

# MATHEMATICS B.S. WITH AN INTEGRATED TEACHER EDUCATION PROGRAM (ITEP)

## Program Learning Outcomes

1. A Vanguard University graduate in Mathematics will demonstrate competence in mathematical abstraction;
2. Effectively communicate mathematics both orally and in writing;
3. Use the basic concepts of computer programming and numerical methods in solving mathematical and related problems;
4. Be able to independently investigate a mathematical topic; and
5. Demonstrate facility with the theory and applications of calculus.

## Requirements

Students seeking the Bachelor of Science degree in Mathematics with a minor in Education must complete the academic program requirements as listed below. This program is associated with the Integrated Teacher Education Program (ITEP).

Code	Title	Units
	Core Curriculum Requirements ( <a href="https://catalog.vanguard.edu/interdisciplinary-offerings/core-curriculum/">https://catalog.vanguard.edu/interdisciplinary-offerings/core-curriculum/</a> ) <sup>1</sup>	45
	Mathematics Major Requirements	53
	General Electives	0
	Integrated Teacher Education Program Requirements (p. 1)	33
	<b>Total Units</b>	<b>131</b>

## Mathematics Major Core Requirements

Code	Title	Units
<b>Lower Division:</b>		
CSCI-110C	Introduction to Computer Science	4
MATH-180C	Calculus 1	4
MATH-181C	Calculus II	4
MATH-265C	Intro to Statistical Methods	3
MATH-281	Multivariable Calculus	4
MATH-285	Introduction to Advanced Mathematics	3
<b>Upper Division:</b>		
MATH-300	Linear Algebra	3
MATH-310	Differential Equations	3
MATH-315	Teaching/Tutoring	3
MATH-330	Number Theory	3
MATH-365	Probability and Statistics	3
MATH-380	Elementary Analysis I	3
MATH-390	Numerical Analysis	3
MATH-410	Abstract Algebra	3
MATH-420	Higher Geometry	3
MATH-450	UG Research and Internship Program	2
or MATH-488	Senior Project	

MATH-499C	Mathematics Capstone	2
<b>Total Units</b>		<b>53</b>

## Integrated Teacher Education Program Requirements

Code	Title	Units
<b>Requirements:</b>		
POLS-155C	American Democracy <sup>2</sup>	3
ANTH-453	Language,Culture/Linguistics	3
<b>Credentialing Coursework:</b>		
EDUC-424	Foundations in Teaching for Single Subject	2
EDUC-426	Instructional Design and Subject Specific Pedagogy for Single Subject	4
EDUC-434	Curriculum Unit Planning for Single Subject	2
EDUC-435	Supervised Fieldwork for Single Subject	4
EDUC-442	CalTPA Cycle 1	0.5
EDUC-443	CalTPA Cycle 2	0.5
EDUC-444	Language Acquisition for Secondary Students	1
EDUC-447	Metacognition/Reading Strategies for Secondary Students	1
EDUC-452	Literacy in Content Areas for Secondary Students	1
EDUC-464	Use of Technology in the Classroom	1
EDUC-488	Clinical Practice Seminar for Single Subject	2
EDUC-489	Clinical Practice Fieldwork for Single Subject	8
<b>Total Units</b>		<b>33</b>

1

Number of units required from the Core Curriculum not included in the major requirements below.

2

POLS-155C American Democracy is both a CTC Credentialing requirement and fulfills a Core Curriculum requirement.

## Four Year Plan

**Disclaimer:** This *sample Four Year Plan* is provided as a guide for the recommended sequencing of courses. Vanguard University requires that students complete a minimum of 120 units of required course work as outlined on the Requirements tab in order to receive a Bachelor of Arts, Bachelor of Music, Bachelor of Science, or Bachelor of Science in Nursing degree. It is the student's responsibility to confirm with the department the course rotation before enrolling in courses. If applicable, please note the footnotes at the bottom of the page for additional information related to courses listed in a particular year and term. Questions, contact the Department of Physical Sciences and Applied Mathematics.

**Study Abroad Participation:** Students interested in participating in the university's Study Abroad programs are encouraged to reach out to the Global Education and Outreach Office ([studyabroad@vanguard.edu](mailto:studyabroad@vanguard.edu)) for more information and collaboration in their academic course planning. Students using Education and Training Benefits through the U.S. Department of Veteran Affairs

*are encouraged to also reach out to the School Certifying Official (veteranscertifyingofficial@vanguard.edu) for more information regarding how benefits can be applied.*

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