

Bachelor of Science in Mathematics

2014 - 2015 Catalog

The University of Texas-Pan American

This document provides a list of the UTPA courses required for the major and their equivalent UTRGV courses.

A significant number of courses have changed their course prefix, number, and title.

For any additional information, please visit the Academic Advising Center.

UTPA Courses	Course Equivalents at UTRGV
A – GENERAL EDUCATION CORE – 43 HOURS	
Mathematics – 3 hours	
MATH 1460 Calculus I (or MATH 1487 Honors) three-hour lecture	MATH 2413 Calculus I (or MATH 2487 Honors) three-hour lecture
B – MAJOR REQUIREMENTS – 51 HOURS MINIMUM (36 advanced minimum)	
1 – Core Courses for the Major – 27 hours (18 advanced)	
MATH 1460 Calculus I (or MATH 1487 Honors) one-hour lecture	MATH 2413 Calculus I (or MATH 2487 Honors) one-hour lecture
MATH 1470 Calculus II (or MATH 1488 Honors)	MATH 2414 Calculus II (or MATH 2488 Honors)
MATH 2401 Calculus III	MATH 2415 Calculus III
MATH 3328 Introduction to Proofs	MATH 3350 Introduction to Mathematical Proof
MATH 3345 Applied Linear Algebra	MATH 2318 Linear Algebra
MATH 4339 Probability and Statistics I	MATH 4337 Probability and Statistics I
MATH 4351 Modern Algebra I	MATH 3363 Modern Algebra I
MATH 4357 Real Analysis	MATH 3372 Real Analysis I
MATH 4390 Mathematics Project	MATH 4390 Mathematics Project
2 – Concentrations – 24 hours minimum (18 advanced minimum)	
a – Applied Mathematics – 32 hours (21 advanced)	
MATH 3337 Applied Statistics I	MATH 3331 Applied Statistics I
MATH 3349 Differential Equations	MATH 3341 Differential Equations
MATH 3368 Numerical Methods	MATH 3349 Numerical Methods
CSCI 1380 or higher Computer Science or Computer Engineering	CSCI 1380 Computer Science I (or CSCI 1387 Honors)
<i>Choose three:</i>	
MATH 3338 Applied Statistics II	MATH 3332 Applied Statistics II
MATH 3355 Linear Optimization	MATH 3345 Linear Optimization
MATH 4317 Complex Variables	MATH 4342 Complex Variables
MATH 4318 Boundary Value Problems	MATH 4344 Boundary Value Problems
MATH 4319 Integral Transforms	MATH 4346 Integral Transforms
MATH 4329 Elementary Cryptology	MATH 3347 Elementary Cryptology
MATH 4391 Mathematics Research	MATH 4391 Research Experience in Mathematics
MATH 4399 Special Topics in Math	MATH 3399 Special Topics in Mathematics
<i>Choose 8 hours of additional Natural Science outside of the General Education Core.</i>	
<i>Choose 3 hours of advanced Mathematics, except MATH 3373.</i>	
b – Economics – 24 hours (18 advanced)	
ECON 2301 Principles Of Macroeconom	ECON 2301 Principles of Macroeconomics
ECON 2302 Principles Of Microecon	ECON 2302 Principles of Microeconomics
ECON 3341 Econometrics	ECON 3341 Econometrics
ECON 3351 Macroeconomic Theory	ECON 3351 Macroeconomic Theory
ECON 3352 Microeconomic Theory	ECON 3352 Microeconomic Theory
ECON 4340 Intro To Math Econ	ECON 4340 Introduction to Mathematical Economics
MATH 3349 Differential Equations	MATH 3341 Differential Equations
<i>Choose 3 hours of advanced Mathematics.</i>	
c – Middle School Mathematics– 48 hours (40 advanced)	
EMAT 2306 Foundations Of Math I	MATH 1350 Fundamentals of Mathematics I
EMAT 2307 Foundations Of Math II	MATH 1351 Fundamentals of Mathematics II

MMAT 3309 Found Of Math III-Inter
 MMAT 3310 Measurement And Geometry I
 MMAT 3311 Measurement And Geometry II
 MMAT 3313 Algebraic Structures
 READ 4351 Lrng Through Literacy In
 SMAT 3330 Functions and Modeling
 UTCH 1101 Inquiry Approaches to Teaching
 UTCH 1102 Inquiry-Based Lesson Design
 UTCH 3301 Knowing and Learning
 UTCH 3302 Classroom Interaction
 UTCH 3303 Project-Based Instruction
 UTCH 4701 Apprentice Teaching
Choose two:
 MATH 3303 History Of Mathematics
 MATH 3333 Math in Computer Environ
 MATH 3366 Discrete Mathematics
 MATH 4302 Number Theory
d – Pure Mathematics – 32 hours (21 advanced)
 MATH 4317 Complex Variables
 MATH 4360 Topology
 CSCI 1380 or higher Computer Science or Computer Engineering
Choose one:
 MATH 4304 Modern Geometries
 MATH 4302 Number Theory
Choose one:
 MATH 3349 Differential Equations
 MATH 3355 Linear Optimization
 MATH 3366 Discrete Mathematics
 MATH 3368 Numerical Methods
 MATH 4000:4999
Choose 6 hours of advanced Mathematics (MATH 4000: 4,999).
Choose 3 hours of advanced Mathematics, except MATH 3373.
Choose 8 hours of additional Natural Science outside of the General Education Core.
e – Science and Engineering – 27 hours (21 advanced)
 CSCI 1380 or higher Computer Science or Computer Engineering
Choose 3 hours of advanced Mathematics, except MATH 3373.
Choose 3 hours of BIOL, CHEM, CIS, CMPE, CSCI, ELEE, ENGR, ENSC, GEOL, GEOP, MECE, PHYS, PSCI, or SCIE.
Choose 18 hours of advanced BIOL, CHEM, CIS, CMPE, CSCI, ELEE, ENGR, GEOL, GEOP, MECE, PHYS, PSCI, and/or SCIE.
f – Secondary Mathematics– 53 hours (43 advanced)
 MATH 3303 History Of Mathematics
 MATH 3333 Math in Computer Environ
 MATH 3366 Discrete Mathematics
 MATH 4302 Number Theory
 MATH 4304 Modern Geometries
 READ 4351 Lrng Through Literacy In
 SMAT 3330 Functions and Modeling
 SMAT 4311 Adv Study Secondary Geometry
 SMAT 4312 Adv Study Secondary Algebra
 UTCH 1101 Inquiry Approaches to Teaching
 UTCH 1102 Inquiry-Based Lesson Design
 UTCH 3301 Knowing and Learning

MATE 3301 Fundamentals of Middle School Mathematics
 MATE 3302 Fundamentals of Measurement and Geometry I
 MATE 3303 Fundamentals of Measurement and Geometry II
 MATE 3304 Fundamentals of Algebraic Structures
 READ 4305 Content Area Literacy
 MATE 3321 Functions and Modeling
 UTCH 1101 Inquiry Approaches to Teaching
 UTCH 1102 Inquiry-Based Lesson Design
 UTCH 3301 Knowing and Learning in Mathematics and Science
 UTCH 3302 Classroom Interactions
 UTCH 3303 Project-Based Instruction
 UTCH 4101 Apprentice Teaching Seminar and UTCH 4601 Apprentice Teaching
 MATH 3326 History of Mathematics
 MATH 3322 Secondary Mathematics in a Technological Environment
 MATH 3361 Applied Discrete Mathematics
 MATH 3365 Number Theory
 MATH 4342 Complex Variables
 MATH 4355 Topology
 CSCI 1380 Computer Science I (or CSCI 1387 Honors)
 MATH 3352 Modern Geometry I
 MATH 3365 Number Theory
 MATH 3341 Differential Equations
 MATH 3345 Linear Optimization
 MATH 3361 Applied Discrete Mathematics
 MATH 3349 Numerical Methods
 CSCI 1380 Computer Science I (or CSCI 1387 Honors)
 MATH 3326 History of Mathematics
 MATE 3322 Secondary Mathematics in a Technological Environment
 MATH 3361 Applied Discrete Mathematics
 MATH 3365 Number Theory
 MATH 3352 Modern Geometry I
 READ 4305 Content Area Literacy
 MATE 3321 Functions and Modeling
 Recommended alternative: MATE 4423 Advanced Studies in Secondary Mathematics
 Recommended alternative: Any advanced MATH
 UTCH 1101 Inquiry Approaches to Teaching
 UTCH 1102 Inquiry-Based Lesson Design
 UTCH 3301 Knowing and Learning in Mathematics and Science

UTCH 3302 Classroom Interaction
UTCH 3303 Project-Based Instruction
UTCH 4101 Apprentice Teaching Seminar
UTCH 4601 Apprentice Teaching

Choose 8 hours of additional Natural Science outside of the General Education Core.

g – Statistics – 27 hours (21 advanced)

MATH/STAT 2330 Elementary Statistical Methods (or MATH 2387 Honors)

MATH/STAT 3337 Applied Statistics I

MATH/STAT 3338 Applied Statistics II

MATH/STAT 4336 Sampling

MATH 3368 Numerical Methods

MATH 4340 Probab And Statistics II

MATH 4377 Applied Regression

CSCI 1380 or higher Computer Science or Computer Engineering

Choose one:

MATH 3303 History Of Mathematics

MATH 3311 Organ Struct & Proc Math

MATH 3333 Math in Computer Environ

MATH 3349 Differential Equations

MATH 3355 Linear Optimization

MATH 3373 Discrete Structures

MATH 4302 Number Theory

MATH 4304 Modern Geometries

MATH 4317 Complex Variables

MATH 4318 Boundary Value Problems

MATH 4319 Integral Transforms

MATH 4329 Elementary Cryptology

MATH 4360 Topology

MATH 4364

MATH 4379

MATH 3000:4999

UTCH 3302 Classroom Interactions
UTCH 3303 Project-Based Instruction
UTCH 4101 Apprentice Teaching Seminar
UTCH 4601 Apprentice Teaching

MATH 1342 Elementary Statistical Methods (or MATH 1387 Honors)

MATH 3331 Applied Statistics I

MATH 3332 Applied Statistics II

MATH 3334 Sampling

MATH 3349 Numerical Methods

MATH 4338 Probability and Statistics II

MATH 3335 Applied Regression

CSCI 1380 Computer Science I (or CSCI 1387 Honors)

MATH 3326 History of Mathematics

MATE 4423 Advanced Studies in Secondary Mathematics

MATE 3322 Secondary Mathematics in a Technological Environment

MATH 3341 Differential Equations

MATH 3345 Linear Optimization

MATH 2305 Discrete Mathematics

MATH 3365 Number Theory

MATH 3352 Modern Geometry I

MATH 4342 Complex Variables

MATH 4344 Boundary Value Problems

MATH 4346 Integral Transforms

MATH 3347 Elementary Cryptology

MATH 4355 Topology

Recommended alternative: MATH 3399 Special Topics in Mathematics

Recommended alternative: MATH 3399 Special Topics in Mathematics

TOTAL CREDIT HOURS FOR GRADUATION – 120 HOURS

TOTAL ADVANCED HOURS – 51 HOURS