The Bachelor of Arts degree in Mathematics is designed to provide students with the foundation of a liberal arts education and a broad overview of modern mathematics and its applications, while also emphasizing the power, depth, and beauty inherent in the subject. This degree plan is specifically designed for students who intend to teach High School Mathematics. Therefore, the Urban Education Concentration is required.

The mathematical component of this plan is designed to prepare students to develop and use analytical and problem-solving skills, to master mathematical techniques required in related fields of application, and to enter the employment market with relevant and proficient mathematical tools. This degree offers many features to enhance a student’s educational experience: the choice of an approved university minor or concentration; sustained development of writing and speaking proficiency. It will help prepare students for various graduate or professional programs including mathematics and mathematics education. A student of this program, after completing the courses listed in the Mathematics Core, may then choose mathematics electives that seem most suitable to their interests. Several suggested tracks are given with recommended electives. Students are encouraged to consult their advisors for further suggestions about which electives are most suitable, based on their goals and preferences.

The degree requires a minimum of 120 semester credit hours as indicated below. No grade of “D” in any course in the CMS Department may be applied toward satisfying the requirements of any degree in the department. Any course substitution must be approved by the department chair. The format of the degree is given in five sections: General Education Requirements, Mathematics Requirements, Computer Science Requirements, Urban Education Concentration, and Free Electives.

**DEGREE REQUIREMENTS**

**A. General Education Requirements** (44 hours)
- ENG 1301 and 1302 – Composition I, II
- ENG 23XX – Any literature course
- COMM (3 hours selected from COMM 1301, 1303, 1304, 1305, 3302, 3304, 3306 or other approved course)
- Fine Arts (3 hours selected from ART, DRA, MUS or other approved fine arts discipline)
- HIST (6 hours selected from HIST 1305, 1306, 2303, 2309 or other approved course)
- POLS 2305 and 2306 – Federal Government, Texas Government
- Natural Sciences (6 hours selected from BIOL, CHEM, GEOL, MBIO, NS or PHYS or other approved courses)
- Social/Behavioral Sciences (Approved 3 hours in ANTH, CJ, ECO, GEOG, PSY, SOC or other human behavior discipline)
- Mathematics (MATH 2405 is used here)
- Computer Literacy (CS 1408 or CS 1410 is used here)

**B. Mathematics Requirements** (43 hours+)

**i. Mathematics Core** (28 hours+)
- Math 2401 – Calculus I
- Math 2402 – Calculus II
- Math 2403 – Calculus III
- Math 2405 – Discrete Mathematics*
- Math 2407 – Linear Algebra
- Math 2407 – Calculus IV
- Math 3301 – Differential Equations
- Math 3302 – Probability & Statistics
- Math 3306 – Introduction to Modern Algebra
- Math 3307 – Analysis I*
- PED 4382 – Senior Project in Mathematics Education"""
These hours are counted in Section D Urban Education requirements

ii. Mathematics Education (6 hours)
Math 3303 – Geometry for Teachers
Math 3313 – Mathematics Topics for Secondary Teachers

ii. Mathematics Electives (9 hours) [Math 3321-3322 may not count as mathematics electives]

- Must include at least one of the following 3000 level courses:
  - Math 3308 – Numerical Methods, Math 3309 – Number Theory, Math 3312 – Set Theory

- Must include at least six hours of 4000 level courses including at least one of the following three courses:
  - Math 4304 – Introduction to Partial Differential Equations, Math 4306 — Modern Algebra, Math 4307 — Analysis II
  - Students of this degree are strongly encouraged to take Math 4312 – History of Math.

- Suggested tracks:
  - Students interested in teaching mathematics are encouraged to choose from the following list:
  - Students interested in going to graduate school in mathematics are encouraged to choose from the following list:
    Math 2301 – Introduction to Computational Mathematics, Math 3309 -- Number Theory, Math 3312 – Set Theory, Math 4306 -- Modern Algebra, Math 4308 -- Graph Theory
  - Students interested in combinatorics and discrete mathematics are encouraged to choose from the following list:
    Math 2301 – Introduction to Computational Mathematics, Math 3309 -- Number Theory, Math 3312 – Set Theory, Math 4306 -- Modern Algebra, Math 4308 -- Graph Theory
  - Students interested in applications of mathematics (or graduate school in applied mathematics) are encouraged to choose from the following list:
  - Other upper level Mathematics courses as approved by the department.

# This course counts as a ‘W’ course and contributes to the Writing Skills Course Requirement.
+ The hours for Math 2405 are counted in Section A-Common Core Requirements.

- A mathematics education advisor and topic must be decided upon at least one full semester before doing your Senior Project.

- At most three hours of Special Topics courses may be counted here unless approved by the department chair.

- This course provides the student with a high impact learning (capstone) experience.

- At most three hours of Directed Study may be applied toward degree unless approved by the department chair.

C. Computer Science Requirements
- CS 1408 or CS 1410*

*These hours are counted in Section A-Common Core Requirements.

D. Urban Education Concentration (33 hours)

Students seeking Secondary (8 – 12) Certification in mathematics through the Urban Education Department must complete a CMS Minor form as well as a formal application in the Urban Education Department. The current Urban Education Department requirements for this Concentration must be completed. The student teaching portion of the field experience must include fulfilling all Math 4395 Senior Project in Mathematics requirements. At least one semester prior to taking PED 3305, students should take all three sections of the THEA and submit the “Form to request admission to the 8-12 teacher certification program” to the Department of Urban Education.

E. Free Electives: Enough hours to complete a minimum of 120 hours total.