



Davao del Sur State College
Brgy. Matti, Digos City, Davao del Sur

MODERN GEOMETRY





PREFACE

Modern Geometry is a dynamic and essential field of mathematics that extends beyond the traditional study of shapes and figures into deeper analytical and spatial reasoning. This module is designed to guide learners through the fundamental concepts and applications of geometry, beginning with classical foundations and progressing toward more advanced topics such as conic sections, coordinate transformations, and three-dimensional space.

As reflected in the module structure, students are first introduced to Euclidean Geometry, where they explore the historical origins of geometry, undefined terms, and Euclid's postulates—principles that have shaped mathematical thinking for centuries. Building on this foundation, the module transitions into conic sections, where learners analyze circles, parabolas, ellipses, and hyperbolas, understanding their properties, equations, and real-world applications.

The module further develops learners' analytical skills through transformation of coordinates, emphasizing how algebraic techniques such as rotation of axes and the use of discriminants simplify complex equations and reveal the true nature of conic sections. Finally, the study expands into Cartesian coordinates in space, where students explore three-dimensional systems, distance formulas, and vector directions—concepts that are vital in fields such as physics, engineering, and computer graphics.

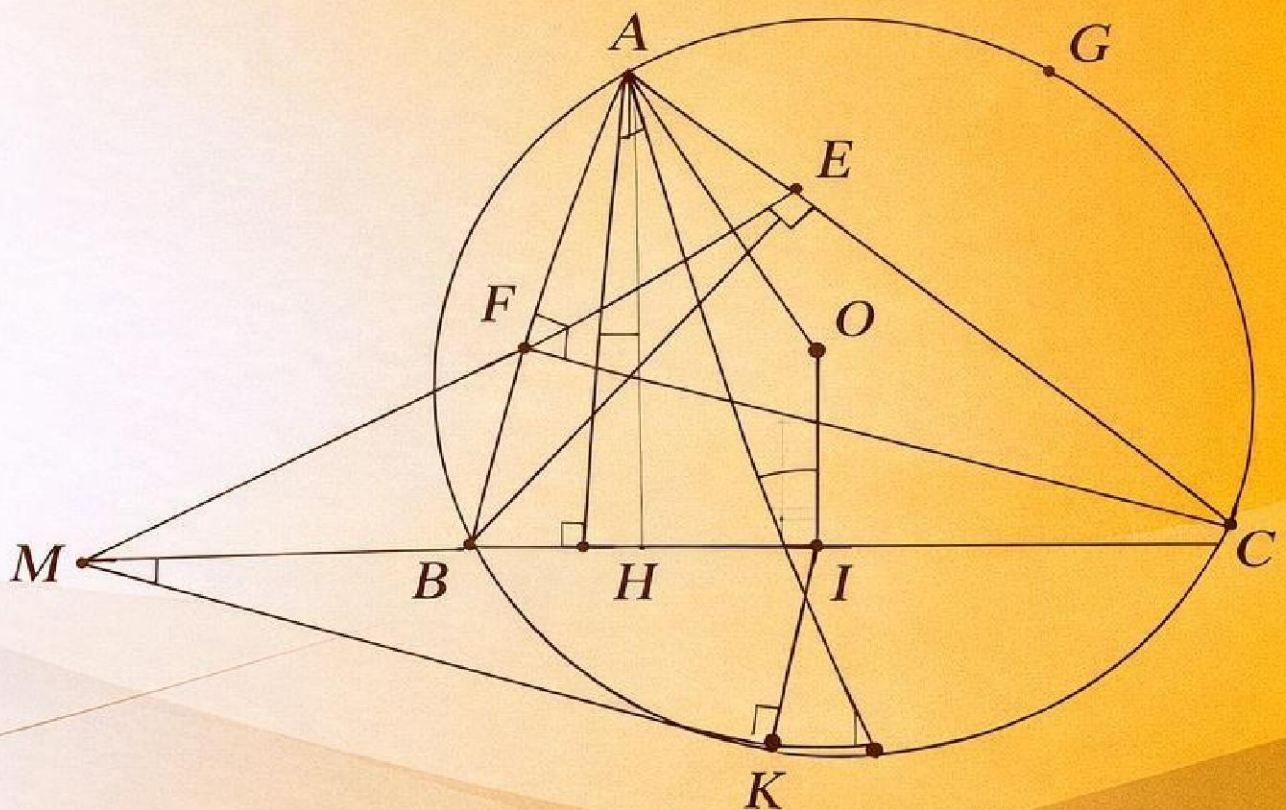
This module is carefully designed to promote not only conceptual understanding but also critical thinking, problem-solving, and spatial visualization. Each lesson integrates theory with practical applications, enabling students to appreciate the relevance of geometry in real-life contexts.

It is hoped that through this module, learners will develop a deeper appreciation of geometry as both a theoretical discipline and a practical tool, equipping them with the knowledge and skills necessary for advanced studies in mathematics and related fields.

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Instructional Module



College of Teacher Education

Davao del Sur State College

Digos City, Davao del Sur

Academic Year 2025–2026



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