



**Department of Mathematics**

**College of Education**

**Salahaddin University-Erbil**

**Subject: Geometry**

**Course Book – 2<sup>nd</sup> Stage**

**Lecturer's name: Hemin Abdulkarim Ahmad**

**Academic Year: 2022- 2023**

**Second Semester**



<p style="text-align: center;"><b>Week 3-4</b> <b>Chapter two: Ordered Relation</b></p> <ol style="list-style-type: none"><li>1. Language Rule,</li><li>2. Notation Rule,</li><li>3. Axiom,</li><li>4. Definition,</li><li>5. Theorem 6-14</li></ol>
<p style="text-align: center;"><b>Week 5</b> <b>Chapter Three: Segments</b></p> <ol style="list-style-type: none"><li>1. Language Rule,</li><li>2. Notation Rule,</li><li>3. Axiom,</li><li>4. Definition,</li><li>5. Theorem 15-21</li></ol>
<p style="text-align: center;"><b>Week 6</b> <b>Chapter Four: The Axiom of Pasch</b></p> <ol style="list-style-type: none"><li>1. Language Rule,</li><li>2. Notation Rule,</li><li>3. Axiom,</li><li>4. Definition,</li><li>5. Theorem 22-27</li></ol>
<p style="text-align: center;"><b>Week 7-8</b> <b>Chapter Five: Convex Sets</b></p> <ol style="list-style-type: none"><li>1. Language Rule,</li><li>2. Notation Rule,</li><li>3. Axiom,</li><li>4. Definition,</li><li>5. Theorem 28-33</li></ol>

**Week 9**

**Chapter Six: Interior and Exterior**

1. Language Rule,
2. Notation Rule,
3. Axiom,
4. Definition,
5. Theorem 34-40

**Week 10**

**Chapter Seven: Angles and Rays**

1. Language Rule,
2. Notation Rule,
3. Axiom,
4. Definition,
5. Theorem 41-52

**Week 11**

**Chapter eight: Convex Quadrilaterals**

1. Language Rule,
2. Notation Rule,
3. Axiom,
4. Definition,
5. Theorem 53-54

**Week 12**

**Chapter Nine: Axiom of Congruence for Segments and Angles.**

- 1. Language Rule,**
- 2. Notation Rule,**
- 3. Axiom,**
- 4. Definition,**
- 5. Theorem 55-69**

**11. Course objective:**

At the completion of this course, students will be able to:

1. Understand the concept of systems, definition, theorem and undefined terms.
2. Understand the properties of systems.
3. Separate the different statements either proof(methods of proof), disprove or not both.
4. Apply geometric modelling to modern mathematical problems;
5. Understand the historical background of Euclidean and non Euclidean(finite) geometry and the development of Euclidean geometry.

### **Course Requirement:**

1. Students have an obligation to arrive on time and remain in the classroom for the duration of scheduled classes and activities.
2. Students have an obligation to write, homeworks, tests and final examinations at the times scheduled by the teacher or the College. Students have an obligation to inform themselves of, and respect, College examination procedures.
3. Students have an obligation to show respectful behaviour and appropriate classroom deportment. Should a student be disruptive and/or disrespectful, the teacher has the right to exclude the disruptive student from learning activities (classes) and may refer the case to the Director of Student Services under the Student Code of Conduct.
4. Electronic/communication devices (including cell phones, mp3 players, etc.) have the effect of disturbing the teacher and other students. All these devices must be turned off and put away. Students who do not observe these rules will be asked to leave the classroom.

### **Forms of Teaching:**

Different forms of teaching will be used to reach the objectives of these courses to the students: power point presentation for the course outline, head titles, definition, discussion and conclusions. Also, we shall use the blackboard for solving and explaining the examples.

### **Course Reading List and References:**

1. Foundation of Euclidean and non-Euclidean Geometry, Ellery B.Golos, Ohaio Uni.
2. A course in modern geometry, Judith N. Cederbreg
3. Geometry, H.S. M coxeter

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4. A first course in Abstract algebra, J.B. Fraleigh
5. Topics in Finite Geometry: Ovals, Ovoids and Generalized Quadrangles