Module Title | Maths - S2
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Module Syllabus no. (if any) | 
Year offered | 2011
Start date | 
End date | 
Syllabus / Content / Learning Outcomes | Follow MOE Secondary 2 Maths syllabus as attached in the Annex 1
No of teaching hours | 4hrs x 5days x 8 weeks = 160 hrs
Teaching Methods | Classroom teaching, exercises and assessments.
Assessment Methods and Weightages | Monthly assessments and end of course examination
Skills for maximising learning outcomes | The student must have learnt the equivalent of Secondary 1 Maths syllabus before embarking on this course.
Dates of examinations, major assessments and assignments | 
Recommended text | Mathematics 2 6th Edition Shinglee
Additional reference texts (if any) | 
Additional Remarks (if any) | 

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<tr>
<th>Lesson No.</th>
<th>Learning Outcome</th>
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| 1 | **Ratio, rate and proportion**  
Include:  
- map scales (distance and area)  
- direct and inverse proportion |
| 2 | **Algebraic manipulation**  
Include:  
- expansion of the product of algebraic expressions  
- changing the subject of a formula  
- finding the value of an unknown quantity in a given formula |
| 3 |  
- recognising and applying the special products  
  - \((a \pm b)^2 = a^2 \pm 2ab + b^2\)  
  - \(a^2 - b^2 = (a + b)(a - b)\)  
- factorisation of algebraic expressions of the form  
  - \(a^2 x^2 - b^2 y^2\)  
  - \(a^2 \pm 2ab + b^2\)  
  - \(ax^2 + bx + c\) |
| 4 |  
- multiplication and division of simple algebraic fractions,  
- addition and subtraction of algebraic fractions with linear or quadratic denominator |
| 5 | **Functions and graphs**  
Include:  
- graphs of linear equations in two unknowns |
| 6 |  
- graphs of quadratic functions and their properties  
  - positive or negative coefficient of \(x^2\)  
  - maximum and minimum points  
  - symmetry |
| 7 | **Solutions of equations**
Include:
- solving simultaneous linear equations in two unknowns by
  - substitution and elimination methods
  - graphical method
- solving quadratic equations in one unknown by factorisation
- formulating a pair of linear equations in two unknowns or a quadratic equation in one unknown to solve problems

### Set language and notation
- use of set language and the following notation:
  - Union of $A$ and $B$ $A \cup B$
  - Intersection of $A$ and $B$ $A \cap B$
  - Number of elements in set $A$ $n(A)$
  - “… is an element of …”
- “… is not an element of …”
- Complement of set $A$ $A'$
- The empty set $\emptyset$
- Universal set
- $A$ is a subset of $B$
- $A$ is a proper subset of $B$
- $A$ is not a subset of $B$
- $A$ is not a proper subset of $B$

### Congruence and similarity
Include:
- congruent figures as figures that are identical in shape and size
- matching sides and angles of two congruent polygons

### Similar figures
- similar figures as figures that have the same shape but different sizes
- properties of similar polygons:
  - corresponding angles are equal
  - corresponding sides are proportional

### Enlargement and reduction
- enlargement and reduction of a plane figure by a scale factor
- scale drawings
- solving simple problems involving similarity and congruence

### Pythagoras’ theorem
Include:
- use of Pythagoras’ theorem
- determining whether a triangle is right-angled given the lengths of three sides

### Mensuration
Include:
- volume and surface area of pyramid, cone and sphere

### Data analysis
Include:
- interpretation and analysis of:
  - dot diagrams
  - stem-and-leaf diagrams

### Probability
Include:
- probability as a measure of chance
- probability of single events (including listing all the possible outcomes in a
simple chance situation to calculate the probability)