

**SOUTHERN UNIVERSITY AND A&M COLLEGE
DEPARTMENT OF MATHEMATICS**

**MATH 450
TOPICS IN GEOMETRY**

I. DESCRIPTIVE INFORMATION

- A. Course Number: MATH 450
- B. Course Title: TOPICS IN GEOMETRY
- C. Catalog Description: Topics will be chosen from compass and ruler construction, theorems of Menelaus and Ceva, projective geometry, lattice theory, Boolean geometry, hyperbolic geometry, or Euclidean geometry. The History of Geometry is an assigned part of this course.
- E. Credit Hours: 3 hours
- F. Prerequisite: Consent of professor.
- G. Intended Audience: This course is designed for students in the sciences and those who are prospective teachers of mathematics. These learners are exposed to the best teaching practices and several teaching strategies. Multicultural education is embraced allowing for global perspectives of geometrical concepts.
- H. Course Professor:
- I. Office hours:

II. SPECIFICATION OF COURSE GOALS AND LEARNING OUTCOMES

- A. GENERAL GOALS:
 - 1. To provide students with skills that will allow them to use Geometry as a tool in other areas of mathematics as well as practical everyday situations.
 - 2. To develop skills in thinking logically.
- B. Learning Outcomes: Upon successful completion of this course, the students will be able to:
 - 1. Demonstrate an understanding of the difference between Euclidean and Non Euclidean geometries by written and/or oral presentations.

2. Demonstrate the ability to construct sound, logical formal proof of theorems by writing sequences of statements supported by reasons that lead to valid conclusions and making oral presentations.
3. Demonstrate the ability to do geometric constructions by making accurate drawings of geometric figures using a straightedge and a compass and Geometer's Sketchpad.

III. REQUIRED READING

Textbook: **Geometry Connections*; Author: Beem John K.;
 Publisher: Pearson Prentice Hall; ISBN #: 0131449265.

IV. COURSE CONTENTS

- A. Euclidean Geometry
 1. Chapter 1
 2. Chapter 2
 3. Chapter 3
 4. Chapter 4
- B. Compass and ruler construction*
 1. *Textbook 'Connections :
 2. Constructions of lines and Angles
 3. Constructions of Triangles, Polygons, and Circles
- C. Theorems of Menelaus and Ceva
 1. Chapter 1.1
 2. Supplementary resources TBA
 [i.e. <http://www.mathsisgoodforyou.com/index.htm>]
- D. Hyperbolic Geometry & Spherical Geometry
 1. Chapter 6
 2. Supplementary resources TBA
- E. History of Geometry
 1. Chapter 1
 2. Supplementary resources TBA
 [i.e. <http://www.mathsisgoodforyou.com/index.htm>]

V. DESCRIPTION OF INSTRUCTIONAL PROCEDURES

Guided Lecture	45%
Discovery Learning (small groups)	25%
Hands-on (Minds on) Computer Lab	15%

VI. COURSE REQUIREMENTS

A. Academic

Each learner enrolled in this course has set expectations!

- 1) Take and pass chapter examinations.
- 2) Complete all assignments given during the course of the semester. For computer Lab exercises- Learners will be assigned challenges requiring the use of Geometer's Sketchpad and/or the Internet. The MATHEMATICS LAB is located in 318 T.T. Allain Hall. The Laboratory hours are posted on/in the Lab.
- 3) Possess: *Geometry Connections*, textbook.
- 4) Possess a scientific calculator. Note: see requirement above.
<http://kings.k12.ca.us/math/lessons/ti83tutorial/mainpage.html>
<http://www.howardcc.edu/math/calculator/ti83frame.htm>
- 5) LIVETEXT subscription is required.

Southern University and A&M College-Baton Rouge has entered into partnership with LiveText, Inc. to provide online academic resources for student collaboration and learning outcomes assessment. Therefore, all students enrolled in this course are required to purchase a subscription from LiveText, Inc. through the Southern University Bookstore. LiveText, Inc. provides students with the electronic tools and services needed to serve them in their courses and in their career or academic pursuits beyond graduation.

LiveText is a dynamic tool that will enable you to:

Create Electronic Portfolios for storing and displaying coursework for use anytime and anyplace;

Share your résumés, professional portfolios and virtually any projects that can be photographed, video recorded, and uploaded to prospective employers and others who need or want to know about your accomplishments;

Engage in discussion boards with other students, exchange feedback, and create study groups and other types of social networks.

Complete assignments in key/required courses where LiveText has been embedded (without LiveText, you will not be able to complete these assignments).

Create a complete record of your academic career that is malleable and easily accessible.

Engage in developing a results driven culture of assessment at Southern University.

Participate in a process that will allow for data-driven curricular improvements that foster improved student learning and performance.

B. Administrative

Each learner enrolled in this course will meet set requirements!

- 1) Attend class regularly and punctually.
- 2) Academic Dishonesty: Adhere to honesty and integrity in work submitted for credit in this course and adhere to SUBR's Code of Conduct. (Refer to current catalog.)
http://web.subr.edu/fileadmin/files/pdf/Southern_1b_21-39_.pdf
- 3) Adhere to Academic Calendar:
<http://www.subr.edu/assets/pdf/Spring2013AcademicCalendar.pdf>
- 4) OTHER RESOURCES that are designed to help the student achieve the course objectives include: personal tutoring available free of charge in 306 T. T. Allain (hours posted on door); and tutorial assistance details from Dr. Nadia Gadson at 771-4312 in the Center for Student Success, 122 Harris Hall Annex.

VII. ASSESSMENT MEASURES & SCHEDULE

The final grade for this course will be determined by the average of the following:

Activity

- 1) Class assignments
- 2) Tests
- 3) Examinations
- 4) BLACKBOARD & LIVE-text assignments/projects TBA by professor.

VIII. GRADING

89.0 – 100.0	A
79.0 -- 88.9	B
69.0 -- 78.9	C
58.0 -- 68.9	D
Below 58.0	F

IX. DISABILITY STATEMENT

If you have a documented disability, then please discuss it with personnel at 771-3546 in Room 246 Blanks Hall. Learners, those considered having a disability, are to provide the professor with a letter from Professor P. Hebert through the Office of Disability Service stating the appropriate accommodations required of this course.

DISCLAIMER: THESE ACTIVITIES AND ASSIGNMENTS ARE TENTATIVE. CHANGES MAY OCCUR DUE TO ASSESSMENT OF LEARNERS BY THE PROFESSOR AND DUE TO THE PROFESSOR. IT WILL BE NECESSARY FOR THE LEARNER TO PERIODICALLY REVIEW THIS COURSE SYLLABUS ONLINE VIA BLACKBOARD THROUGHOUT THE SEMESTER.