BA in Mathematics with Integrated Single Subject (Math) Teaching Credential

90-92 units

This degree program is offered collaboratively by the Department of Mathematics, Physics, and Statistics in the College of Liberal Arts and Sciences and the Division of Teacher Education in the School of Education. Students earn a bachelor of arts degree in mathematics and a single-subject teaching credential in a total of four years. Full program details and requirements are available on the Integrated Bachelor's/Credential Program (http://catalog.apu.edu/academics/college-education-behavioral-sciences/school-education/teacher-education/integrated-bachelors-credential/) page of this catalog.

Major Requirements

Code	Title	Units
Required Courses		
MATH 165	Calculus I	3
MATH 166	Calculus II	3
MATH 167	Sequences and Series [F]	1
MATH 250	Data Analysis [F]	3
MATH 268	Multivariable Calculus	3
MATH 270	Ordinary Differential Equations [S]	4
MATH 280	Discrete Mathematics and Proof [F]	3
MATH 290	Linear Algebra [S]	3
MATH 400	Abstract Algebra [ES]	3
MATH 450	Real Analysis [EF]	3
MATH 480	Mathematical Reading, Writing, and Presentation [1, F]	3
MATH 496	Mathematics Senior Seminar [2, S]	3
CS 120	Introduction to Computer Science I [3]	4
PHYC 165 & PHYC 145	Physics for Science and Engineering: Mechanics and Physics Laboratory I [4,F]	5
Total Units		**44**

In addition to the required courses above, complete one of the tracks below.

Code	Title	Units
General Mathematics Track		
Complete at least 14 units from the courses below. You must complete MATH 361 and at least one of MATH 460 and MATH 470. You cannot count both PHYC 166 and CS 125.		14
MATH 269	Vector Calculus [OF]	
MATH 340	Geometry [S]	
MATH 361	Introduction to Modeling with Probability	
MATH 390	Number Theory [OF]	
MATH 460	Topology [OS]	
MATH 470	Complex Analysis [ES]	
MATH 495	Advanced Topics in Mathematics	
CS 125	Introduction to Computer Science II	
PHYC 166 & PHYC 146	Physics for Science and Engineering: Electricity and Magnetism and Physics Laboratory II [S]	
Total Units		**14**

Code	Title	Units
Secondary Math Education Track		
Complete all 16 units below. This track meets the requirements of the CTC-approved Single Subject Waiver program.		
MATH 130	Introduction to Statistics [5]	3
MATH 301	Mathematics for Secondary Teachers [OF]	3
MATH 340	Geometry [S]	3
MATH 390	Number Theory [OF]	3
EDLS 202	Introduction to Teaching as a Profession (7-12) [6]	4
Total Units		**16**

[1]   Meets the General Education Writing 3 requirement.
[2]   Meets the General Education Integrative and Applied Learning requirement.
[3]   Meets the General Education Oral Communication requirement if taken with CS 290 and CS 480, or ENGR 240 and ENGR 480.
[4]   Meets the General Education Natural Sciences requirement. Students must complete both PHYC 165 and PHYC 145 to fulfill the GE Natural Sciences requirement.
[5]   Meets the General Education Quantitative Literacy requirement.
[6]   Meets the General Education Civic Knowledge and Engagement requirement.

F	Offered in Fall only
S	Offered in Spring only
F/S	Offered in both Fall and Spring terms
EF	Offered in Fall in even years
ES	Offered in Spring in even years
OF	Offered in Fall in odd years
OS	Offered in Spring in odd years

Single Subject (Math) Teaching Credential Requirements

Code	Title	Units
TESP 501	Art of Teaching I: Foundations of Teaching	3
TESP 502	Science of Teaching I: How Students Learn	3
TESP 507	Multilingual Learners and Literacy Development	3
TEP 511	Art of Teaching II: Pedagogy and Instructional Design	3
TEP 512	Science of Teaching II: Effective Assessment Strategies for All Learners	3
TEP 537	Teaching for Equity: Differentiation and Literacy in the Secondary Classroom	3
TEP 538	Pedagogy and Practice in the Secondary Classroom	3
TESP 553	Schools and Educational Systems	2
TEP 563	Clinical Practice: Single Subject [1]	8
TEP 577	CalTPA Support Course: Single Subject	2
Total Units		**33**

[1]   Refer to the Clinical Practice Clearance (https://catalog.apu.edu/academics/college-education-behavioral-sciences/school-education/teacher-education/steps-to-credential/clearance/) requirements.

The following courses meet the undergraduate APU Core general education requirements within the Integrated Bachelor's/Credential Program:

- TESP 502 meets the APU Core: Social Science general education requirement.
- TESP 503 meets the APU Core: Intercultural Competence general education requirement.

Program Learning Outcomes

BA in Mathematics

Program Learning Outcomes

Students who successfully complete this program shall be able to:

1. Master fundamental mathematical methods and problem solving strategies.
2. Employ logical reasoning and standard proof techniques to construct rigorous mathematical arguments.
3. Communicate mathematical ideas in speech and writing, combining precise language and notation with insightful explanation.
4. Use mathematical models to analyze cross-disciplinary problems.
5. Employ appropriate technology and computational techniques.
6. Articulate how Christian perspectives and the study of mathematics and its applications mutually inform and enhance each other.

Integrated Single Subject (Math) Teaching Credential
Program Learning Outcomes

Students who successfully complete this program shall be able to:

1. Engage and support all students in learning.
2. Create and maintain effective environments for student learning.
3. Understand and organize subject matter for student learning.
4. Plan instruction and design learning experiences for all students.
5. Assess student learning.
6. Develop as a professional educator.