# The University of Texas Rio Grande Valley

**Bachelor of Science (BS)**

**Mathematics**

*Concentration: Pure Mathematics*

**2018-2019**

## FIRST YEAR

### FALL

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|----------|--------------|------------|-----|--------------|------------------|
| | 3 | Choose 1 | Communication (Core) | C | 010 | For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387. | See General Education Core for more details Options: ENGL 1301 **or** ENGL 1387 (H) |
| ! | 4 | MATH 2413 | Calculus I | C | 020 | MATH 2412 with a grade of 'C' or better; or passing the Precalculus Exemption Test administered by the Department of Mathematics. | **Prerequiste for MATH 2412:** MATH 1314/1414 with a grade of "C" or better or passing Exemption Test administered by Department of Mathematics |
| | 3 | Choose 1 | American History (Core) | | 060 | | See General Education Core for more details. Options: HIST 1301 **or** HIST 1387 **or** HIST/MASC 2327 |
| | 3 | Choose 1 | Integrative/Experiential Learning Option (Core) | | 090 | | Recommended: CSCI 1380 |
| | 3 | Choose 1 | Creative Arts (Core) | | 050 | | See General Education Core for course options. |
| | | UNIV 1301 | Learning Framework | | | | Only if required, based on ACT/SAT and high school rank. |
| | **16** | | **Semester Total Hours** | | | | |

### SPRING

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|----------|--------------|------------|-----|--------------|------------------|
| | 3 | Choose 1 | Communication (Core) | | 010 | For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387. | See General Education Core for more details Options: ENGL 1302 **or** ENGL 1388 (H) **or** ENGL 1305 |
| ! | 4 | MATH 2414 | Calculus II | C | | MATH 2413 (or MATH 2487) with a grade of 'C' or better. | |
| ! | 3 | MATH 2318 | Linear Algebra | C | | MATH 2413 (or MATH 2487) with a grade of 'C' or better. | |
| | 3 | Choose 1 | American History (Core) | | 060 | | See General Education Core for more details. Options: HIST 1302 **or** HIST 1388 **or** HIST/MASC 2328 |
| | 3 | Choose 1 | Social and Behavioral Sciences (Core) | | 080 | | Recommended: ECON 1301 or ECON 2301 |
| | **16** | | **Semester Total Hours** | | | | |

## SECOND YEAR

### FALL

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|----------|--------------|------------|-----|--------------|------------------|
| ! | 4 | MATH 2415 | Calculus III | C | | MATH 2414 (or MATH 2488) with a grade of 'C' or better. | |
| ! | 3 | MATH 3341 | Differential Equations | C | | MATH 2414 (or MATH 2488) with a grade of 'C' or better. | |
| | 3 | Choose 1 | Government/Political Science (Core) | | 070 | | See General Education Core for more details Options: POLS 2305 **or** POLS 2385 (H) |
| | 4 | Choose 1 | Life and Physical Sciences (Core) | | 030/090 | | Recommended: PHYS 2425 |
| | 3 | Choose 1 | Language, Philosophy & Culture (Core) | | 040 | | See General Education Core for course options. |
| | **17** | | **Semester Total Hours** | | | | |

### SPRING

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|----------|--------------|------------|-----|--------------|------------------|
| | 3 | MATH 3352 | Modern Geometry I | C | | MATH 2318 with a grade of 'C' or better. | |
| ! | 3 | MATH 3350 | Introduction to Mathematical Proof | C | | MATH 2318 with a grade of 'C' or better. | |
| | 3 | Choose 1 | Government/Political Science (Core) | | 070 | | See General Education Core for more details Options: POLS 2306 **or** POLS 2386 (H) |
| | 1 | Choose 1 | Integrative/Experiential Learning Option (Core) | | 090 | | See General Education Core for course options. |
| | 4 | Choose 1 | Life and Physical Sciences (Core) | | 030/090 | | Recommended: PHYS 2426 |
| | **14** | | **Semester Total Hours** | | | | |

**CORE: The 2018-2019 list of core courses can be found at: www.utrgv.edu > Academics > Undergraduate > General Education Core**
**www.utrgv.edu/core**

**Symbols Key**

**Critical ('!')**: sequence sensitive course.
**Minimum Grade**: A - Excellent; B - Good; C - Satisfactory; D - Below Average; CR - Credit; P - Passing; S - Satisfactory.

**General Education Core (GEC) Sections:** 010 - Communication; 020 - Mathematics; 030 - Life and Physical Sciences; 040 - Language, Philosophy & Culture; 050 - Creative Arts; 060 - American History; 070 - Government/Political Science; 080 - Social and Behavioral Sciences; 090 - Applied Communication and Literacies; 090 - Humanities; 090 - Leadership; 090 - Science Labs; 090 - Interdisciplinary ; 090 - Technologies; 090 - Language Diversity & Writing.

**Language Proficiency Requirement:** Student is required to demonstrate language proficiency in a language other than English at the undergraduate level equivalent to a minimum of six credits.

## THIRD YEAR

### FALL

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|---|---|---|---|---|---|
|   | 3 | MATH 3363 | Modern Algebra I | C | | MATH 2318 and MATH 3350, each with a grade of 'C' or better. | |
|   | 3 | MATH 3365 | Number Theory | C | | MATH 2318 and MATH 3350, each with a grade of 'C' or better. | |
|   | 3 | MATH 4342 | Complex Variables | C | | MATH 2415 with a grade of 'C' or better. | |
|   | 3 | MATH 3345 or MATH 3361 | Advanced Mathematics Electives | C | | MATH 2318 with a grade of 'C' or better. | |
|   | 3 | X3XX X3XX | Free Elective | | | | |
|   | **15** | **Semester Total Hours** | | | | | |

### SPRING

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|---|---|---|---|---|---|
|   | 3 | MATH 3372 | Real Analysis I | C | | MATH 2414 (or MATH 2488) and MATH 3350, each with a grade of 'C' or better. | |
|   | 3 | STAT 3337 | Probability and Statistics | C | | MATH 2414 (or MATH 2488) with a grade of 'C' or better. | |
|   | 3 | MATH 3349 | Numerical Methods | C | | MATH 2414 (or MATH 2488) and MATH 3343, each with a grade of 'C' or better. | |
|   | 3 | MATH 43XX | Major Advanced Elective | C | | | See Degree Plan for course options. |
|   | 3 | X3XX X3XX | Free Elective | | | | |
|   | **15** | **Semester Total Hours** | | | | | |

## FOURTH YEAR

### FALL

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|---|---|---|---|---|---|
|   | 3 | MATH 4390 | Mathematics Project | C | | MATH 2318, MATH 3350, and 9 additional advanced hours of MATH, all with grades of 'C' or better. | |
|   | 3 | MATH 4355 | Topology | C | | MATH 2414 (or MATH 2488) and MATH 3350, each with a grade of 'C' or better. | |
|   | 3 | MATH 43XX | Major Advanced Elective | C | | | See Degree Plan for course options. |
|   | 3 | 33XX-43XX | Free Advanced Elective | | | | |
|   | 3 | X3XX X3XX | Free Elective | | | | |
|   | **15** | **Semester Total Hours** | | | | | |

### SPRING

| ! | H | Course # | Course Title | Min. Grade | GEC | Prerequisite | Additional Notes |
|---|---|---|---|---|---|---|---|
|   | 3 | MATH 43XX | Major Advanced Elective | C | | | See Degree Plan for course options. |
|   | 3 | MATH 43XX | Major Advanced Elective | C | | | See Degree Plan for course options. |
|   | 3 | 33XX-43XX | Free Advanced Elective | | | | |
|   | 3 | X3XX X3XX | Free Elective | | | | |
|   | **12** | **Semester Total Hours** | | | | | |

**Graduation Requirements:**

1. The student 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.

2. In addition to the graduation requirements listed in the UTRGV 2018-2019 Undergraduate Catalog, demonstration of proficiency in a language other than English is required at the undergraduate level equivalent to a minimum of six credit hours. Proficiency can be demonstrated by a college credit exam, a placement test approved through the UTRGV department of Writing and Language Studies, and/or to six credit hours of college-level language coursework.

**120**    **TOTAL HOURS**
**(54)**    **TOTAL ADVANCED HOURS**

Approved: Tuesday, April 3, 2018
Revised: Thursday, July 5, 2018