SYLLABUS

Faculty : MIPA
Study Program : Mathematics Education
Course & Code : Plane Geometry
Credit Hours : Theory: 2 credits
Semester : II
Prerequisites & Code : -
Lecturer : Dr. Ali Mahmudi

I. COURSE DESCRIPTION

The study of Geometry includes plane geometry: points, lines, plane, angle, triangle, congruence, geometric inequalities, quadrilateral, area and perimeter, similarity, Pythagorean theorem, polygon and circle.

II. COURSE BASED COMPETENCY

The students will be able to explain concepts and properties of geometric figures and use them to solve problems either in mathematics or in other courses.

III. ACTIVITY PLAN

Week	Based Competency	Main Materials	Lecturer Strategy	References
1	Basic geometry objects	Undefined term, segment, ray, midpoint, relation between undefined terms	Discussion & presentation	A: 1-4 B: 37-42 C: 26-58 E: 3-23 F: 13-22
2	Basic geometry objects	axioms and theorems related to the undefined terms	Discussion & presentation	A: 1-4 B: 37-42 C: 26-58 E: 3-23 F: 13-22
3	Angles	Definition, type, special pairs of angles	Discussion & presentation	A: 5-7 B: 45-50 C: 59-101 F: 23-28, 37-50
4	Triangles	Definitions, type, special lines	Discussion & presentation	A: 9-12 B: 71-80 C: 102-160 E: 24-67 F: 51-58
5	Congruence	Definition, congruent triangles, theorems, application	Discussion & presentation	A: 35-47 B: 83-89 C:102-160 D:221-236 F: 59-66
6	Geometric inequalities	Inequalities in geometry, especially in triangle	Discussion & presentation	A:219-224 B: 92-98 C:161-205 D:215-219
7	Parallelism	Special pairs of angles if 2 lines cut by transversal	Discussion & presentation	A: 1-4 B: 37-42 C: 26-58

				E: 3-23 F: 13-22
8	Quadrilateral	Definition, type, properties of quadrilaterals	Discussion & presentation	A: 74-89 B:112-121 F: 85-92
9	Area and perimeter	Definition, area and perimeter of geometric figures	Discussion & presentation	A:160-174 B:131-143 C:392-424 D:422-437 E:126-161 F:103-120
10	Similarity	Definition, similar triangles, theorems, application	Discussion & presentation	A:116-149 B:153-173 C:265-318 D:578-590 F:93-102
11	MIDTERM			
12	Pythagorean theorem	Pythagorean Theorem, Projection theorem, Stewart theorem, median theorem, heron theorem	Discussion & presentation	A:134-135 B:185-158 C:410-424 D:478-488 F:67-76
13	Polygons	Definition, type, properties	Discussion & presentation	A:175-190 B:54-55 C:367-424 D:256-286 F:77-84
14	Polygons	Regular polygon	Discussion & presentation	A:175-190 B:54-55 C:367-424 D:256-286 F:77-84
15	Circle	Definition, elements, properties	Discussion & presentation	A:90-115, 180-183 B:145-146, 207-235 C:425-497 D:310-339 E:68-119 F:135-138
16	Circle	Relation between line & circle, relation between 2 circles, area, perimeter	Discussion & presentation	A:90-115, 180-183 B:145-146, 207-235 C:425-497 D:310-339 E:68-119 F:135-138

IV. REFERENCES

A. Barnet Rich. 1963. Schaum's outline of Theory and Problems of Geometry. Mc-graw Hill: New York

B. David Alan Herzog. 2004. Geometry. Wiley Publishing: New Jersey

C. Keedy, M.L etc. 1967. Exploring Geometry. Holt, Rinehart and Winston: New York

D. Serra, Michael. 2008.Discovering Geometry: An Investigation Approach. Key Curriculum Press
E. Slavin, Steve and Crisonino Ginny. 2005. Geometry, A Self-Teaching Guide. Jon Wiley & Sons: New Jersey
F. Team-LRN. 2005. Geometry Success In 20 Minutes A Day 2nd Edition. LearningExpress,LLC: New York

Suggested reference books:

Coxeter, H.S.M. (1969). *Introduction to Geometry*. New York : John Wiley.
Travers, K. (1987). *Geometry*. Homewoods, IL : Laidlaw Brothers.

V. EVALUATION

No	Component	Weight (%)
1	Tasks	10%
2	Performance in the class	15%
3	Midterm	35%
4	Final Test	40%
Total		100%

No	Component	Weight (%)
1	Tasks	20%
2	Performance in the class	15%
3	Midterm	30%
4	Final Test	35%
Total		100%