

<b>Geogebra Application Developer</b>	
<b>Class: B.Sc.II</b>	<b>Level: 5</b>
<b>Name of Co-ordinator: Miss.B.R.Tambe</b>	

### Department of Mathematics

1. Title: Geogebra Application Developer
2. Year of implementation: 2020

#### Structure of Skill Development Course

Level	Theory Hours	Practical Hours	Total Hours	Credits	No. of students in batch
7	20	30	50	03	30

### Syllabus

#### Learning Objectives:

1. To introduce Geogebra.
2. Student should be able to prove the mathematical theorem graphically using Geogebra Software.

#### Theory Syllabus (20 Hrs)

##### Unit I: Introduction to Geogebra

About Geogebra Software, About geogebra website, how to use the online interface of Geogebra, online resources available to teach various branches of Math using Geogebra, Download and install Geogebra on Linux OS, Open Geogebra in ubuntu Linux using Dash home, Benifites of Geogebra, About Geogebra interface, Menu bar and Geometric tools, Open Geogebra interface in Ubuntu Linux and windows 10OS, how to delete objects, enable and disable grid and axis, Algebra and graphics views,

change object properties of lines, Dependent and independent objects, properties of graphics view.

### Unit II: Mathematics with Geogebra

Basics of Triangles, Congruency of triangles, Properties of Quadrilaterals, Types of symmetry, Polynomials.

#### Practical Syllabus (30 Hrs)

List of Experiments: -----24 hr

1. Construction and prove side side side side rule of congruency.
2. Construction and proof of angle side angle rule of congruency.
3. Construction and proof of side angle side rule of congruency.
4. Construction of parallelogram using parallel lines, kites using intersecting circles, rhombus with a given length.
5. Reflection of an object about a line, about a point.
6. Rotation of an object around a point.
7. Use of input bar to type and display polynomials and Remainder theorem to divide polynomials.
8. Slope, degree, zeros, roots and factorization of polynomial using Geogebra.

Project/ Field Visits/ Industrial Visit-----06 hr

**Learning Outcomes: After successful completion of this course student will be able to**

1. Grasp experimental, problem-oriented and research –oriented of learning of mathematics, both in the classroom and at home.
2. Prove theorems using Geogebra software.

#### Recommended Books:

1. Judith and Markus Hohenwarter, Introduction to GeoGebra,(Grant, Johannes Kepler University, Linz, Austria: Judith, Markus, and the GeoGebra Team,2011), Page No.7-8 , 9-14,21-26
2. Markus Hohenwarter, The official Manual of GeoGebra, Page No.31-59,232-260

#### BOS Sub Committee:

1. Miss.B.R.Tambe

#### Expert Committee:

- Mrs. D.R. Chouhan