53200 Spanish 2**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) novice-high proficiency. The Novice-High language learner has progressed from understanding and communicating at the word level to understanding and communicating at the sentence level and can use words, lists, and simple sentences to identify the main idea and some supporting details when reading; understand the gist and some supporting details of conversations dealing with everyday life; infer the meaning of some unfamiliar words when used in familiar contexts. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures, which include the present, preterite and imperfect tenses. Thematic vocabulary units are City and Country, Planes, Trains and Automobiles, Celebrations and The World of Technology.

PREREQUISITE: Successful completion of MHS Spanish 1 or UMS Spanish 1b with 85% or better

53300 Spanish 3**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) intermediate-low proficiency. The Intermediate-Low language learner understands and communicates at the sentence level and can use simple sentences independently to identify, understand the gist, and infer meaning of the main idea and some supporting details when listening, reading, speaking & writing; initiate, maintain, and end a conversation by asking and answering questions; express needs, requests and opinions and give reasons and suggestions. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary and the emphasized language structures-the preterite, imperfect and subjunctive tenses. Thematic vocabulary units are Leisure Time Adventures, Nutrition and Wellness, Special Occasions and the Arts.

PREREQUISITE: Successful completion of Spanish 2

53350 Spanish 3 (Honors)**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) intermediate-mid proficiency. The Intermediate-Mid language learner understands and communicates at the sentence level and can use strings of sentences independently to identify the

main idea and some supporting details when reading, infer the meaning of some unfamiliar words when used in familiar contexts, and ask and answer questions related to everyday life. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures-- the preterite, imperfect and subjunctive tenses. Thematic vocabulary units are Adventures and Memories, Nutrition and Wellness, Special Occasions, Art and Expression. Major assignments include: family album, cultural presentations, public service announcement on health, essays.

PREREQUISITE: Completion of Spanish 2 with 90% or better

53400 Spanish 4**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards ACTFL Intermediate-mid proficiency. The Intermediate-mid language learner understands and communicates at the sentence level and can use strings of sentences independently to identify the main idea and some supporting details when reading, infer the meaning of some unfamiliar words when used in familiar contexts, and ask and answer questions related to everyday life. The course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary with emphasized language structures-- the preterite, imperfect and future tenses and the , subjunctive mood. The thematic vocabulary units are Trends and Fads, Technology and Progress, The World of Entertainment and Human Diversity. Some of the major assignments include creative writing pieces and individual speeches.

PREREQUISITE: Successful completion of Spanish 3

53450 Spanish 4 (Honors)**5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards ACTFL intermediate-high proficiency. The Intermediate-high language learner has progressed from understanding and communicating at the sentence level to understanding and communicating at the paragraph level and can use connected sentences and paragraphs independently analyze, synthesize, infer meaning of unfamiliar words in new contexts, identify the organizing principle in oral and written text, infer and interpret an author's intent, and identify some cultural perspectives. Course objectives are for students to demonstrate competence in all modes of communication using thematic vocabulary with emphasized language structures-the preterite, imperfect, future and conditional tenses and the

subjunctive moods. Thematic vocabulary units are Family & Immigration, Contemporary Life-- Education, Careers & Relationships, The Environment, Human Rights & the Role of Government. ***This on-campus course is mandatory for participation in AP Spanish.***

PREREQUISITE: Completion of Spanish 3H with 85% or better.

NOTE: Students from Spanish 3 wishing to enroll in Spanish 4 Honors must do the following:

- Complete Spanish 3 with a minimum grade of 90%
- Independently study Spanish 3 Honors content (Dept. Study Guide)
- Schedule oral and writing proficiency examination with the Spanish Department
- Pass the proficiency examination with 90% or better

53499 Spanish 5 **5 credits**

This course meets state graduation requirements for World Languages and NJ Student learning Standard 7.1. Students progress towards ACTFL and state standards Intermediate High proficiency. Students will understand and communicate at the paragraph level and can use connected sentences and paragraphs independently to analyze, synthesize and identify supporting details in written and oral text; Infer meaning of unfamiliar words in new contexts; and identify cultural perspectives. Course objectives are for students to demonstrate competence in all communication modes using thematic vocabulary and all previously studied language structures. This course focuses on a deep cultural exploration of the Latinos in the Americas. Thematic unit titles are: The Contributions of Latinos to the U.S.; The Diversity of the Latin American World; Hispanic Immigration to the U.S.; and Telling our Stories. Major assignments include: research and cultural presentations, class discussions and debates related to examined issues; creating and sharing educational children stories with Village Elementary School Spanish students.
PREREQUISITE: Successful completion of Spanish 4

53900 AP Spanish **5 credits**

This course uses thematic units to explore the Spanish speaking countries history, social, economic and contemporary issues and their impact on society. Students analyze and discuss contemporary issues in the Hispanic world, by listening to authentic texts such as online stream news, radio reports, documentaries and dialogues. Students read authentic texts and literature and prepare formal oral and written presentations. Course is student centered and is entirely conducted in the target language. The course prepares

students to take the AP test. Some colleges may award credit based upon the result of the AP exam.

PREREQUISITE: 85% or better in Spanish 4 Honors

55100 Latin 1 **5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) novice-mid proficiency. The novice-mid language learner understands and communicates at the word level and can independently identify and recognize memorized words and phrases that bring meaning to text. Course objectives are for students to demonstrate competence primarily in the interpretive and presentational modes of communication. This introduction to the language emphasizes the acquisition of reading skills and presents basic grammatical structures. It also acquaints the students with the history, culture and literature of the Romans.

PREREQUISITE: None

55200 Latin 2 **5 credits**

This course meets state graduation requirements for World Languages and NJ Student Learning Standard 7.1. Students progress towards American Council of Teachers of Foreign Language (ACTFL) intermediate-low proficiency. Course objectives are for students to demonstrate competence primarily in the interpretive and presentational modes of communication. This second-year course emphasizes continued acquisition of reading skills and presents basic grammatical structures, including the passive voice, participles, the future tenses, and the subjunctive mood. It also acquaints the students with the history, culture and literature of the Romans, focusing on conflicts of the late republic.

PREREQUISITE: Successful completion of Latin 1

55300 Latin 3 **5 credits**

This intermediate level course completes the introduction to the grammar and syntax of the language, and aims for proficiency in reading extended narrative passages. Students are also introduced to reading unaltered Latin prose and poetry.

PREREQUISITE: Successful completion of Latin 2

55400 Latin 4 **5 credits**

This intermediate level course aims for proficiency in reading and interpreting unaltered Latin prose and poetry, and acquiring and understanding of the civilization within which the literature studied was produced.

PREREQUISITE: Successful completion of Latin

55600 Latin 4 (Honors)**5 credits**

This course sequentially follows Latin 3 honors and is designed to give students an intensive experience in reading classical Latin prose and poetry, including Caesar's *De Bello Gallico* and Vergil's *Aeneid*.

Students study the political, historical, literary, and cultural background of each author and text. Practical analysis of Latin passages offer students an understanding of how and why the author uses the language in a particular way and the effects he intends to produce. For the *Aeneid*, students learn how to scan and read Latin meter aloud and study how Vergil uses dactylic hexameter to enhance the text and create effect.

PREREQUISITE: Successful completion of Latin 3

21st CENTURY LIFE AND CAREERS or CAREER TECHNICAL EDUCATION

The State of New Jersey requires high school graduates to have 5 credits of 21st Century Life and Careers or Career Technical Education (CECFLS) and 5 credits of Visual and Performing Arts (VPA). The curricula for the courses described below have been written to comply with the N.J. State Standards in both these areas. Students who wish to take more than the 5 required credits in either of these course groups must plan their elective program carefully. Typically the senior year has fewer required courses allowing students to take several electives during that year. Students wanting to take four years of either concentration (VPA or CECFLS) could meet the requirement for the other grouping by scheduling the 5 credits (2 one-semester courses or one full year course) in his/her senior year.

Career Exploration

60100 Journalism I 5 credits

Students in Journalism learn how to compose news stories, feature articles, and editorials. Trends in layout, production, and graphics are also examined. The course also aims at developing students' understanding of the impact of high technology on journalism. Students are required to write articles for the school's newspaper and to assist with the yearbook, if necessary.

PREREQUISITE: Open to all students in grades 9-12 who have received a grade of 75% or better in the required English program

60200 Journalism II 5 credits

The Journalism II elective is a self-paced class for those students who have an interest in Journalism and journalistic writing. Students study such topics as layout and design, in-depth reporting, broadcast journalism and copy editing.

PREREQUISITE: Successful completion of Intro to Literature & Composition, Journalism I with a grade of 75% or better or a letter from the newspaper advisor

60300 Journalism III-Portfolio 5 credits

This year long course is designed for students who are seriously interested in further developing the layout, editing, and journalistic writing skills introduced in Journalism I and II. Students in this course are expected to take on an active editorial role in the publishing of the school newspaper, The Paw Print. A portfolio of work will be generated from both the students' work related to The Paw Print as well as from independent, in-class assignments.

PREREQUISITE: Successful completion of Journalism I and II

Computer Applications/Computer Science

62200 Introduction to Computer Languages (s)

***STEM* 2.5 credits**

The need for computer programmers is growing in all fields of study for the 21st century. This course is for students who want to explore computer programming, or who have had no previous programming experience and want to find out what it's all about. Students will explore three programming languages: Scratch, Visual Basic.Net and C++. They will increase their problem solving skills by writing programs that solve real world/business related problems.

PREREQUISITE: None

62400 Foundations of JAVA (s) *STEM* 2.5 credits

Java is currently one of the fastest growing computer programming languages used in developing computer programs. Students will learn the fundamental concepts of programming with algorithm design and code implementation. Students will be taught how to write efficient computer programs including graphics. This course consists of interesting individual/group programming projects and case studies that they are likely to encounter in the real world. Students will learn how to build applets and how to write programs that display graphical shapes. This course will satisfy the prerequisite for AP Computer Science.

PREREQUISITE: None

62500 Game Design & Application Development (s)

***STEM* 2.5 credits**

This one semester course will engage students in a project-based curriculum that teaches the game design and application development process. Game and application design is considered one of the fastest growing, most exciting career areas in computer programming. Students will be introduced to game design and creation software which will allow them to create many different types of games and applications including action, adventure and puzzle.

PREREQUISITE: None (although it is recommended that students have prior programming experience)

62610 Webpage Design & Development (s)

***STEAM* 2.5 credits**

This course is an introduction to the design, creation and maintenance of visually dynamic web pages and websites. Students will create polished, professional-looking websites using Adobe Creative Suite featuring Dreamweaver and Flash. Valuable technical and applicable skills will be stressed that can be used throughout one's career in the 21st century. A brief review of HTML code will also be covered. Students work in an exciting project based environment.

PREREQUISITE: None

62900 AP Computer Science - A *STEM* 5 credits
AP Computer Science A is a full year course with emphasis on object oriented programming in JAVA. Students will learn programming methodology with importance on problem solving algorithm development and data structures. This course consists of several interesting programming projects and case studies. Students in this Advanced Placement course will follow a most rigorous curriculum based on the Java programming language.

PREREQUISITE: Successful completion of Foundations of JAVA

Business Administration

61100 Basic Accounting (s) 2.5 credits
The field of business is for individuals looking for an exciting career; one that offers earnings potential, pleasant working conditions, and opportunities for advancement. Every industry needs accounting and employment of accountants is predicted to grow faster than all other occupations through 2016. Basic Accounting will introduce students to the accounting cycle, which will serve as a sound background for employment in office jobs, owning your own business, and preparation for post-secondary institutions. Students will be introduced to the computerized accounting cycle stressing skills needed for producing financial statements for both a single proprietorship and a partnership.

PREREQUISITE: None

61600 Financial Literacy (s) 2.5 credits
Every student needs to manage their finances now, and throughout adulthood. Financial Literacy addresses the need for all students to learn how to earn, invest, manage and keep their money. Through exciting, student-centered activities and projects that require 21st century skills, our students will master career explorations, money management, credit, saving and investing, informed purchasing, civic financial responsibility and risk management. This course will satisfy the 2.5 credits in Financial Literacy mandated by the State of New Jersey.

PREREQUISITE: None

61300 Business and Personal Law (s) 2.5 credits
In Business and Personal Law, students will learn about the basic issues of our legal system that relate to everyday living. Students will learn the fundamental principles of law, the history of our laws, criminal/civil procedures and various torts and crimes; this course helps make students aware of problems facing society today. Students then use critical analysis methods to

deal with these problems by using case studies, and small group collaboration.

PREREQUISITE: This elective is open to students in grades 10, 11 and 12

61400 Introduction to Entrepreneurship (s)

2.5 credits

Owning your own business is the “American Dream.” An entrepreneur attempts to earn a profit by taking the risk of operating a business. Students will learn about the fastest growing form of business, electronic commerce. Analyzing markets, sales and advertising strategies, obtaining capital, modern management techniques, managing personnel, website creation and much more are taught. The course will inform students of their financial responsibilities as citizens, students, family members, consumers and active participants in the business world. Included are guest speakers and computer simulations. This course will satisfy the 2.5 credits in Financial Literacy mandated by the State of New Jersey.

PREREQUISITE: None

61500 Sports and Entertainment Marketing (s)

2.5 credits

Sports and Entertainment Marketing is an exciting, student driven course designed for students who are interested in pursuing a career in business as well as the sports and entertainment industries. This course will emphasize some of the core concepts in marketing/business as they pertain to these two competitive industries. Some of these core concepts include market research, corporate sponsorship, endorsements, target marketing, etc. Students will develop critical thinking, decision making, and communications skills utilizing real world applications. This course will be extremely beneficial for any student looking to pursue a major in business and an eventual career in business. Outside of the normal classroom activities, students will get the opportunity to listen to a wide variety of guest speakers from the sports and entertainment industries, examine case studies, and visit various sports and entertainment venues, thus, supplementing all of the core concepts that are being discussed in class.

PREREQUISITE: None

Communication Technology

63100 Television Production I (s) 2.5 credits

The student is introduced to television techniques and the use of television as a mass communication medium. Working as a member of a production team, each student writes directs, and produces videos for use on the MHS cable television station, in house productions, or special video production for use within the school. Students

experience studio practice, camera direction, lighting and editing using special effects. Students gain television production experience using interdisciplinary projects and the development of cooperative problem solving skills as a major focus. Students are expected to produce a minimum of one video every other week.

PREREQUISITE: None

63200 Television Production II 5 credits

TV Production II is an advanced course that builds upon concepts and skills taught in TV Production I. Students act as producers and directors of our cable television show. They also develop the plan for morning announcements and various projects throughout the year.

PREREQUISITE: Successful completion of TV Production I

63300 Television Production III 5 credits

This course is designed as an independent study for students who want to produce various video products. They act as executive producers of the current shows and help to produce special segments throughout the year. Students apply knowledge learned from TV Production I and TV Production II to complete these projects.

PREREQUISITE: Successful completion of TV Production II

63400 Radio Broadcasting (s) 2.5 credits

This semester long course is designed to provide M.H.S. students with experience in radio broadcast delivered to the public via internet streaming. Students will gain experience in the everyday running of an internet based radio studio utilizing both live as well as pre-recorded formats. Students will develop skills essential to the following positions: on air talent, producer, public relations/marketing, studio engineer, etc./ Students will be responsible for programming the day's music/promos as well as developing weekly live broadcast shows revolving around various genres of music, talk show format, and the eventual airing of live M.H.S. sports and events broadcasts. Utilizing a project based, student driven curriculum, M.H.S. students will gain an appreciation for various aspects of radio broadcasting, ultimately realizing how significant these concepts are to all careers within the realm of communications.

PREREQUISITE: None

Industrial Arts/Pre-Engineering

65100 Media & Graphic Communication I (s)

***STEAM* 2.5 credits**

Media & Graphic Communication I will explore the foundations and applications of modern printing, photography, computer graphics and different forms of graphic reproduction. Students will learn the history and development of graphic arts as well as career

opportunities related to communication technology. In addition to Lithographic Technology students will be taught screen making, and sketching/typography. Small problem-solving activities will include ways to develop and solve design challenge activities.

PREREQUISITE: None

65200 Media & Graphic Communication II

***STEAM* 5 credits**

Media & Graphic Communication II will explore the applications technical processes of advanced printing, computer graphics, and different forms of graphic reproduction. Students will learn to develop new methods of graphic art technologies as well as participate in career opportunities related to communication technology. In addition to Lithographic Technology students will master screen making and printing. Small problem -solving activities will include ways to learn and develop design challenge activities.

PREREQUISITE: Successful completion of Media and Graphic Communication I

66100 Architectural Design I (s) *STEAM*

2.5 credits

Architectural Design I is designed to introduce the fundamentals of architectural design principles and techniques. Students will learn to hand sketch plans and how to use a Computer Assisted Design (CAD) program to do architectural design. A major emphasis is placed on learning how residential and commercial systems are designed, planned and constructed. This course will engage students in real-world design activities such as designing houses, kitchens and bathrooms.

PREREQUISITE: None

66200 Architectural Design II *STEAM* 5 credits

Architectural Design II is designed for students seeking a more advanced course of study devoted to architectural design principles and techniques. Students will make extensive use of a Computer Assisted Design (CAD) program to do detailed architectural design. A major emphasis is placed on learning how residential and commercial buildings are designed, planned and constructed. This course will engage students in real-world design activities such as planning a commercial project, managing a home construction project, and various remodeling projects.

PREREQUISITE: Successful completion of Architectural Design I

PORTFOLIO PROJECTS

- 65300 Portfolio Project - Media & Graphics**
Communication 5 credits
- 66300 Portfolio Project - Architecture 5 credits**
- 67300 Portfolio Project - Engineering 5 credits**
- 69300 Portfolio Project - Computer Aided**
Drafting & Design 5 credits

Portfolio Project is a course designed to give experienced students who have taken prerequisite Technology Education courses an opportunity to develop a professional portfolio. The student portfolio can have a concentration in areas such as Architectural Design, Robotic Systems, Power & Energy, Graphic Information Systems, or Media & Graphics. This professional portfolio can be used to investigate a potential career or prepare for a college course of study. *STEAM*

PREREQUISITE: One or more Level I courses plus a Level II Technology Education course. Open to 12th grade only

67100 Engineering Design & Material
Fabrication I (s) *STEAM* 2.5 credits

Engineering Design & Material Fabrication I is designed to introduce the fundamentals of material processing techniques. This course emphasizes safety and will engage students in real-world design activities. It is project oriented and designed to teach hand, power, and machine tool skills as well as the knowledge needed to support those skills. Students will become familiar with manual operations and the utilization of automated equipment. This course explores the nature and impact of technology in our everyday lives.

PREREQUISITE: None

67200 Engineering Design & Material
Fabrication II *STEAM* 5 credits

Engineering Design & Material Fabrication II continues the exploration of materials processing techniques. This course reemphasizes the importance of safety and how real-world design activities impact us. It is project oriented and designed to teach hand, power, and machine tool skills as well as the knowledge needed to support those skills. Students will design and develop an approved full year project appropriate for the current facility. This course explores the nature and impact of technology in our everyday lives.

PREREQUISITE: Successful completion of *Engineering Design and Materials Fabrication I*

68100 Power, Energy & Transportation
Technology(s) 2.5 credits

Power, Energy & Transportation Technology studies a wide view of transportation technologies. Students will learn the history and development of the internal

combustion engine. This includes the theory of operation for two and four stroke engines. They will identify basic model series and perform full disassembly and reassembly of their engines. Students will be given small problem solving activities which will include testing different parts of their engines numerous times throughout the course. Lastly they will paint and test their engines for operation.

PREREQUISITE: None

69000 Engineering I (s) *STEAM* 2.5 credits

Engineering is designed for students seeking a more specific course of study devoted to the engineering disciplines. Major emphasis is placed on engineering design and fundamentals. Students will start the course by learning isometric sketching skills. There will be an extensive use of 2D and 3D computer aided design and drafting (CADD) programs that are used in industry today. The use of precision measuring equipment will be used in reverse engineering and design projects. This course is designed for the student interested in pursuing Engineering in college.

PREREQUISITE: None

69100 Engineering II *STEAM* 5 credits

Engineering II is designed for students seeking more information about a career in Engineering. This course will continue where Engineering I ended and will use 3D CADD software to design assemblies consisting of materials, bearings, bushings and gears. Insight into the different types of Engineering will be researched and discussed. The course will prepare students for the first year of an Engineering path. Some areas to be covered are advanced engineering drawing, the use of precision measuring equipment, basic material science, the design process and problem-solving. Students will learn to use a 3D printer to print their designs.

PREREQUISITE: *Engineering I*

Family & Consumer Sciences/Culinary Arts

64100 Introduction to Culinary Arts (s) 2.5 credits

The class is designed to familiarize students with the basic techniques of food preparation. Students will prepare appetizers, entrees, side dishes, desserts and snacks that incorporate each of the food groups. Nutrition, meal preparation, food selection, preparation techniques, sanitation and food service will be emphasized. Careers in food service and management will be explored.

PREREQUISITE: None

64200 Culinary Arts II (s) 2.5 credits

Building upon the basic concepts of food preparation learned in Introduction to Culinary Arts, students will be exposed to the world of international and ethnic cuisine

as part of an individual's cultural identity. Specifically, students will analyze and compare the interrelationship between cuisine and culture. Students will also examine the relationship between a country's cuisine and their climate, agricultural stability, geography, standard of living, religion, etc. Students will learn the culture, history and traditional preparation techniques of foods originating from countries such as: France, Japan, Italy, China, Mexico and others. Also, students will experience the art of garnishing and plate presentation. Incorporating topics of nutrition, safety, sanitation, and food borne illnesses will be ongoing. Culinary, hospitality and food related careers will be highlighted.

PREREQUISITE: Successful completion of Introduction to Culinary Arts

64500 The Art of Baking (s) 2.5 credits

This semester long course is designed to provide M.H.S. students with experience in the exciting culinary world of cake making and decorating. With the popularity of shows like *Cake Boss* and *Cupcake Wars*, decorative baking has become an extremely popular niche within the culinary world. Students will gain experience in baking specific desserts as well as decorating them. Students will develop skills essential to being a successful baker. Furthermore, these skills can easily be transferred into the everyday lives of anyone that simply enjoys baking. Students will be responsible for researching various types of cakes, baking them to industry standard, and decorating them. Utilizing a project based, student driven curriculum, M.H.S. students will gain an appreciation for various aspects of baking and cake decorating, ultimately realizing that they are easily able to transfer these skills into their everyday lives.

PREREQUISITE: None

64300 Fashion and Clothing (s) 2.5 credits

Basic fashion appreciation and construction will be learned through a hands-on approach. Students will learn about: wardrobe planning, personal style selection, consumer skills, textiles and clothing care. Students will learn to create a garment using a commercial pattern, operate a sewing machine and various clothing construction equipment. Independent work on their projects will be on going throughout the semester. Students will also gain basic knowledge of careers available in the fashion industry.

PREREQUISITE: None

64600 Life Skills (s) 2.5 credits

The course is designed to prepare students for self-sufficiency and independence. Units of study will include: career selection, resumes, obtaining a job, consumer skills, housing, insurance, available resources

and ethical choices. Each of the areas of study will incorporate good decision making skills that will help them to manage their life and successfully meet the challenges of inter and intra personal relationships.

PREREQUISITE: This elective is open to students in grades 10, 11 or 12

VISUAL AND PERFORMING ARTS

VISUAL ART

70000 Introduction to Studio Art (s) 2.5 credits

This is a semester course designed to provide a foundation in the visual arts and design. Students will explore their creativity while learning how to paint, draw, and sculpt as well as use other exciting media. This class is designed to provide beginning students with guided experiences in materials, media, and basic art concepts. Because the intention of this course is to introduce students to the world of making art, grades are based upon students' willingness to experiment with new skills and explore their creativity. Come explore your creativity!

PREREQUISITE NONE

70100 Studio I (s) 2.5 credits

Studio I introduces students to new materials and techniques through guided concepts and assignments. Students will be given concepts and allowed to explore them through their own individual voice. Studio I is a semester course that helps the student develop their own visual literacy. This is the introductory course to the studio sequence. Upon completion of this course, students will be prepared to move forward to Studio II.

PREREQUISITE: Successful completion of Introduction to Studio Art at MHS or recommendation of art teacher from UMS or MHS.

70200 Studio II (s) 2.5 credits

Studio II students are given the opportunity to polish their technical skills and explore various themes that interest them personally. At this level, students are encouraged to gather inspirational materials independently and to keep a sketchbook. Students will explore advanced media, art-history, contemporary trends and develop works of art through proposed questions and themes. Students will also explore career opportunities which will enhance their knowledge of the art world. The course will provide portfolio guidance and direct students toward technical competence, visual understanding, and the ability to communicate ideas and concepts.

PREREQUISITE: Successful completion of Studio I

70400 Honors Portfolio 5 credits

This year-long course is designed for students who are seriously interested in developing a college portfolio that showcases the wide range of their technical and conceptual achievements. The level of work expected of students in this course are synonymous with that of college art majors. Students will participate in the annual Visual Arts Extravaganza. This course prepares students

for AP Studio by fostering independent growth with peer feedback and guidance from the teacher.

PREREQUISITE: Successful completion of Studio II

AP Art Studio Concentrations:

Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

70910 AP Studio Art or 2D Portfolio 5 credits

In this year-long course students will develop a consistent, theme-based body of 12 pieces which will be displayed at the Art Extravaganza, gallery style. Students investigate a theme deeply and produce a polished series of paintings or works of art that are stylistically unified and recognizable. Students are given a high level of responsibility and accountability and are expected to bring their own influences, references and skills to the table. AP Studio students produce a portfolio for college applications, the Arts Extravaganza solo exhibit, and for an optional evaluation by the College Board. This course requires a high degree of commitment and self-discipline due to the rigorous curriculum and the individualized course structure.

PREREQUISITE: Interview with art faculty for concentration placement approval as well as successful completion of either honors portfolio or Advanced Photography.

71100 Photography I (s) *STEAM* 2.5 credits

Photo I is a semester course designed to provide a foundation in 35mm black and white analog photography while giving students a strong foundation in visual arts. Signature experiences will be tempered by smaller assignments, technical lessons and demonstrations. This course introduces the four major areas of study in the fine arts: Themes and Forms, Core Concepts, Techniques and Tools, and Culture & History. A 35mm manual camera is not required but strongly recommended.

PREREQUISITE: None

71200 Photography II (s) *STEAM* 2.5 credits

Photo II is a semester course designed to provide a foundation in digital photography and post processing with Adobe Photoshop while giving students a strong foundation in visual arts. Signature experiences will be tempered by smaller assignments and larger projects, technical lessons and demonstrations. Independent problem solving will be expected to complete conceptual artworks. The four major areas of study are synthesized in each project: Themes and Forms, Core Concepts, Techniques and Tools, and Culture & History. A Digital camera is not required but strongly recommended.

PREREQUISITE: Successful completion of Photography I

71300 Advanced Photography *STEAM* 5 credits

This is a year-long course designed for students who are seriously interested in photography as their artistic medium. At this advanced level, students are already familiar with the signature experiences in both analog and digital photography. This course is mainly a digital photography course; however students do have the opportunity to use black and white film, or a combination of the two throughout the course. In this course students will explore movements and themes throughout photographic history and develop photographs through proposed questions and themes. Advanced techniques in regards to photographing with a DSLR camera as well as editing with Adobe Photoshop will be introduced throughout the year. Individual instruction will be provided to each student based on the technical and aesthetic needs of their specific project. Students are expected to engage in running critical dialogues: to self-critique. They will rely on their peers as a constant source of formal and informal feedback throughout the class period and during Community Critiques. Overall, this course will provide guidance toward technical competence, visual understanding, and the ability to communicate ideas and concepts clearly. Students will start creating pieces that can be used within a college portfolio. The highlight of the advanced photo courses is the showcase of their work in a personal solo exhibit at Art Extravaganza at the end of the year.

PREREQUISITE: Successful completion of Photography II

AP Art Studio Concentrations:

Montgomery High School only administers Advanced Placement exams for students who are currently enrolled in the course at MHS for that exam.

70920 AP Photo/2D Portfolio *STEAM* 5 credits

This year long course is designed for students who are seriously interested in the practical experience of art-making through photography, including the creation of a college portfolio. The core of this course consists of intensive, guided exploration of media, demonstrations, reference gathering, formal group critiques, reflections, and frequent sketch booking. Students experience a variety of concepts, techniques and approaches designed to help them demonstrate their abilities as well as their versatility with techniques, problem solving, and conceptualization. This course requires a high degree of commitment and self-discipline. Students are expected to perform at the highest level of understanding in the use of four major areas of study in the fine arts: Themes and Forms, Core Concepts, Techniques and Tools, and Culture & History. The highlights of this course are the production of a portfolio for college applications and for

an optional evaluation by the College Board, as well as a personal solo exhibit at the Arts Extravaganza.

PREREQUISITE: Interview with art faculty for concentration placement approval as well as successful completion of either honors portfolio or Advanced Photography.

72000 Visual Design - Art Making through Technology (s) *STEAM* 2.5 credits

In this semester course, students will create art and design works that respond to the visual world. Students will use conventional and digital tools such as Photoshop, pen and ink, scanners, paint, cameras and drawing tablets. Projects can include text manipulation, pattern design, story boarding, digital portraiture, cover art, or advertising. This course is partially based in technology with a MacBook platform and focuses on building student artistry and aesthetic creativity.

PREREQUISITE: None

70600 Ceramics (s) 2.5 credits

Ceramics is a semester course that explores hand built and wheel-thrown ceramics. Students will develop their awareness of the Elements and Principals of Design as they apply to the sculptural form, bas relief and pottery. They will experience additive, subtractive, wheel thrown and glazing methods. This course introduces the four major areas of Study in the fine arts: Themes & Forms; Core Concepts; Techniques & Tools; and Culture & History.

PREREQUISITE: None

70610 Ceramics II (s) 2.5 credits

Ceramics II challenges students that want to progress in the ceramic arts. As a 3D class students will be expected to create sculptural forms, while being exposed to experimental techniques. Student will also have the opportunity to further their skill on the potter's wheel, develop their own artistic style, explore concepts and begin to develop their artist voice in clay. This is a semester course that further explores the four major areas of study in the fine arts: Themes and Forms; Core Concepts; Techniques and Tools; and Culture & History.

PREREQUISITE: Ceramics

70620 Advanced Ceramics (s) 2.5 credits

In Advanced Ceramics students are encouraged to develop an individual style of wheel thrown and hand built ceramic forms with explorations in surface treatment. This continuation of ceramic studies will emphasize on the development of unique, creative skills in hand building, fabrication, slip casting and wheel throwing. Students will explore and investigate contemporary concepts through the development of their

own unique series. This is a semester course that further explores the four major areas of study in the fine arts: Themes and Forms; Core Concepts; Techniques and Tools; and Culture & History.

PREREQUISITE: Ceramics II

MUSIC

75000 Symphonic Band

5 credits

Symphonic Band is for students in 9th through 12th grade. The objectives of the course are to increase individual instrumental proficiency skills; increase ensemble skills pertaining to the concert band idiom; deepen students' understanding of their musical intelligence and knowledge; enhance appreciation of music; enhance self-awareness and self-esteem; increase self-reflection and creative thinking skills; stress individual and group responsibility through membership in a democratic organization; foster pride in Montgomery High School; develop self-discipline through the study and performance of demanding music; and to develop poise and self-confidence through public performance. The Symphonic Band performs a minimum of three times per year. Repertoire performed is normally grade III and IV. Marking period grades are determined by a number of factors, to include attendance at and preparation for lessons with the band director during unit lunch, successful presentation of mandatory concerts, individual repertoire playing assessments, individual pedagogical benchmark assessments, student-graded rehearsals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of band in the previous year or successful audition with permission of the director

75100 Symphonic Winds

5 credits

Symphonic Winds is a select, auditioned ensemble, primarily for 10th to 12th grade students. 9th grade students may choose to audition for symphonic winds in the spring of their 8th grade year. The objectives of the course are to increase individual instrumental proficiency skills; increase ensemble skills pertaining to the wind band idiom; deepen students' understanding of their musical intelligence and knowledge; enhance appreciation of music; enhance self-awareness and self-esteem; increase self-reflection and creative thinking skills; stress individual and group responsibility through membership in a democratic organization; foster pride in Montgomery High School; develop self-discipline through the study and performance of demanding music; and to develop poise and self-confidence through public performance. The Symphonic Winds perform at least three times per year. Symphonic Winds students are expected to perform to a high level, performing grade III

- V repertoire. Participation is governed by a rigid consideration for proper instrumentation and balance. Marking period grades are determined by a number of factors, to include attendance at and preparation for lessons with the band director during unit lunch, successful presentation of mandatory concerts, individual repertoire playing assessments, individual pedagogical benchmark assessments, student-graded rehearsals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of band in the previous year as well as a successful audition with permission of the director

75200 Wind Ensemble

5 credits

Wind Ensemble is open to 9th through 12th grade students and is the highest skill level curricular band class. Students in the wind ensemble will engage in a rigorous study of advanced wind band repertoire that is normally performed at the collegiate or professional level. The objectives of the course are to teach students advanced levels of instrumental pedagogy skills; achieve collegiate level ensemble skills that pertain to the wind band idiom; deepen students' understanding of their musical intelligence and knowledge; enhance appreciation of music through exposure to and performance of quality repertoire; enhance self-awareness and self-esteem; increase self-reflection and creative thinking skills; stress individual and group responsibility through membership in a democratic organization; foster pride in Montgomery High School; develop self-discipline through the study and performance of demanding music; and to develop poise and self-confidence through public performance. The Wind Ensemble performs a minimum of four times per year, usually more. Students may also be asked to attend a few weekend rehearsals during the school year, schedule permitting. Wind Ensemble students are expected to work to their highest levels with grade level IV - VI repertoire being performed. Participation is governed by a rigid consideration for proper instrumentation and balance. Marking period grades are determined by a number of factors, to include attendance at and preparation for lessons with the band director during unit lunch, successful presentation of mandatory concerts, individual repertoire playing assessments, individual pedagogical benchmark assessments, student-graded rehearsals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of a curricular band in the previous year as well as a successful audition with the director

75500 Honors Wind Ensemble **5 credits**
Honors Wind Ensemble is open to students in 12th grade. This course meets at the same time as wind ensemble. In addition to the requirements of wind ensemble, students in Honors Wind Ensemble must prepare for and participate in at least one chamber music performance as well as research our repertoire and prepare historical notes for the concerts.

PREREQUISITE: Students must be in their senior year to enroll in this course. Additionally, students must successfully audition with the band director and receive permission to register.

76000 Concert Orchestra **5 credits**
Concert Orchestra is for students in 9th through 12th grade. The objectives of the course are to increase individual instrumental proficiency skills; increase ensemble skills pertaining to the string orchestra idiom; deepen students' understanding of their musical intelligence and knowledge; enhance appreciation of music; enhance self-awareness and self-esteem; increase self-reflection and creative thinking skills; stress individual and group responsibility through membership in a democratic organization; foster pride in Montgomery High School; develop self-discipline through the study and performance of demanding music; and to develop poise and self-confidence through public performance. The Concert Orchestra performs a minimum of three times per year. Repertoire performed is normally grade III and IV. Marking period grades are determined by a number of factors, to include attendance at and preparation for lessons with the orchestra director during unit lunch, successful presentation of mandatory concerts, individual repertoire playing assessments, individual pedagogical benchmark assessments, student-graded rehearsals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of orchestra in the previous year or successful audition with permission of the director

76100 Chamber Orchestra **5 credits**
Chamber Orchestra is open to students in the 9th through 12th grades and is the highest skill level curricular orchestra class. Students in the chamber orchestra will engage in a rigorous study of advanced string orchestra and full orchestra repertoire that is normally performed at the collegiate or professional level. The objectives of the course are to teach students advanced levels of instrumental pedagogy skills; achieve collegiate level ensemble skills that pertain to the orchestra idiom; deepen students' understanding of their musical intelligence and knowledge; enhance appreciation of music through exposure to and performance of quality repertoire; enhance self-awareness and self-esteem;

increase self-reflection and creative thinking skills; stress individual and group responsibility through membership in a democratic organization; foster pride in Montgomery High School; develop self-discipline through the study and performance of demanding music; and to develop poise and self-confidence through public performance. The Chamber Orchestra performs a minimum of four times per year, usually more. Students may also be asked to attend a few weekend rehearsals during the school year, schedule permitting. Chamber Orchestra students are expected to work to their highest levels with grade level IV - VI repertoire being performed. Participation is governed by a rigid consideration for proper instrumentation and balance. Marking period grades are determined by a number of factors, to include attendance at and preparation for lessons with the orchestra director during unit lunch, successful presentation of mandatory concerts, successful individual repertoire playing assessments, individual pedagogical benchmark assessments, student-graded rehearsals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of a curricular orchestra in the previous year as well as a successful audition with the director

76500 Honors Chamber Orchestra **5 credits**
Honors Chamber Orchestra is open to students in 12th grade. This course meets at the same time as chamber orchestra. In addition to the requirements of chamber orchestra, students in Honors Chamber Orchestra must prepare for and participate in at least one chamber music performance as well as research our repertoire and prepare historical notes for the concerts.

PREREQUISITE: Students must be in their senior year to enroll in this course. Additionally, students must successfully audition with the orchestra director and receive permission to register.

77000 Concert Choir **5 credits**
This course welcomes students to a dynamic and challenging musical environment. Through a myriad of vocal music genres, students will strengthen their ability to vocalize and develop their fluency of vocal art music. Objectives of this course are to increase vocal skills, develop an appreciation and knowledge of ensemble singing, promote individual and communal growth, create a sense of self-discipline and confidence in using their voice, and create a solid foundation of musicianship. Participation in performances is a course requirement. Marking period grades are determined by a number of factors, to include successful presentation of mandatory concerts, individual repertoire singing assessments, individual pedagogical benchmark

assessments, graded sectionals and concerts, homework completion, and class preparation.

77200 Chorale **5 credits**

This course is a full-year ensemble that focuses on the breadth of challenging vocal music written for soprano and alto voicing. Participation is open to 10th through 12th grade students by audition. Singers enrolled will learn advanced vocal technique, sight-reading, musicianship and ensemble practice through rehearsals and performances of literature from various styles, genres, cultures and eras. Marking period grades are determined by a number of factors, to include successful presentation of mandatory concerts, individual repertoire singing assessments, individual pedagogical benchmark assessments, graded sectionals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of choir in the previous year as well as audition and permission of director.

77100 Chamber Choir **5 credits**

Chamber choir is open to 10th through 12th grade students. Acceptance into this ensemble offers an opportunity for students who display outstanding vocal skills and musicianship to participate in a smaller, advanced level vocal group. Students will be responsible for performing advanced high school, collegiate, and professional level repertoire. The size and distribution of the parts of the ensemble will be determined by the balance needs for the group on a year-by-year basis. Members will study a wide variety of rigorous and rewarding literature while honing vocal and ensemble skills. Active participation in concerts, festivals and other performance venues are a requirement of this course. Participation is governed by a rigid consideration for proper vocal balance. Marking period grades are determined by a number of factors, to include successful presentation of mandatory concerts, individual repertoire singing assessments, individual pedagogical benchmark assessments, graded sectionals and concerts, homework completion, and class preparation.

PREREQUISITE: Successful completion of an audition and recommendation of the director

77500 Honors Chamber Choir **5 credits**

Honors Chamber Choir is open to students in 12th grade. This course meets at the same time as chamber choir. In addition to the requirements of chamber choir, students in Honors Chamber Choir must prepare for and participate in at least one chamber or solo music performance as well as research our repertoire and prepare historical notes for the concerts.

PREREQUISITE: Students must be in their senior year to enroll in this course. Additionally, students must successfully audition with the choir director and receive permission to register.

SPEECH ARTS

73100 Introduction to Drama I (s) **2.5 credits**

This is an introductory elective course with emphasis on theater exercises, theater games, mime, and improvisations. Additionally, mini-lectures are given on dramatic literature, history of the theater, technical terms and stagecraft, and play reading and critiquing.

PREREQUISITE: None

73200 Introduction to Drama II (s) **2.5 credits**

This course is a practical workshop incorporating readings from the classics and modern dramatic literature, improvisations, mime, auditioning techniques, and preparation for the production of a play.

PREREQUISITE: Successful completion in Introduction to Drama I or teacher approval

73300 Advanced Drama III **5 credits**

This is a full year course that continues with the goals introduced in Drama I and II. The Advanced Drama III course focuses on the student's understanding of theater and the rehearsal process that leads to a polished performance. This course deals with both acting and technical theater, and gives students a solid background in the world of theater.

PREREQUISITE: Successful completion of Introduction to Drama II.

74000 Public Speaking (s) **2.5 credits**

Public Speaking is a one-semester course that teaches communication skills in listening, speaking, reading and writing. It gives students the opportunity to explore a variety of ways to communicate to different groups of people.

PREREQUISITE: None

HEALTH, SAFETY AND PHYSICAL EDUCATION

Health/Physical Education 5 credits

The aim of the Comprehensive Health, Safety and Physical Education program at Montgomery High School is to develop the students' knowledge, skills, and attitudes necessary to lead an active, healthy lifestyle. The program provides an equitable opportunity for all students to realize the benefits of participation in physical activity. A highlight of the Comprehensive Health, Safety and Physical Education program is an outstanding aquatic experience that allows students to either learn how to swim or strengthen their swimming ability, in addition to the traditional sports, games, and fitness-directed activities.

The high school program is designed to prepare students to reach fitness goals and maintain a healthy level of physical health long after they graduate. The curriculum is complimented by a variety of lifetime and team sports offerings. All students are required to take three quarters of physical education and one quarter of health education each school year.

Health courses are designed to empower students with relevant information to help them make responsible decisions regarding their physical, social, and mental/emotional wellness. Health is a most prized possession and an integral part of every phase of life. The state of our health affects our ability to learn, live, and relate to others. The knowledge gained from the Health Education curriculum establishes a foundation for healthful, productive living.

Adolescent Wellness (Grade 9 Health)

This course is designed to develop knowledge, concepts, skills, behaviors, and attitudes related to the six categories of risk behaviors in teens. Students learn and implement decision making skills and communication skills for everyday situations they experience as adolescents. We also discuss topics related to substance awareness, drug/alcohol education, coming of age, family life education and wellness/mental health.

Drivers Education (Grade 10 Health)

The emphasis of the Driver's Education course is learning the rules of the road and practical driving. Students will apply their driving knowledge through group work and small projects which emphasize driver safety and rules of the road. Practical driving concepts teach future drivers how to assess and manage the risks involved when behind the wheel of a vehicle.

Students will also address how certain mental, physical, and emotional factors can affect their driving ability. Our goal is to mentally prepare MHS students to become safe, responsible, licensed drivers. Students will prepare for and be administered the New Jersey State Written Drivers Exam at the end of the course.

First Aid, CPR and AED (Grade 11 Health)

The Junior Health program helps participants recognize and respond appropriately to cardiac, breathing and first aid emergencies, as well as preventative measure to avoid illness/injury or disease. This course is conducted by certified American Red Cross Instructors. Each student will have the opportunity to acquire certification in Adult, Child and Infant CPR/AED, and First Aid. The courses in this program teach skills that participants need to know to recognize and give immediate care to a suddenly injured or ill person until more advanced medical personnel arrive and take over. Hands-on instruction guides this class through the training of prevention and skills that may help them to save a life one day.

Human Sexuality and Family Living (Grade 12 Health)

This course is designed to enhance a student's understanding of relationships and basic concepts related to human sexuality. Class discussion and group projects related to current topics such as communication, gender identity, relationships, dating violence, disease prevention, contraception, pregnancy, suicide prevention skills and coping with loss are an integral part of the class. Students will be expected to analyze and develop skills to make healthy decisions as teenagers while preparing to transition into adulthood.

8500 Peer Leadership Program (Peer I) 5 credits

The Peer Leadership Program trains selected juniors and seniors to work with small groups of freshmen to aid in the transition to high school and develop a sense of community among our diverse student body. Throughout the school year, Peer Leaders will plan and facilitate lessons to groups of ninth graders focusing on increasing self-awareness, improving communication skills, and exploring typical adolescent issues while helping to empower each student to reach their maximum potential and develop life values that enhance social responsibility. Students are selected based on a rigorous application and interview process and are required to attend training.

85100 Peer II

5 credits

This course is offered to those students who have successfully completed Peer I. Peer II will focus on advanced group facilitation skills and community outreach projects that are centered around transitional experiences, social-emotional learning, and transferring the knowledge that fosters a sense of self-awareness, communication skills, and the exploration of typical adolescent issues. Peer II students are selected based on a rigorous application and interview process and are required to attend training.

OPTION II PHYSICAL EDUCATION PROGRAM

Option II Physical Education is offered to permit students to participate in an elite level of competition in a sport that is not offered through Montgomery High School. The time commitment to complete this program is extremely rigorous, requires a high demand of effort from each student enrolled, and has a need for release time during the school day.

APPLICATION PROCESS:

1. Any student interested in an Option II Physical Education Program is encouraged to meet with the Montgomery High School Health & Physical Education Supervisor Mrs. Naoma Green prior to approval. Please call 609 466-7600 Ext 6113 for an appointment. Students are encouraged to speak to their guidance counselor prior to meeting with Mrs. Green to discuss all of the components related to their schedule.
2. The parents/guardians and student will complete an application and submit it to the Montgomery High School Health & Physical Education Supervisor, Mrs. Naoma Green by May 8th, 2020. *Each application is reviewed on a case-by - case basis by the Option II Physical Education Program Committee.*
3. An Option II Physical Education Program will not be approved if it is a program that is offered through the Montgomery High School Athletic Department.
4. In order for an Option II Physical Education Program to be considered for approval it must meet the New Jersey Core Curriculum Content Standards for Physical Education Grades 9-12.
5. In order for an Option II Physical Education Program to be considered for approval, the

instructor/coach of the program must be certified or hold credentials in the relevant discipline.

6. In order for an Option II Physical Education Program to be considered for approval, the instructor/coach of the program must provide a letter to the supervisor of Health and Physical Education by May 10th, 2019, which identifies the following information:
 - Weekly number of hours the student will participate.
 - The demonstrated need for the student to have release time in order to participate. If so, when.
 - Instructor's credentials
 - The rigor and past successes of the program
 - If the student is eligible for special education services and has an Individualized Educational Plan, how will the program meet necessary modifications?
 - Identify what evidence the program will provide to demonstrate successful attendance.
 - Contact information
7. In order for an Option II Physical Education Program to be considered for approval, the student will need to demonstrate a need for release time from their school day. This release time is to be utilized for practice in their sport under their coach's supervision and the student may remain on school grounds only with prior administrative approval during that time.
8. In order for an Option II Physical Education Program to be considered for approval, the student will need to accrue a minimum of 130 hours in their respective program per quarter.

AFTER APPROVAL:

9. Any approved Option II Physical Education Program is in place of a student's physical education course only; students who are approved for an Option II Physical Education Program will be required to take their scheduled Health course during one of the four quarter periods. Sophomore and Senior Health is only offered during quarters 1 and 2, while Freshman and Junior Health is only offered during quarters 3 and 4.

10. Students who have an approved Option II Physical Education Program are not permitted to enroll in any additional courses.
11. Students who have an approved Option II Physical Education Program will receive either a Passing (P) or Failing (F) as a grade.
12. A student's failure to adhere to the requirements of an Option II Physical Education Program due to a non-medical reason will result in the immediate enrollment of the student in a Montgomery High School Physical Education course, and the grade of (F) if their withdrawal from the program occurs beyond the eleventh day of the quarter.
13. Students who are injured and unable to participate in their approved Option II Physical Education Program must inform the Supervisor of Health and Physical Education immediately.
14. These students will be required to adhere to the same procedures as students enrolled in a Montgomery High School Physical Education course that is on a Physical Education Medical.

GRADING (end of each quarter):

15. Students who have an approved Option II Physical Education Program are responsible for submitting, to the Supervisor of Health and Physical Education, evidence of their minimum 130 hours on the last day of the quarter. Submission of the minimum 130 hours must include verification from the student's instructor/coach. Students are responsible for submitting their hours in each quarter in which they do not have Health.
16. Students who have an approved Option II Physical Education Program are responsible for submitting, to the Supervisor of Health and Physical Education, a one page typed reflection of their experiences and thoughts about their respective program. The reflection is due to the Supervisor of Health and Physical Education on the last day of the quarter. Students are responsible for a reflection in each quarter in which they do not have Health.
17. The instructor/coach of the student who has been approved for an Option II Physical Education Program is responsible for submitting evidence to the Supervisor of Health and Physical Education, on the last day of the final quarter in which the Option II Physical Education Program

is taken by the student, that the following goals have been addressed in the student's Option II Physical Education Program:

- Goal 1 The student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.
 - Goal 2 The student demonstrates an understanding of movement concepts, principles, strategies and tactics as they apply to the learning and performance of physical activities
 - Goal 3 The student achieved and maintained a health enhancing level of physical fitness.
 - Goal 4 The student exhibited responsible personal and social behavior that respects self and others in physical activity settings.
 - Goal 5 The student valued physical activity for health, enjoyment, challenge, self-expression, and /or social interaction.
18. Failure to provide the Supervisor of Health and Physical Education with any of the above required items (verification of hours, student reflection, and instructor/coach goal evaluation) on the last day of the quarter will be viewed as non-compliant to the Option II Physical Education Program procedures and result in a grade of (F) for the quarter.
 19. In consideration of the application, the Supervisor of Physical Education may visit and assess the site of the Option II Physical Education Program. The environment's facilities should be designed to help meet the student's educational goals.

INDEX

Advanced Algebra and Trigonometry, 22
Advanced Ceramics, 44
Advanced Drama III, 47
Advanced Photography, 44
Algebra I, 21
Algebra I w/Lab, 21
Algebra II, 22
Algebra II Honors, 22
Algebra III, 22
Algebraic Functions and Analysis, 22
American History and Culture through Film, 19
Anatomy & Physiology, 29
AP Art History, 18
AP Art Studio Concentrations, 43, 44
AP Biology, 28
AP Calculus AB, 23
AP Calculus BC, 23
AP Calculus C, 23
AP Chemistry, 27
AP Computer Science A, 39
AP Economics, 18
AP Language and Composition, 15
AP Literature and Composition, 15
AP Environmental Science, 29
AP French, 33
AP German, 34
AP Government and Politics, 18
AP Photo/2D Portfolio, 44
AP Physics C: Mechanics, 26
AP Spanish, 36
AP Statistics, 24
AP Studio Art or 2D Portfolio, 43
AP U.S. History II, 17
Applied Algebraic Extensions, 22
Architectural Design I, 40
Architectural Design II, 40
Astronomy, 29
Basic Accounting, 39
Biology, 28
Biology Honors, 28
Biotechnology - Honors, 30
Business Administration, 39
Business and Personal Law, 39
Calculus, 23
Career Exploration, 38
Ceramics, 44
Ceramics II, 44
Chamber Choir, 47
Chamber Choir Honors, 47
Chamber Orchestra, 46
Chamber Orchestra Honors, 46
Chemistry, 27
Chemistry Honors, 27
Chorale, 47
Communication Technology, 39
Computer Applications/Computer Science, 38
Concert Choir, 46
Concert Orchestra, 46
Course Change and Credit Information, 7
Course Descriptions, 12
Course Withdrawal, 7
Creative Writing Seminar I, 16
Creative Writing Seminar II, 16
Crime and Punishment, 19
Culinary Arts II, 41
Discrete Mathematics, 23
Early Dismissal, 8
Early Graduation, 2
Elements of Human Behavior, 19
Engineering I, 41
Engineering II, 41
Engineering Design & Material Fabrication I, 41
Engineering Design & Material Fabrication II, 41
English, 13
English AP & Honors Course Expectations, 13
English Literature and Composition 9, 13
English Literature and Composition 9 - Honors, 13
English Literature and Composition 10, 13
English Literature and Composition 10 - Honors, 13
English 11 course descriptions/options, 14
English 12 course descriptions/options, 15
Environmental Science, 29
Expository Writing Workshop, 16
Family & Consumer Sciences/Culinary Arts, 41
Fashion and Clothing, 42
Financial Literacy, 39
Foundations of JAVA, 38
French 1, 33
French 2, 33
French 3, 33
French 4 - Honors, 33
Game Design & Application Development, 38
General Biology, 28
General Chemistry, 26
Geometry, 21
Geometry w/ Lab, 21
Geometry - Honors, 21
German 1, 33
German 2, 34
German 3, 34
German 4 - Honors, 34
Grading, 5
Grade Point Average, 4
Grading Information, 3
Graduation Requirements, 1
Health, Safety and Physical Education, 48

Honors Math Methods in
 Engineering and the Sciences, 24
 Honors Portfolio - Art, 43
 Honor Rolls, 3
 Incomplete Grades, 8
 Industrial Arts/Pre-Engineering, 40
 Integrated Physical, Earth & Life and Sciences, 26
 Introduction to Computer Languages, 38
 Introduction to Culinary Arts, 41
 Introduction to Drama I, 47
 Introduction to Drama II, 47
 Introduction to Entrepreneurship, 39
 Introduction to Studio Art, 43
 iSTEM - Advanced Scientific
 Investigations, 29
 iSTEMi - Advanced Independent
 Scientific Investigations - Honors, 30
 Journalism I, 38
 Journalism II, 38
 Journalism III - Portfolio, 38
 Latin 1, 36
 Latin 2, 36
 Latin 3, 36
 Latin 4, 36
 Latin 4 Honors, 37
 Level Changes, 7
 Life Skills, 42
 Math Connections I, 21
 Math Connections IV, Parts 1 & 2
 Alternative High School Assessment (AHSA), 21
 Mathematics, 20
 Math Prerequisites, 20
 Mathematics Proficiency Tests, 20
 Media & Graphic Communication I, 40
 Media & Graphic Communication II, 40
 Microelectronics - Honors, 30
 Music, 45
 NCAA, 8
 Organic Chemistry - Honors, 30
 Option II Guidelines, 9
 Option II Physical Education, 49
 Peer Leadership Program, 48
 Peer II, 49
 Photography I, 43
 Photography II, 43
 Physics, 26
 Physics Honors, 26
 Portfolio Projects, 41
 Architecture, 41
 Computer Aided Drafting & Design, 41
 Engineering, 41
 Media & Graphics Communication, 41
 Power, Energy & Transportation Technology, 41
 PreCalculus, 23
 PreCalculus - Honors, 23
 Prerequisites, 6
 Proficiency Assessments, 10
 Public Speaking, 47
 Radio Broadcasting, 40
 Seal of Bilingualism, 32
 Science, 25
 Sociology, 18
 Social Studies, 17
 Social Studies AP & Honors Course Expectations, 17
 Somerset County Vocational Technical School, 11
 Spanish 1, 34
 Spanish 2, 35
 Spanish 3, 35
 Spanish 3 - Honors, 35
 Spanish 4, 35
 Spanish 4 - Honors, 35
 Spanish 5, 36
 Speech Arts, 47
 Sports Entertainment & Marketing, 39
 Statistics, 24
 STEM and STEAM, 6
 Studio I, 43
 Studio II, 43
 Symphonic Band, 45
 Symphonic Winds, 45
 Television Production I, 39
 Television Production II, 40
 Television Production III, 40
 The Art of Baking, 42
 The U.S. in a Modern World - Honors, 18
 Transfer Students, 4
 U.S. History I, 17
 U.S. History I - Honors, 17
 U.S. History II, 17
 Visual and Performing Arts, 43
 Visual Design, 44
 Waiver Applications, 6
 Weather and Meteorology, 29
 Webpage Design & Development, 38
 Wind Ensemble, 45
 Wind Ensemble Honors, 46
 World Languages, 31
 World Language Prerequisites, 31
 World Language Placement Testing, 31
 World Language Proficiency Testing, 31
 World Studies, 17
 World Studies Honors, 17