Curriculum Planning Document – Math			
Content Area/Grade Level: Math/High School - Developmental Math – Advanced Algebra			
Course Description: This course prepares learners for trigonometry and for whatever their next steps are in mathematics. It provides a more in-depth study of nonlinear equations, inequalities, and functions, while also covering induction, sequences, and counting. Other units include functions and conic sections. The units are intentionally sequential and use a spiraling curriculum approach to ensure that each unit builds on the previous units. The course is engaging, rigorous, and highly interactive, and was developed using proven pedagogical methodologies.			
	Educational Delivery Methodologies	**Evidence of Mastery**	**Comments**
Developmental Math – Advanced Algebra (Scope and Sequence)			
Essentials of Algebra Rules for Exponents and Radicals (Alg2.2) Applying Rules for Exponents and Radicals (Alg2.2) Review: Polynomials and Factoring (Alg1.2) Simplifying Rational Expressions (Alg 2.1) Common Denominators of Rational Expressions (Alg2.1) Sum of Rational Expressions, Part 2 (Alg2.1) Difference of Rational Expressions, Part 2 (Alg2.1) Factoring the Difference of 2 Squares (Alg1.2)	The Edmentum LMS (PLATO Courseware) as detailed in the narrative, includes a diverse set of instructional methodologies integrated into each course. These instructional methods include: computer assisted learning systems, virtual classrooms, virtual labs, electronic field trips, electronic mail and messaging, virtual tutoring, online help desk, a wide array of formative assessments and non-computer activities. The common design elements and activities combined with a thorough initial orientation video lecture support a student's quick understanding of the delivery system. This immediate understanding enables a student to focus on the	Mastery for each course will be based on the student meeting the prescribed Performance, Participation, and Progress requirements. The program is designed to foster high expectations for staff and students. The goal for all students is to meet 100% of the expected progress and 100% of the expected weekly participation. The desired performance goal for all students is to attain a score of 100% on all assignments. The minimum that will be accepted on each assignment and assessment is 70%. ***<u>Assessment and Testing</u>***	Continues Throughout Course

Factoring Algebraic Expressions (Alg2.2) Simplifying Algebraic Expressions (Alg2.2) Multiplying Algebraic Expressions (Alg2.2) Rational Expressions: Add and Subtract (Alg2.2) Rational Expressions: Multiply and Divide (Alg2.2) Solving and Graphing Equations in 1 Variable (Alg1.2) Solving Problems with Linear Equations in 1 Variable (Pre-AlgB) Solutions of Linear Equations as Ordered Pairs (Alg2.1) Equations with Absolute Values (Alg1.2) Absolute Value, Inequalities, and Interval Notation (Alg2.2) Adding and Subtracting Complex Numbers Multiplying and	content right from the beginning of the first lesson. Each course utilizes a variety of methods and has the flexibility to allow teachers to modify the program to suit individual student learning needs. The Edmentum LMS (PLATO Courseware) enables the teacher to employ numerous educational delivery options for each online course. The ability to modify delivery methods empowers teachers to efficiently and effectively support differentiation of instruction, customized assessments, and supplementation of course material for different learning styles. Providing online students a choice in how they absorb content is considered a key to supporting different learning styles. The primary delivery method for the proposed content, is web-based online delivery. Based on needs identified by teacher monitoring, formative and summative assessment, or student request, the delivery method can be modified	Best practices in assessment and testing call for a variety of activities to evaluate student learning. Multiple data points present a more accurate evaluation of student strengths and needs. **Formative and Summative Assessments** contained in the web-delivered content, which include authentic learning and objective assessments are used to show mastery: • Unit pretests (typically designed for credit recovery use) • Mastery tests • Lesson Activities • Unit Activities • Online Threaded Discussions • Unit Post-Tests • End-of-Semester Exam **<u>Authentic Learning Assessments</u>**: Of the assessment tools available in this course, three are	

Dividing Complex Numbers Plotting Complex Numbers in the Plane Solving Quadratic Equations by Factoring, Part 3 (Alg1.2) Factoring or Using the Quadratic Formula (Alg2.2) **More Nonlinear Equations & Inequalities** Slope-Intercept Form Point-Slope Form Parallel and Perpendicular Lines and Their Slopes Cartesian Coordinates Using the Distance Formula Using the Midpoint Formula Solving and Graphing Systems of Equations (Alg1.1) Solving Problems with Systems of Linear Equations (Alg1.1)	in numerous ways. **<u>Flexible deliverability</u>** **All online materials are printable.** The interface and font of the content can be adjusted to minimize the amount of ink used in printing. **eNotes**: In lieu of paper notes, the students have the option to take eNotes while listening to & interacting with the tutorials or while studying the online readings and content. These notes can be made available at the end of lesson or course assessment at the discretion of the teacher and the individual student. **Secure internal messaging system:** provides the option for synchronous or asynchronous support of student learning. **Teacher online office hours:** Teachers provide four hours of online synchronous office hours. Additional synchronous time can be requested by students as needed. **Phone communication**	designed specifically to address higher-level thinking skills and operations: Lesson activities, unit activities, and discussions. These authentic learning activities allow students to develop deep understanding and provide data for the teacher to assess knowledge development. They also provide a tool for assessing identified Common Core mathematical practices, inquiry skills, STEM skills, and 21st century skills. The following comments address their use for assessment. • **Lesson Activities** immerse the student into one or more in-depth problems that center on developing a deep understanding of the learning objective. All Lesson Activities in this course are self-checked by the student;	

Linear Equations in 1 Variable: Solving by Inspection (Alg1.1) More Difficult Linear Equations in 1 Variable (Pre -AlgB) Solving Linear Systems of Equations: Addition (Alg2.1) Solving Linear Systems of Equations: Substitution (Alg2.1) Solving Linear Systems of Equations: Graphs (Alg2.1) Solving Line ar Systems of Equations: Matrices 1 (Alg2.1) Solving Linear Systems of Equations: Matrices 2 (Alg2.1) **Functions** Determining Whether a Relation is a Function Finding the Domain and Range of a Function Graphing Absolute Value Functions Product of Polynomials	**as required.** Teachers will have access to phone numbers and refer students and parents to a phone conference as required. **Supplemental assignments:** The content can be delivered by all lessons or one lesson at a time. Teachers may determine that an alternative assignment that covers the same objective may be appropriate. These alternative assignments will be approved by the Administration and delivered electronically to the student. **Supplemental resource links:** Students may seek out additional information or guidance about a lesson objective by utilizing a personal search engine such as Google. Teachers will also collect and send out additional resource links as the need arises. All links will be submitted for approval by the administrator. **Practice exercises:** The teacher may assign practice exercises in addition to the online content. The teacher would have the	however, it is possible to submit this work for teacher grading on paper, by email, or by creating a drop box activity in the course learning path. • **Unit Activities** are similar to Lesson Activities, but more time intensive and require a more integrative understanding of the unit's objectives. Unit activities are teacher graded and submitted through the drop box. These activities allow the instructor to score work on a scale of 0 to 100. A 10-point suggested rubric is provided to both the student and the teacher for this purpose. A	

(Alg1.2) Functional Values (Alg2.2) Defining a Function with Its Rule (Alg2.2) Finding Values of a Function Using Its Rule (Alg2.2) Equations and Graphs of Functions, Part 1 (Alg2.2) Equations and Graphs of Functions, Part 2 (Alg2.2) Composite Functions (Alg2.2) Determining if a Function Has an Inverse (Alg2.2) Inverse of a Function (Alg2.2) **Nonlinear functions** Evaluating Rational Expressions (Alg 2.1) Restrictions on Rational Expressions (Alg 2.1) Review: Rational Expressions (Alg2.1) Translations Translations and	opportunity to weight these additional assignments as part of the lesson performance score, as part of the participation grade, or as extra credit. Any editing or adjustment of the student's score requires a full justification in the notes section at the time the teacher makes the change. **Universal access:** The content is available at all times and on all days. Students will be able to access their online content as long as they have access to the Internet. Those that seek help from someone that may not have a computer or Internet may print the material and seek help while working on the paper version. **Learning Aids:** Learning aids within the courseware that are designed to assist students include: • eNotes • Resource Folder • Dictionary • Text to Speech (content reader) • Translator (16 languages) • Scientific Calculator	minimum score of 70% is required. • **Discussions** encourage students to reflect on concepts, articulate their thoughts, and respond to the views of others. Thus, discussions help teachers assess students' critical-thinking skills, communicatio n skills, and overall facility with the unit concepts. Each unit in this course has one predefined discussion topic. Instructors can customize the course, however, to include additional discussion topics. Online discussions may use whatever rubric the instructor sets. A minimum	

Transformations (Alg2.2) Quotient of a Binomial and Polynomial (Alg1.2) Dividing Polynomials using Synthetic Division Exponential Decay (Alg2.2) Exponential Growth (Alg2.2) Properties of Exponential Functions (Alg2.2) Properties of Logarithmic Functions (Alg2.2) Recognizing Graphs of Types of Functions (Alg2.2) Solving Problems: Exp onential and Logarithmic (Alg2.2) **Induction, Sequences & Counting** Patterns and Sequences (Alg1.1) Introduction to Sequences and Series Arithmetic Sequences and Series	• Math tools (graphing tool, histogram, scatter plot, stem &leaf) Students will be guided to these tools at the time of enrollment, during the video orientation, and as the need is identified by the teacher. **All online materials are printable** **Secure internal messaging system** **Teacher's provide online office hours** **Phone communication as required** **Supplemental assignments available** **Supplemental resource links provided** **Tutorials** **Pre-tests** **Universal Access Learning Aids** • eNotes • Resource Folder • Dictionary • Text to Speech (content reader) • Translator (16 languages)	score of 70% is required. **<u>Objective Assessments.</u>** There is a specific learning objective associated with each lesson, which is assessed through objective assessments at multiple points during the course: at the end of the specific lesson, at the end of the unit, and at the end of the semester. Additionally, there are optional unit pretests. • **Unit pretests** are optional multiple-choice assessments, typically designed for credit recovery use. If a student shows mastery of a lesson's objective (70% proficiency), the student will be automatically exempted from that module in the upcoming unit. • **Mastery tests** at the end of	

Geometric Sequences and Series **<u>Conic Sections</u>** Circles and Segments Tangents Ellipse (Alg2.2) Hyperbola (Alg2.2) **<u>Trigonometry</u>** Right Angle Trigonometry The Pythagorean Theorem2 Solving Right Triangle Problems Laws of Sines and Cosines Trigonometric Equations Circular Functions Graphing Trigonometric Functions Three More Trigonometric Functions		each lesson provide the instructor and the student with clear indicators of areas of strength and weakness. These multiple-choice tests are taken online and contain randomly generated questions. A minimum score of 70% is required and a student may retake the mastery tests as many times as needed to demonstrate at least a 70% proficiency. • **Unit posttests** help instructors track how well students have mastered the unit's content. The tests are multiple-choice and are provided online. A minimum score of 70% is	

		required. • **End-of-semester tests** assess the major objectives covered in the course. The End-of-Semester Test will be proctored (required) and a minimum score of 70% is required. Remediation assignment will be provided if a student does not meet the 70% requirement, and then a new End-of-Semester test will be administered. By combining the unit pretest (if applicable) and unit posttest information with the end-of-semester test results, the instructor will gain a clear picture of student progress. The tests are multiple-choice (randomly generated questions) and are provided online.	

		Remediation: Students that attain less than 70% on assignments will be required to complete a remediation assignment and make corrections to the assignments and eNotes. Teachers will work with the student to assist and reteach as needed. **Instructional Feedback:** Teachers will provide instructional feedback in teacher-graded assignments. Students will email the teacher with confirmation that the teacher's comments and instructional was read and understood. **A midterm project** is required. (Selected by the Teacher approved by administration) Examples include: • Virtual field trip • Group or individual service learning activities • Video presentation • Web portfolio • Book Report • Research Project	

		A final research paper is required. (Assigned by the teacher, approved by administration) • It relates to or enriches course content • Students will have multiple topic options • Students may request an alternate subject (in a timely manner & appropriately) • MLA format is required • Six traits rubric used **<u>Scoring Rubric will vary based on type of activities in each course. Example:</u>** • Participation and Progress = 10% • Discussions = 10% • Drop Box (Unit/ Lesson Activities) = 20% • Post Unit Tests = 20% • Midterm Project = 10% • End-of-Semester Test = 20% • Final Research Paper = 10% Total=100%	

		<u>Curriculum Reports:</u> Edmentum LMS (PLATO Courseware) provides a wide array of reports that provide useable data concerning mastery of each lesson and assignment. Reports include: • Learner Progress Report by Learner • Learner Progress Report by Class • Learner Daily Usage by Learner • Learner Daily Usage by Class and Assignment • Curriculum Items Response Report Curriculum Strengths and Needs by Class Unit Pre-Tests Module Mastery Tests Drop Box Activities Post Unit Tests End of Semester Test	