Olympian High School

"*Where Champions are Made*"

Course Syllabus

Integrated Math III

Revised June, 2015

Olympian High School

Course Syllabus

Integrated Math III

Instructor		**Phone**	
Room		**E-mail**	

Course Description:

It is in Mathematics III that students pull together and apply the accumulation of learning that they have from their previous courses, with content grouped into units. They apply methods from probability and statistics to draw inferences and conclusions from data. Students expand their repertoire of functions to include polynomial, rational, and radical functions. They expand their study of right triangle trigonometry to include general triangles. And, finally, students bring together all of their experience with functions and geometry to create models and solve contextual problems. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Pre-requisites:

Completion of Integrated Math II

Text and Materials:

The text for this course is "***College Preparatory Mathematics, Core Connections Integrated III***." The following is a list of highly recommended materials for this course:

- ✓ Lined Paper
- ✓ Graph Paper
- ✓ Composition Notebook/Spiral Notebook
- ✓ Pencils and Erasers
- ✓ Pens
- ✓ Colored Pencils
- ✓ Ruler
- ✓ Scissors
- ✓ Sticky Notes
- ✓ Tape and/or glue
- ✓ Section of Binder for Math or separate binder recommended

- ✓ Calculator
  - **If a student intends to take Calculus in the future:** A TI-84 Plus Graphing Calculator Silver Edition/Color Edition recommended. Students are highly encouraged, though not required, to purchase a graphing calculator for use in homework assignments and classwork. This will be an essential tool for higher level mathematics, and is allowed on the SAT and ACT.

    -OR-
  - **If a student does not intend to take Calculus, but intends to take Chemistry, the SAT or ACT:** A Scientific Calculator will be sufficient.

All courses at Olympian High School emphasize the following Habits of Mind, College Readiness Skills, and Reading Strategies:

Habits of Mind (College Preparation)

Build Intellectual Perseverance (the persistent pursuit of knowledge)

- Promote the value of a strong work ethic
- Cultivate sustained effort through repeated practice

Develop Metacognition

- Encourage thinking about the quality of one's own and others' thought processes
- Practice intellectual humility
- Become comfortable with the discomfort of ambiguity

Create Intellectual Curiosity and Rigorous Engagement

- Foster a desire to know
- Require inquiry and investigation

College Readiness Skills

- **Knowledge** – describe using discipline-specific academic language
- **Comprehension** – summarize by distinguishing the main idea from supporting detail
- **Application** – relate/apply the appropriate tools/processes to new situations
- **Analysis** – compare and contrast in order to support inferences and draw conclusions
- **Synthesis** – combine ideas in order to develop new insights
- **Evaluation** – justify according to a set of standards or criteria

Purposeful Reading Strategies for Mathematics

Pre-reading: Previewing
Skimming
Predicting

First Reading Strategies: Identifying text structure
Identifying unknown words and phrases,

Identifying key terms and concepts
Posing questions to clarify

Re-reading Strategies: Confirming key concepts and main ideas
Finding answers to posed questions
Summarizing the learning

Citizenship Expectations:
Students are expected to be active participants and make a positive contribution to the atmosphere and work of the classroom. They are also expected to complete their assignments on time, arrive on time prepared to learn, and follow all classroom rules.

Formative Work:
Homework and practice are valued as a necessary component to the learning process. The primary purpose of homework is to build understanding in order to increase student achievement ad demonstrated on a summative assessment. Homework will be scored based upon completion.

Assessments:
Short quizzes will be given throughout each unit. These are used to inform instruction. Summative assessments (Unit Exams) will include constructed response, multiple-choice, open-ended, and on-demand writing questions. Unit summative assessments may be retaken to improve mastery of topics. (See "Mastery Model" section below).

Grading Policy: Students' grades will be based on the following:

- 80% Assessment
- 20% Other work

Standard letter grades (A to F) will be assigned to indicate student progress towards mastery of learning objectives and district/state standards.

Mastery Model:

Olympian High School's Mastery Model grading principle is based on the following beliefs:

1. All Students can achieve at high levels
2. Not all students learn at the same rate
3. All learning targets are clear and transparent
4. All assessments meet district standards
5. Deep understanding or higher levels of proficiency are achieved only as a result of trial, practice and adjustments based on feedback and more practice.
6. Students learn more when their school/teacher offers timely, directive and systematic interventions that guarantee them additional time and support when they experience difficulty.
7. Re-teaching and re-assessment opportunities provide student access to mastery (and teach perseverance).

Mastery Model Protocol (before next unit ends):

1. Complete tutoring/study guide or other work as assigned by teacher.
2. Study to prepare for re-test
3. Re-test

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Accessing Grades:

Students and parents in all mathematics classes will be able to access grade reports and scores at any time by logging on to www.jupitergrades.com .

Content of Integrated Mathematics III:

- Unit 1 – Exploring Integrated III
- Unit 2 – Transformations of Parent Graphs
- Unit 3 – Solving Inequalities
- Unit 4 – Normal Distributions and Geometric Modeling
- Unit 5 – Inverses and Logarithms
- Unit 6 – Three-Variable Systems and Logarithms
- Unit 7 – Trigonometric Functions
- Unit 8 – Polynomials
- Unit 9 – Rational Expressions and Trigonometry
- Unit 10 – Series
- Unit 11 – Simulating Sampling Variability
- Unit 12 – Analytic Trigonometry

Standards for Mathematical Practice:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.