Major Course Requirements

A minimum of 66.5 hours (29.5 upper-division hours)

> Required Core Courses (43.5 hours):
  MATH 131+132+133  Calculus I,II,III  4+4+4
  MATH 265  Elementary Linear Algebra  4
  MATH 269  Elementary Differential Equations  4
  MATH 275  Logic and Sets  4
  MATH 331  Probability Theory  3
  MATH 351  Introduction to Abstract Algebra I  4
  MATH 385  Mathematical Modeling  4
  MATH 390  Seminar  .5
  MATH 421  Elementary Real Analysis I  4
  MATH 490  Senior Seminar  1
  At least one of the following courses: 3
  MATH 332  Mathematical Statistics (3)
  MATH 352  Introduction to Abstract Algebra II (3)
  MATH 422  Elementary Real Analysis II (3)

> Required Core Electives (16 hours):
  At least 10 hours from the following: 10
  Additional upper-division MATH courses
  At least 6 hours from the following: 6
  Additional MATH courses

> Required Cognate Courses (7-9 hours):
  INFS 115  Intro to Computer Programming  4
  At least one of the following courses: 3-5
  CHEM 451  Physical Chemistry (3)
  ENGR 211  Engineering Mechanics (3)
  ENGR 216  Circuit Theory (4)
  FIN 341  Finance (5)
  INFS 470  Management Science (4)
  PHYS 211  Physics with Calculus (4)
  STAT 322  Statistical Methods (3)

All core and cognate courses should be chosen in consultation with the major advisor. Students should consider the recommendations described below:

Pure Mathematics
  MATH 267, 332, 352, 422, 425, and 465.

Applied Mathematics
  MATH 332, 355, 375, STAT 322, INFS 470.
  Students interested in applied mathematics should earn a minor in an applied field. Consult with your advisor for choices.

Mathematics Education
  MATH 341, 354, 355, and 451.

Actuarial Certification
  MATH 267, 332, 375, STAT 322, and INFS 470.

Student Learning Outcomes

Students can:
- Demonstrate proficiency in the basic mathematics and problem solving skills of the standard core of undergraduate mathematics.
- Apply mathematical principles to new situations, within mathematics as well as in other settings.
- Explain the role of proof, evaluate the validity of a proof, and create and write valid proofs.
- Communicate mathematics in written and oral form to peers as well as to people with less mathematical background.
- Perform as an effective member of a team to do mathematics.
- Display familiarity with various technologies commonly used for mathematical investigations.

Occupational Information

What can I do with this major?

A focus on Pure Mathematics provides a theoretical background for graduate studies in mathematics and related areas, such as statistics, computer science, and physics. This focus will allow for research as well as teaching in higher education.

A focus on Applied Mathematics or Statistics can lead to mathematics-related careers in medicine, government, business, and industry. Graduate study opportunities can lead to specialties in actuarial science, operations research, and applied statistics. (A minor is highly recommended. Consult with your advisor for choices).

A focus on Mathematics Education will lead to a California Teaching Credential in secondary school mathematics. The mathematics portion of the California Subject Exam for Teachers (CSET) is usually taken during the senior year. (Students who wish to complete their secondary teaching credential at PUC should consult the Credential Analyst in the Education Department).

Actuarial Certification: Actuaries help businesses assess the risk of certain events occurring and to formulate policies that minimize the cost of that risk. Using their broad knowledge of statistics, finance, and business, actuaries help design insurance policies, pension plans, and other financial strategies. (Students with interest in the national exams for actuarial certification should confer with departmental faculty.)

Public Sector vs. Denominational

Non-teaching jobs are most available in the public sector. There is a strong demand for math teachers in Adventist academies.

Job Outlook

In addition to high school teaching, there are many opportunities for mathematics-related careers in medicine, government, business, and industry.
Pacific Union College
Major in Mathematics, B.S.

General Education Requirements

To view general education requirements for this major, please refer to page A-01, Summary of General Education Requirements: B.S. Degree.

How to Construct Your Own Program

1. Counsel with your advisor.
2. Consider your aptitudes, interests, and available courses.
3. Schedule major courses and cognates first.
4. Fill the rest of your schedule with G.E. requirements.
5. For the freshman year include English, Religion, and PE courses. Also include Basic Algebra I+II unless waived by previous work.

What the Degree Includes

A total of 192 quarter hours including:
1. A minimum of 60 upper division hours.
2. General Education requirements.
3. Major requirements.
4. Minimum 2.0 GPA, overall and major.

Teaching Credential

Students desiring to enter a program of studies leading to a California teaching credential in mathematics should take the B.S. degree in Mathematics and complete the recommended courses for the Mathematics Education focus. For more information, please consult the Secondary Teaching Credential as outlined on page EDUC-06.

For More Information

Mathematics Department
Pacific Union College
One Angwin Avenue
Angwin, CA  94508
(707) 965-7269

Website: www.puc.edu/mathematics
E-mail: math@puc.edu.

Sample Four-Year Program

This sample curriculum is designed to show you how a program may be constructed and to help you select a proper sequence of courses in the major. It is not likely that these courses can always be taken in the order given. Your advisor will help you design a personalized program of studies.

First Year

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Third and Fourth Years

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* Courses marked (even) or (odd) are taught in alternate years only. 2017-2018 is even, 2018-2019 is odd.