The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

Course Name: Modern Euclidean Geometry
Office numbers, office hours, phone numbers, and email addresses should be listed.

Dr. Tayseer Noor

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Axiomatic systems: consistency, independence and completeness, finite projective geometry, paradoxes of Euclidean geometry, the postulates of connection, the measurement of distance, ruler postulate, order relations, plane-separation postulate, space-separation theorem, Pasch theorem, further properties of angles, triangles, congruence postulate, parallel postulate, similarity, Pythagorean theorem, theorems of Ceva and Menelous, Erdős theorem, circles, central and inscribed angles, cyclic quadrilaterals, Simson's line, nine point circle, lines and planes in space.
Course aims and outcomes:

A- Aims:
1. Master basic concepts and techniques of Euclidian Geometry.
2. Use these concepts and techniques in other mathematical courses.
3. Develop the ability of proving several kinds of problems in the subject.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

Successful completion of the course should lead to the following outcomes:

A. Knowledge and Understanding Skills: Student is expected to
A2. To identify some paradoxes in Euclidean Geometry and utilizes then to use axiomatic method in studying this Geometry.

B. Intellectual Analytical and Cognitive Skills: Student is expected to
B1. Apply the axiomatic approach to define finite projective Geometry and prove some theorems concerning the subject.
B2. Define several concepts in order to make this Geometry more accurate like between concept.

C. Subject- Specific Skills: Student is expected to
C1. Considering one case of congruency as an axiom and proving all other cases.
C2. Considering one case of similarity as an axiom and proving other cases.
C3. Proving several main theorems: space separation Theorem, Pasch’ Theorem, Cevia Theorem, Menelaus Theorem, Phytagoream Theorem.
C4. Proving several Theorems concerning circles and related subjects.

D. Creativity /Transferable Key Skills/Evaluation: Student is expected to
D1. Dealing with parallel postulate and related equivalent forms.
D2. Enable students to solve several problems concerning all subjects in Euclidean plane Geometry.
20. Topic Outline and Schedule:

<table>
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<tr>
<th>Topic</th>
<th>Week</th>
<th>Instructor</th>
<th>Achieved ILOs</th>
<th>Evaluation Methods</th>
<th>Reference</th>
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<tr>
<td>Finite Geometry, Projective and Affine Geometry (An axiomatic approach)</td>
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<td>Axioms of Euclidean Geometry.</td>
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<td>Congruence of triangles.</td>
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<td>Parallels and Parallelograms.</td>
<td>7-8</td>
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<td>Similar triangles.</td>
<td>9-10</td>
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<td>The circle.</td>
<td>11-12</td>
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<td>Lines and planes in space.</td>
<td>13-15</td>
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</table>

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Class time will be spent on lecture as well as discussion of homework problems and some group work.
- To actively participate in class, you need to prepare by reading the textbook and doing all assigned homework before class (homework will be assigned each class period, to be discussed the following period).
- You should be prepared to discuss your homework (including presenting your solutions to the class) at each class meeting - your class participation grade will be determined by your participation in this.
- You are encouraged to work together with other students and to ask questions and seek help from the professor, both in and out of class.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

<table>
<thead>
<tr>
<th>ILO/s</th>
<th>Learning Methods</th>
<th>Evaluation Methods</th>
<th>Related ILO/s to the program</th>
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<tbody>
<tr>
<td></td>
<td>Lectures</td>
<td>Exam</td>
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</table>

23. Course Policies:

According to university regulations, attendance is mandatory. If a student is unable to attend a class, then he/she should contact the instructor. If a student misses more than 10% of the classes without excuse, then he/she will be assigned a falling grade in class.

In cases of extreme emergency or serious illness, the student will be allowed to make up the missed exams. Times and dates for make up exams will be assigned latter.

There are severe sanction for cheating, plagiarizing and any other form of dishonesty. The university regulations on cheating will be applied to any student who cheats in exams or on any homework.
24. Required equipment:

Data Shows

25. References:

A- Required book (s), assigned reading and audio-visuels:

B- Recommended books, materials, and media:
د حسن الرؤف، د محمد الشره، المهندسة الزراعية. جامعة العمان الكبرى.

26. Additional information:

Name of Course Coordinator: Dr. Tayseer Noor  Signature: ------------------------- Date: 1/11/2016
Head of curriculum committee/Department: Dr. Hisham M. Hilow Signature: ------------------------
Head of Department: Dr. Baha Alzalg Signature: -------------------------------
Head of curriculum committee/Faculty: Dr. Amal Al-Aboudi Signature: -------------------------------
Dean: Dr. Sami Mahmood Signature: -------------------------------