

## FIRST YEAR

Choose 1 Communication  
 MATH 2413 Calculus I  
 Choose 1 American History  
 Choose 1 Integrative/Experiential Learning  
 Choose 1 Creative Arts  
 UNIV 1301 Learning Framework  
 Choose 1 Communication  
 MATH 2414 Calculus II  
 MATH 2318 Linear Algebra  
 Choose 1 American History  
 Choose 1 Social and Behavioral Sciences

## SECOND YEAR

MATH 2415 Calculus III  
 MATH 3341 Differential Equations  
 Choose 1 Government/Political Science  
 Choose 1 Life and Physical Sciences  
 Choose 1 Language, Philosophy & Culture  
 MATH 3343 Intro to Mathematical Software  
 MATH 3350 Intro to Mathematical Proof  
 Choose 1 Government/Political Science  
 Choose 1 Integrative/Experiential Learning  
 Choose 1 Life and Physical Sciences

## THIRD YEAR

MATH 3363 Modern Algebra I  
 MATH 3352 Modern Geometry I  
 STAT 2331 Essentials of Statistics  
 MATH 3345 Linear Optimization  
 X3XX-X3XX Free Elective  
 MATH 3372 Real Analysis I  
 STAT 3337 Probability and Statistics  
 MATH 3349 Numerical Methods  
 MATH 4344 Boundary Value Problems  
 X3XX-X3XX Free Elective

## FOURTH YEAR

MATH 4390 Mathematics Project  
 MATH 3361 Applied Discrete Mathematics  
 MATH 4342 Complex Variables  
 X3XX-43XX Free Advanced Elective  
 X3XX-X3XX Free Elective  
 MATH 3347 Elementary Cryptology  
 MATH 4346 Integral Transforms  
 X3XX-43XX Free Advanced Elective  
 X3XX 43XX Free Advanced Elective

Courses in red are part of the General Education Core Curriculum (GEC).  
 \*Choose 1" Indicates course options. If options are not listed, please review the degree plan for this major: [www.utrgv.edu/degreeplans](http://www.utrgv.edu/degreeplans).  
 \*Please review degree plan for course recommendations.

### 2019-2020 ACADEMIC PLAN

UTRio Grande Valley

BLUE  
 PRINT

**MATHEMATICS (BS)**

**\*Applied Mathematics**

**Catalog: 2019-20**

**COLLEGE OF SCIENCES**

### Degree Info

Mathematics is both an exact science and a highly creative endeavor; a field of study that develops problem-solving skills and a passion for inquiry. Mathematics majors are surprisingly attractive to many professional branches in our society, particularly intelligence, technology, finance, security, engineering and physics. Mathematics Majors with Teacher Certification are attractive to the growing demand for teachers in high schools, middle schools and elementary schools. A BS in Mathematics will prepare the graduate for a competitive position in society and provide the necessary preparation graduate for an exciting and rewarding teaching position and for graduate studies.

### Contact Info

School Director  
 Dr. Timothy Huber  
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Departmental Office  
 Phone Number  
 956-665-3451

### Additional Info

Graduation requirement  
 You must complete all these major course requirements and all MATH and MATE courses with grades of 'C' or better and have with a GPA for the major of 2.5 or better.

# BLUEPRINT EXPERIENCES

## FIRST YEAR

## SECOND YEAR

## THIRD YEAR

## FOURTH YEAR AND BEYOND

## CAREERS

### MILESTONES

- UTRGV has a Writing Center and a Learning Center. Make it a point to visit them!
- Complete your core English classes (section 010) during your first year.
- Complete 30 credit hours every year in order to graduate in 4 years.
- Shoot for a GPA of 3.5.
- Take MATH 2412 in your first year.

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- Complete major foundation classes, such as Math 2413, 2414, and 2415.
- Complete 30 credit hours.

- Shoot for a GPA of 3.5.
- Complete 30 credit hours.
- Have you landed an internship or acquired research experience? This is the year to make it happen. Ask your favorite professor about research opportunities.
- Enroll in upper level courses for your concentration such as MATH 3331 Applied Statistics I, MATH 3343 Introduction to Mathematical Software

- Shoot for a GPA of 3.00.
- "I have a plan for after graduation." If this describes you, great! If not, visit your Faculty Advisor or Career Center!
- Register for your Capstone project: MATH 4390 Math Project.
- Enroll in Senior level courses such as MATH 4342 Complex Variables, MATH 4344 Boundary Value Problems
- Complete at least 30 credit hours to graduate.
- Submit your application(s) for graduate school in the fall, an apprenticeship, or for fulltime employment.

### ADVICE & SUPPORT

- Meet with your academic advisor and bring your orientation folder with you to every session!
- Choose a major with confidence- Visit my.UTRGV.edu and check out MyMajors!
- Visit a faculty member during their office hours and ask a question about class.
- Classes fill up fast. When registration opens, be sure to register on the first day for your group.
- Cold or flu getting you down? We have Student Health Services on campus with free office visits.

- Want to explore different careers? Check out MyMajors on my.utrgv.edu!
- Come ready with course suggestions and questions when you visit your academic advisor.
- Visit the Communication Hauser Lab for help with your presentations, especially capstone presentations.
- Trouble making your tuition payment? The Financial Aid Office can help. Payment plans and emergency loans are also available

- Seek out research opportunities within your major and join a professional organization such as American Mathematical Society.
- Check Degree Works to make sure you are on track for graduation next year.
- Apply for internship and/or job shadowing opportunities. Discuss this with your advisor, faculty mentor, or Career Center.
- Look for future scholarships and fellowships to apply for during the fall of your senior year. Check out C-STEM at [www.utrgv.edu/cstem](http://www.utrgv.edu/cstem).

- Discuss future plans with your faculty mentor or advisor that include employment, finances, and other life goals.
- Apply for graduation one semester prior to your anticipated date. Visit your advisor to ensure you are on track.
- Ask the Career Center and your faculty mentors for feedback on your resume, cover letters, and other job application documents.
- Consider applying for a Masters of Doctoral Program. You can start either type of graduate degree with your BS in Mathematics.

### APPLY WHAT YOU LEARN

- Look for a service-learning course! For guidance, visit Engaged Scholarship & Learning Office.
- Participate in a campus-sponsored community service project.
- Ask a student in class to study with you.

- To find undergraduate research opportunities, visit the Engaged Scholarship & Learning Office.
- Consider attending the LeaderShape Institute or attend the Engaged Scholar Symposium.

- Go show off your research, service-learning or creative works at the Engaged Scholar Symposium!
- Sharpen your writing skills! Take proof-rich courses beginning with MATH 3350, Introduction to Mathematical Proof Writing, or become the secretary for your organization.

- Continue to present research or creative works at the Engaged Scholar Symposium or at State or National meetings of the Society for Industrial and Applied Mathematics and the American Mathematical Society.
- Set up an informational interview with an individual (especially an alumnus) currently in the field you aspire to work in.

### GLOBAL, CAMPUS & COMMUNITY ENGAGEMENT

- Set up your profile on the Engagement Zone through My.UTRGV.edu.
- Attend a diversity based campus or community event (e.g. MLK Day of Service).
- Attend a School Colloquium or Departmental seminar, and drop by your favorite professor's office to talk about research opportunities.
- Join a student organization! Consider looking into Society for Industrial and Applied Mathematics (SIAM) or visit VLink ([utrgv.edu/vlink](http://utrgv.edu/vlink)) for other options.

- Look at study abroad opportunities or consider applying to UT-LSAMP or other internal or external summer research projects. Click on Student resources at <http://www.utrgv.edu/cstem/>
- Check out a cultural campus or community event such as HESTEC or FESTIBA.
- Join another student organization. Perhaps the Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) or visit VLink for options.
- Check out a campus event that offers free lunch- bring a friend!

- Consider serving on a campus life/community committee or become a student leader and make a difference. Visit VLink or speak with your Student Government Association for more information!
- Engage in outreach programs to local schools to complement your major. Consider joining the Experimental Algebra and Geometry group and participating in their outreach program.
- Travel the world! Look into study abroad opportunities at Office for International Programs & Partnerships.

- Identify employers of interest and seek them out at job fairs, online, at on-campus information sessions, staffing agencies, etc. The Career Center can help.
- Before a job interview, schedule a mock interview with the Career Center or speech coaching with the Communication Hauser Lab.
- Ask your favorite professor or faculty mentor for career advice and to review your application materials.

### LIFE AFTER GRADUATION

- Create a résumé and set up your profile on the Handshake icon: (My.UTRGV.edu).
- Got summer plans? Visit Career Center and ask about places to do some job shadowing.
- Research shows that students who work on campus perform better than those who work off campus. Look for a job on Handshake!
- Check your UTRGV email for the daily Messenger- locate and attend one student workshop.

- Update your resume in Handshake and have it reviewed.
- Visit the Career Center site to find a job fair to attend. At the event, approach a recruiter and discuss internships.
- Will a minor expand your career options? We recommend Computer Science, Physics, or Engineering.
- Explain to someone how your academic program aligns with your strengths and interests.

- Check out the C-STEM program department website for postings on career/graduate school.
- Think about three people you can ask for letters of recommendation (professors, mentors, advisors, supervisors, etc.). Give them at least two weeks' advance notice!
- When is the deadline for your graduate school application? Most require you to apply a year in advance and take the GRE. Visit admission webpages for graduate programs and apply early, as most programs do not accept late applicants!

- Have you received your acceptance for graduate school or an employment offer? If not, network: talk to faculty, the Career Center, and get on LinkedIn.
- Develop a strategy for life after graduation: attend career fairs, graduate fairs, apply to fellowships, etc.
- Update your information with Alumni Relations. Enjoy alumni mixers, events and continued access to Career Center services!
- Remember to do your exit loan counseling on [studentloans.gov](http://studentloans.gov).

- Theoretical Research
- Applied Research
- Modeling and simulation
- Numerical methods and analysis
- Statistics and probability
- Engineering analysis
- Differential equations
- Operations research
- Discrete mathematics
- Accounting and finance
- Computer programming
- Computer systems
- Analysis operations
- Sales and marketing management
- Actuarial science
- Engineering
- Analysis and control of processes
- Optimization and scheduling of resources
- Risk management/ Assessment
- Loss management/ Control
- Underwriting

For additional info, visit the Career Center website and check out "What Can I Do With This Major?" [www.utrgv.edu/careercenter](http://www.utrgv.edu/careercenter)