Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, "modules" are also named "courses".

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	*Geometry*
Semester(s) in which the module is taught	*1*
Person responsible for the module	*Prof. Dr. Hartono M.Si.* *Dr. Dwi Lestari, M.Sc.*
Language	*Indonesian.*
Relation to curriculum	*Compulsory.*
Teaching methods	*Lecture, discussion, and assignment.*
Workload (incl. contact hours, self-study hours)	*Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks.*
Credit points	*2*
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	*After taking this course the students have ability to:* *CO1. Mastering the axiomatic/deductive method and its application in geometry.* *CO2. Conducting geometric proofs using the axiomatic/deductive method.* *CO3. Mastering the study of Euclidean Geometry in a deductive and rigorous manner.* *CO4. Mastering the study of Non-Euclidean Geometry in a deductive and rigorous manner.* *CO5. Demonstrating mastery of the axiomatic/deductive method and its application in geometry.* *CO6. Carrying out geometric proofs using the axiomatic/deductive approach.* *CO7. Demonstrating mastery of Euclidean Geometry through a deductive and rigorous approach.* *CO8. Demonstrating mastery of Non-Euclidean Geometry through a deductive and rigorous approach.*
Content	*This Geometry course covers the elements, definitions, and postulates of Euclidean geometry. Fundamental plane geometric shapes such as triangles, quadrilaterals, and polygons are discussed based on postulates and principles/theorems. The course also explores ratios and proportions as the foundation for congruence and similarity, as well as topics such as loci and geometric transformations. In addition to Euclidean geometry, non-Euclidean geometries (elliptic and hyperbolic) and their applications are also examined. The discussion is carried out rigorously, with an emphasis on logical reasoning in proving concepts, principles, and theorems. The learning process is contextual, integrative, and interactive, with a student-centered approach.*
Examination forms	*Assignments , presentations and written tests.*
Study and examination requirements	*The course assessment is divided into two main components:* 1. ***Cognitive Assessment (50%)*** *This includes the following elements:* o *Attendance: 0%* o *Quiz: 0%* o *Assignment:5%* o *Midterm Exam (UTS): 20%* o *Final Exam (UAS): 25%* 2. ***Participatory Assessment (50%)*** *This includes:* o *Case Study: 25%* o *Team-Based Project: 25%* ***Total: 100%***

Reading list	*1. Rich, B. and Thomas, C. 2009. Geometry : includes plane geometry, analytic and transformational geometries. 4th Edition. New York: McGraw-Hill Companies* *2. J.M. Aarts, 2008, Plane and Solid Geometry, New York : Springer Science+Business Media, LLC* *3. Hartono, H., Krisnawan, K. P., Arifah, H., & Saptanningtyas, F. Y. (2021). Using perturbation methods to identify periodic solutions in mass-spring system when perturbed by a wind force. DIPA UNY.*