# Loyola High School

## Secondary 3 Mathematics

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|---|---|---|
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**Online Textbook and Resource:** - **Math-Help-Services (MHS)** http://math-help-services.org
- **Visions** Textbook (can be borrowed from library as a reference)

**Websites:**   http://moodle.loyola.ca (contains topic-by-topic information)
http://vweb.loyola.ca/powellt/Math3_A/sec3index.htm (general info for Sec. 3 Math)

**Supplies:**   Duo-tang, loose leaf, **pencils, eraser,** ruler. Binder is optional.
Basic scientific calculator (TI-30X IIS is recommended).

## Evaluation

**Term mark distribution:**  Term 1 - 20%        Term 2 – 20%        Term 3 – 60%.

**Competencies:** - **Communication & Reasoning: 70%**
Tests 50%, Quizzes and Assignments/Homework 20% (Final weightings may vary).
- **Situational problems: 30%.**

## Exams

- At least one Situational Problem will be given each term.
- A mid-year reasoning evaluation will be written during the December Exam period.
- The June exams cover the entire year's work and worth 50% of the term 3 grade.

## Homework/Assignments

Homework is assigned daily. It will be collected and marked sporadically. Assignments, practice examples and problems will be done in class and completed at home if needed. Failure to complete homework will result in loss of marks and/or disciplinary action.

## Quizzes

Quizzes may be given without prior warning to evaluate day-to-day understanding of current material.

## Tests

Class tests will be given each term. Students are responsible for advising parents/guardian about test results. An email will be sent to parents to inform about upcoming scheduled tests. Homework, quizzes and tests are to be **done in pencil** (penalty for work not done in pencil).

**Extra help:**  Math extra help is available after school every day in the Math tutorial room and with individual teachers as posted on the course Moodle page.

**Advancement**

Secondary 3 is an important year as it marks the transition of a student from cycle 1 to cycle 2. A mark of 75% is required in Sec. 3 to pursue NS Math (Science profile) in Sec. 4; otherwise students will take TS Math (Technical profile).

Students are expected to develop their work ethic, study habits and time management skills as they continue their progress in becoming independent, responsible and active learners.

## Senior Math Options
## 2018 – 2019



(Required for Loyola Phys/Chem option)

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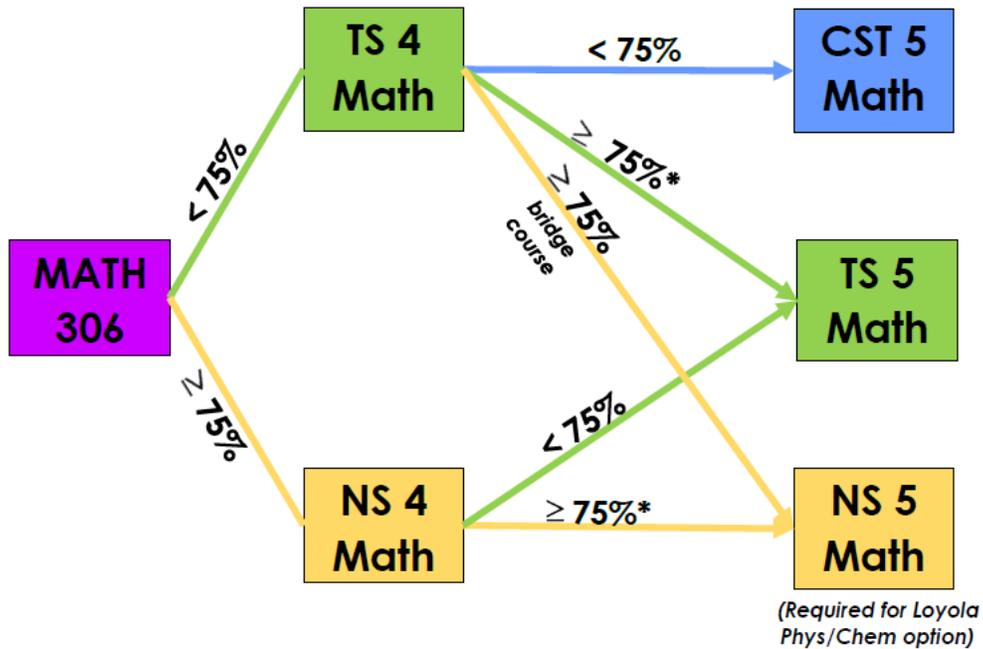
\* TS4 and NS4 students achieving a final grade that does not meet the respective sec 5 course requirement, must attend summer school and write the MEES July supplemental exam. The minimum mark prerequisite must be achieved in order to remain in the same course stream the following year.

# Course Outline

**Pythagorean Theorem
and Real Numbers**
-Solving for sides of right triangles
-Pythagorean triples
-Right triangles on the grid (Cartesian plane)
-Number sets (Rational and Irrational - Real numbers)
-Interval and set builder notations for sets of Real numbers
-Representing intervals on a number line
-Classifying the various number sets

**Algebraic Expressions**
(Calculators not permitted)
-Properties of exponents (+ and - rational)
-Scientific notation (÷ , ×, +, - )
-Addition and subtraction of polynomials
-Multiplication and division of polynomials
-Distributive Property
-Various applications (i.e geometry and word problems)
-Simplifying algebraic expressions

**Factoring**
(Calculators not permitted)
-Greatest common factor
-Simple trinomials
-Grouping
-Complex Trinomials
-Difference of squares
-Simplifying rational expressions (multiplication and division)

**Equations/Inequalities**
(Calculators not permitted)
-Solving equations and application word problems
-Building and solving inequalities
-Solving quadratic equations (by factoring)

**Relations and functions**
-Definition of functions
-Modes of representation (tables, Cartesian graphs, rule, description)
-Characteristics and Properties of functions
  (i.e. domain, range, max, min, increasing, decreasing, +, - )
-Graphing of different types of functions  (i.e. zero, rational, partial, direct and squared)

**Linear Relations**
-Rate of change
-Initial value
-Equation of a line in standard form $y = ax + b$
-x & y intercepts
-Linear Systems (limited to the form $y = ax + b$)
-Point of intersection (Solving through comparison method)
-Parallel, perpendicular, vertical and horizontal lines
-Comparing lines and equations (in standard form)
-Identifying the intercepts and parameters of a line given the general or function form

**Statistics**
-Measures of central tendency, (mean, median, mode, weighted mean)
-Contingency tables
-Scatter plots
-Types of correlation and coefficient

**Volume / Area**
-Metric conversions for volume, capacity and area
-Applications for prisms, pyramids, spheres, cylinders, cones and decomposable solids

**Probability**
-Dependent/ Independent outcome/ events
-Probability of outcomes and events
-Contingency tables and tree diagrams
-2 ring Venn Diagrams
-Conditional probability
-Geometric probability