NAU NORTHERN ARIZONA UNIVERSITY

Course Title: MAT 399 Special Topics
Term: Winter 2023
Instructor: TBA
Course Credit: 3
Mode of Instruction: Online

Course Description:

In this course, we will discuss special topics and areas of mathematics. Particular attention will be paid to the history of mathematics from Medieval time to twentieth century and beyond. Students should gain insight into the historical development of the major themes in mathematics, and demonstrate a comprehensive understanding of the contributions of earlier civilizations into mathematics and how they affect the human destiny.

Course Prerequisites:

MAT 150 Principles Of Mathematics I; MAT 155 Principles Of Mathematics II

Learning Outcomes:

By the end of the course, the student should be able to:

A. Get familiarized with the historical stages of mathematics from Medieval mathematics to the modern achievements;

B. Explain the development of and motivation for major ideas underlying modern mathematics;

C. Understand the ways scholars think and the methods they use in the past, present and future;

D. Understand classical mathematical texts and their historical interpretation;

E. Exhibit proficiency in relating mathematics to other curricular area.

Course Material:

A History of Mathematics, 3rd edition, Uta C. Merzbach, Carl B. Boyer (Wiley, 2011).

Evaluation:

- 4 Exercises [20%]

- Essay [15%]

- Mid-term Exam [30%]

- Final Exam [35%]

Description of the Evaluation tasks:

Assignment/ Essay/ ... : During the term, students will be required to finish several evaluation tasks within due date. All the tasks are linked with specific course topics/ outcomes and will adequately assess students' competence and learning outcomes. Students are encouraged to meet with instructor about these tasks at any point.

Mid- term/ Final Exams/ Quiz/. . . : There may be periodic quizzes given at the beginning of lecture sessions; the feedback from these quizzes will monitor the progress of the learners and help to set learning priorities. There will be mid- term exam/ final exam for the course. They are the basic criteria for the evaluation of students' learning outcomes and final grade.

Grading Policy:

Students are supposed to finish each online lecture. Prior to each class, students should finish the required readings. During the class time, students are encouraged to make use of all relevant online course resources and communicate with the instructor. Students' grades are accumulated based on the cumulative evaluations.

Students' letter grade will be assigned according to the following scale:

A+ 90- 100	A 85-89	A- 80-84
B+ 77-79	B 73-76	B- 70-72
C+ 67-69	C 63-66	C- 60-62
D+ 57-59	D 53-56	D- 50-52
F < 50		

Academic Integrity:

Students must strictly adhere to the university's academic integrity rule; and all essays, exams and any other form of academic assignments must adhere to these rules. Any form of plagiarism, cheating, or misappropriation of materials will be considered a violation of academic integrity and will be punishable by the university.

Withdrawal from the Course(s):

Students will be able to apply for a transfer or withdrawal within 3 days of the starting date of the course. If a withdrawal is applied for within 3 working days, the tuition fee will be fully refunded. After 3 days, the tuition fee will not be refunded. If a withdrawal is applied for in the first two weeks, it will be recorded as W (Withdraw) on the course transcript. After this initial two-week period, the class will be recorded as F (Fail).

Tentative Schedule:

Week 1

1	Course Overview
2	Ancient and Medieval China
3	Ancient and Medieval India
4	Early Mathematics in India
5	Numerals and Trigonometry **Exercise 1**

Week 2

6	The Islamic Hegemony
7	The Latin West
8	Infinite Series
9	The Decline of Medieval Learning
10	The European Renaissance **Exercise 2**

Week 3

11	Early Modern Problem Solvers
12	**Midterm Test**
13	Mathematical Instruments
14	Analysis,Synthesis, the Infinite, And Numbers
15	British Techniques and Continental Methods **Exercise 3**

Week 4

16	Euler
17	Logarithms and the Euler Identities Differential Equations
18	Pre to Postrevolutionary France
19	Gauss Nineteenth-Century Overview
20	Geometry **Exercise 4**

Week 5

21	Algebra
22	Twentieth Century Legacies
23	Twentieth Century Legacies (Cont.)
24	Recent Trends **Essay**
25	**Final Exam**