AP courses provide students with the mathematics content and analytical skills expected in a college level course. Teachers of AP courses follow a required course outline and prepare students with the knowledge and skills necessary to be successful on the Advanced Placement examination which takes place in May. Before signing up for an AP course, please review the chart below and ask yourself if you are a student who

- is interested in the content?
- has excellent attendance?
- is willing to invest the extra time needed for a college level class?
- has strong organizational and time management skills?
- has strong reading and writing skills and is willing to improve them?
- is an independent learner?

The chart below provides an approximation of the time and assignments for each AP course offered in the Mathematics Department and may vary from student to student. Different teachers for the same course may have slightly different procedures, but the time commitment is about the same. And according to school policy, students are reminded that they may not drop an AP course until the end of the first quarter and until they show sufficient effort in the class.

Area of Study	Reading to prepare for each class	# of hours to study/prepare for each class	Tests, Essays, Papers	Major Projects	Summer Assignments	Comments
AP® Calculus AB *Emphasizes the theory of elementary functions and presents the differential and integral Calculus of one-variable functions. Equivalent to 1.5 semesters of college Calculus.*	Reviewing upcoming topic for daily lecture. 10 to 20 homework problems a night, but higher level and multi-step problems. Problems are not repetitive.	At least one hour for each class. A minimum of one-two hours for quizzes or exams, given that students are studying DAILY.	1-2 quizzes per unit, typically given WITHOUT the aid of a calculator. 1 major AP college level exam per Unit	Project after the AP exam	Review Packet of major concepts and skills from Precalculus with Trigonometry.	In addition to STRONG content interest students should: - have excellent algebra skills (A's in both Algebra 1 and Algebra 2) - have a strong grasp of mathematics concepts studied in previous years. - be willing to invest extra time before/after school - be able to master new concepts quickly and retain knowledge over time

AP® Calculus BC *Same as AB Calculus, plus the Calculus of series, polars, parametrics, and vector-valued functions. Equivalent to two semesters of college Calculus.*	5-10 pages of reading in the textbook or 4-8 pages of notes. 10-30 homework problems a night. Problems are very extensive. Some nights homework may take over an hour to complete.	At least one hour for each class. One-two hours for quizzes or exams if students are studying daily.	1 major test per Unit- both multiple choice and free- response parts; both calculator and non- calculator parts. There will be 9 Unit Tests (in 3 quarters time). Therefore, the course is paced quickly.	1 major project after the AP Exam	Review Packet of major concepts and skills from Precalculus Honors and Calculus A material. Summer Packet is REQUIRED.	This is an extremely fast-paced class. On account of this, students are expected - To have taken Precalculus Honors: this covers advanced topics such as polar functions and partial fraction decomposition, etc. - possess all qualities that make students successful in Calculus AB - **Students who are enrolled in Regular Pre-Calculus should NOT be allowed to take this course!**
AP® Statistics *Comprehensive Introduction To Experimental Design, Data Analysis, Probability, and Inferential Statistics.*	30-50 pages per week in textbook and notes. 5-10 homework problems a class.	One hour for each class One hour for quizzes or exams.	1-2 quizzes per Unit/Month 1 exam per Unit/Month with AP-level questions in free- response and multiple-choice styles. Free response are graded according to AP® Rubrics.	During the year - Survey & Data Analysis - Survey & Inference -Probability & Simulation After the AP Exam -Class project -Individual project	Review Packet of introductory skills and concepts from a general knowledge base.	This course develops critical thinking skills and involves substantially more reading than traditional math classes. Students should exhibit strong organizational and time management skills.

AP® Computer Science A **AP® Computer Science P** *Continuation of concepts and skills introduced in Intro to Computer Science with more emphasis on collections, class concepts and development.*	Short (weekly) readings from online texts Review of notes and code	One hour for each class.	1 test per Unit Periodic AP test prep assessments	Project after the AP exam	None	In addition to content interest students should: - have excellent attendance - be willing to ask questions for clarification should exhibit strong organizational and time management skills.
Precalculus with Trigonometry Honors *Includes analytical functions, trigonometry and differential Calculus*	3-5 pages of notes per class 30-50 homework problems a class.	One to two hours for each class.	1-2 quizzes per unit. One test per unit.	2-3 projects throughout the year	None	This is a rigorous and fast-paced course. Students must be willing to seek help outside of class if necessary. Strong Algebra, Geometry, and Algebra 2 analytical skills are highly recommended.
Algebra 2 Honors	3-5 pages of notes 20-30 problems for homework	At least one hour for each class. One-two hours for quizzes or exams.	1-2 quizzes per unit (3-4 weeks) Questions are free response	1-3 per year	None	In addition to content interest students should: - have excellent attendance - have a strong grasp of mathematics concepts studied in previous years. - be willing to invest extra time before/after school - be willing to ask questions for clarification - Understand that calculator use is minimized
Geometry Honors	Reading is not necessarily a requirement for this class.	Prior to each class student should expect to spend anywhere from 60-90 minutes	The course is broken into 3 major Units. Each unit is broken down into 2-3	Students should expect approximately 1-2 project per Unit. These projects use concepts we are	Ensure mastery of Algebra 1 skills: • Solving equations with multiple fractions in it	This is a challenging course that requires a different type of thinking from Algebra 1.

	Taking and/or reviewing notes is expected before each class. In addition, students should expect about 12-25 homework questions assigned each class. Questions will vary in difficulty and length.	completing what is listed in the *"Reading to prepare for each class"* column. Students should also expect to utilize bulldog block and after school to reinforce their understanding of Geometry concepts as well as remediate necessary Algebra skills.	benchmarks. There is 1 quiz per benchmark, followed by a benchmark assessment, which is then followed by a Unit Test. Only the 3 Unit Tests can be re-taken. All assessments will consist of problems that require making connections from concepts we have learned, not simply rote memory. Mastery of Algebra skills are expected on every assessment.	learning in class with an added creative outlet. Projects will be explained in class but will require out of class time to complete them in addition to regularly schedule homework.	• Multiplying Polynomials (FOIL or box method) • Factoring (when a=1 and when a≠1) Writing an equation of a line (slope-intercept & point-slope form)	Especially with transitioning to high school, this class will require a great deal of dedication and sharpening of study skills. It is expected that students really begin advocating for themselves and their understanding.

Westfield High School Mathematics Department