

THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF MATHEMATICAL SCIENCES

Special Topics - 26902 - MATH 5370 - Algebra & Number Theory

Instructional Method: Hybrid: 50% -85% Online

Face-to-Face: This class meets Face-to-Face on **Thursday (6:30pm - 7:50pm) in BH130**
The Exams are scheduled Face-to-Face, on specific dates

Online: The online portion (video-lectures, slides-notes) is **asynchronous via Blackboard**

Instructor:

Dr. Emil Schwab (Professor / Mathematical Sciences / Office: BH 201)

E-mail: eschwab@utep.edu

Office Hours: online on Zoom via Blackboard

Tuesday 9:00 -10:30 am

Thursday 5:00 – 6:00 pm

E-mail communication: you must use only your UTEP email address.

Textbook / Materials:

Elementary Number Theory/ David M. Burton-7th edition

Instructor's Lecture Notes

Course Objectives and Content

This course is designed only for students in the MATM and M.Ed. Program. This class deepens students' understanding of concepts, and students' ability to think abstractly and to elaborate rigorous proofs. Also, the students will make connections between the courses and the high school mathematics they teach.

Topics include:

- 1.) Divisibility Theory, Diophantine Equations, Primes and their Distribution, Theory of Congruences, Chinese Remainder Theorem, Fermat's Theorem, Wilson Theorem.
- 2.) Groups and Rings, Dirichlet Convolution, The Ring of Arithmetic Functions The Group of Multiplicative Arithmetic Functions, Möbius Inversion Formula, Euler's Totient Theorem.

You will be responsible to access BLACKBOARD to watch the videos posted each week, check the announcements /homework , and review the notes posted.

Exams and Assignments:

There will be **three face-to-face exams** (Exam 1, Exam2 and Exam 3). There will be no extra credit or curves on exams. Regularly homework will be assigned. The homework will not be collected. The exams will include problems from homework or similar.

Exams Tentative Schedule and Grading Policy:

	Date	Weight
Exam 1	Thursday, Feb. 20	100 points possible (1/3 of final grade)
Exam 2	Thursday, Mar. 27	100 points possible (1/3 of final grade)
Exam 3	Thursday, Apr. 24	100 points possible (1/3 of final grade)

The dates/times for the exams may be changed during the semester.

The Final Grade will be the average of all three scores (Ex1, Ex2, Ex3) respecting the following grading scale:

85 – 100 = A

70 – 84 = B

55 – 69 = C

40 – 54 = D

0 – 40 = F.

Late Work and Make-up Policy:

Make-up exams will only be given under extraordinary circumstances, approved by instructor.

Attendance & Withdrawal:

The student may be dropped by the instructor for (excessive absences) 3 or more absences of the face-to-face meetings.

It is the student's responsibility to drop the course if desired a grade W, before the drop deadline. The Drop Deadline for this semester is **Friday / April 4, 2025**.

No W grade can be given after the drop deadline.

Technology Requirements:

The online part of the course is delivered via Blackboard.

You will need to have access to a computer/laptop.

IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP [Help Desk](#)

Netiquette/Copyright Statement:

Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended

for classmates and professor only and you are not allowed to copy documents and paste them to a publicly accessible website, blog, or other space.

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

Scholastic Integrity:

Each student is responsible for notice of and compliance with the provisions of the Regents' Rules and Regulations, which are available for inspection electronically at <http://www.utsystem.edu/bor/rules/homepage.htm>

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

Accommodations:

If you need special accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their website at www.sa.utep.edu/cass.