Student Services

The Student Services Office is open to answer your questions regarding —

- Academic Difficulty
- Course Planning
- Career Planning
- Course Transfers
- Departmental Programs
- Enrollment Concerns
- Majors and Specializations
- Student Organizations

Student Services Office
6356 Math Science Building
(310) 206 - 1286

Undergraduate Math Advisors
Connie Jung
Lucia Saavedra
Aileen Tong

Hours of Operation
Monday - Friday
8:00 am - 11:50 am
1:00 pm - 5:00 pm

Website
www.math.ucla.edu/ugrad

Message Center
Access through MyUCLA
www.my.ucla.edu

Email
ugrad@math.ucla.edu

Mailing Address
UCLA Department of Mathematics
520 Portola Plaza
Box #951555
Los Angeles, CA 90095-1555

Academic Advising Schedule

<table>
<thead>
<tr>
<th>Week 0 - 2</th>
<th>Week 3 - Finals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop-in Advising*</td>
<td>Drop-in Advising*</td>
</tr>
<tr>
<td>Priority given to enrollment issues</td>
<td></td>
</tr>
<tr>
<td>Monday – Friday</td>
<td>Monday – Friday</td>
</tr>
<tr>
<td>9:00 am – 11:50 am</td>
<td>9:00 am – 11:50 am</td>
</tr>
<tr>
<td>1:00 pm – 4:00 pm</td>
<td>1:00 pm – 4:00 pm</td>
</tr>
</tbody>
</table>

*Drop-in times vary. Please contact the office at (310) 206-1286 or stop by MS 6356 to confirm hours.
1. **Who should I go to regarding my GE or university requirements?**

Questions regarding university or college requirements should be directed to the student’s designated college counseling office (College of Letters and Science, Honors, AAP or Athletics). For more information, refer to their website.
http://www.registrar.ucla.edu/Academics/Academic-Counseling

2. **Where can I obtain information about courses offered through other departments (non Math/PIC courses)?**

For questions in regards to non Math/PIC course syllabus, prerequisites, enrollment restrictions, transferability, etc., students should check with the department that offers the course. The Mathematics Department does not have control over enrollment in courses outside of math and PIC.

3. **Do I need to take the Math Diagnostic Test?**

All students wishing to enroll in Math 1, Math 3A or Math 31A are required to take a math placement test. For Summer 2017, this may be either the longstanding proctored Math Diagnostic Test (MDT), or the online ALEKS PPL test. The MDT is free whereas a subscription to ALEKS PPL costs $25. ALEKS PPL, to be used exclusively after Fall 2017, is an artificial intelligence program that poses learning problems for you based on your performance on their test. It is taken up to **three (3) times** before enrollment placement is determined. The first time is to get used to the program, the second time is the first real test to be taken as soon as possible, and the third one is to be taken (if needed) just before enrollment begins after you have improved your skills as much as possible. Details concerning the math placement are on the departmental webpage.

All students who take the MDT or ALEKS PPL and place into Math 1, but not Math 3A or Math 31A, have the opportunity to use the ALEKS PPL to place into a special 5.0 unit calculus class, Math 31AL, which will incorporate pre-calculus strengthening work into its structure.

Please contact the Student Services Office if you are not sure whether you need to take the exam.

4. **Can I retake the Math Diagnostic Test? How often is the test offered?**

Yes. Students are only allowed **two (2) attempts** on the diagnostic exam per term. The second score, for better or worse, will be placed into the student’s record. The test and makeup exam are given during specific periods of time. Refer to our website for specific exam times and locations. If students are unable to reach a desired score after the retake, students will have to wait until the next quarter the exam is offered to take the test again.

www.math.ucla.edu/ugrad/diag-testdates
Frequently Asked Questions

5. If I took an AP Calculus exam, what math course should I enroll in at UCLA?

Only students that receive a score of 3, 4 or 5 on the AP Calculus AB or BC exams will receive college credit. Credit may vary depending on your major and the college you belong to. Math majors will receive the credit as indicated in the following chart:

<table>
<thead>
<tr>
<th>Score</th>
<th>AB Exam</th>
<th>BC Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Credit for Math 31A</td>
<td>Credit for Math 31A, 31B</td>
</tr>
<tr>
<td></td>
<td>Enroll in Math 31B/3B</td>
<td>Enroll in Math 32A/3C</td>
</tr>
<tr>
<td>4</td>
<td>Credit for 4 units of calculus</td>
<td>Credit for Math 31A and 4 units of calculus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enroll in Math 31B/3B</td>
</tr>
<tr>
<td>3</td>
<td>Credit for 4 units of calculus</td>
<td>Credit for 8 units of calculus</td>
</tr>
<tr>
<td>2</td>
<td>No college credit</td>
<td>No college credit</td>
</tr>
<tr>
<td>1</td>
<td>No college credit</td>
<td>No college credit</td>
</tr>
</tbody>
</table>

6. What credit will I receive with my International Baccalaureate (IB) Higher Level Exam?

UCLA awards college credit for higher level (HL) exams only. Credit awarded by UCLA as a result of IB exams is subject to change without notice. Course descriptions for each IB subject are reviewed by UCLA on a yearly basis. IB examinations, AP examinations, and college courses taken prior to or after enrolling at UCLA may be duplicative. In these cases students will be awarded credit for only one.

A score of 5-7 on the IB higher level Math test will grant students 4.0 units of Math 1 and credit for 4.0 units of calculus only. Consult with the Undergraduate Admission Office for more information. Credit may vary depending on your major and the college you belong to.

www.admission.ucla.edu/Prospect/IBCreditLS.htm
www.admission.ucla.edu
Frequently Asked Questions

7. Does my Advanced Level General Certificate of Education, commonly referred to as an A-Level exam, count for anything?

Credit awarded by UCLA as a result of A-Level exams is subject to change without notice. In order to receive credit for math equivalences, the A-Level exams must be passed with “C” grades or better. Credit may vary depending on your major and the college you belong to. Consult with the Undergraduate Admission Office for more information.

www.admission.ucla.edu

### Possible UCLA Course Credit for CIE A-Level Exams

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Mathematics 1 (P1) + Pure Mathematics 3 (P3) + Mechanics 1 (M1) + Probability and Statistics 1 (S1)</td>
<td>Math 1, Math 31A</td>
<td>Math 1, Math 31A</td>
</tr>
<tr>
<td>Pure Mathematics 1 (P1) + Pure Mathematics 3 (P3) + Mechanics 1 (M1) + Mechanics 2 (M2)</td>
<td>Math 1, Math 31A</td>
<td>Math 1, Math 31A</td>
</tr>
<tr>
<td>Pure Mathematics 1 (P1) + Pure Mathematics 3 (P3) + Probability and Statistics 1 (S1) + Probability and Statistics 2 (S2)</td>
<td>Math 1, Math 31A</td>
<td>Math 1, Math 31A</td>
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### Possible UCLA Course Credit for Singapore A-Level Exams

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher 2 Mathematics: (P1) + (P2)</td>
<td>Math 1, Math 31A</td>
<td>Math 1, Math 31A</td>
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</tbody>
</table>

### Possible UCLA Course Credit for Edexcel A-Level Exams

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
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</thead>
<tbody>
<tr>
<td>GCE Mathematics (9371): C1, C2, C3, C4</td>
<td>Math 1, Math 31A</td>
<td>Math 1, Math 31A</td>
</tr>
<tr>
<td>GCE Further Mathematics (9372): FP1 and FP2</td>
<td>12.0 title units</td>
<td>12.0 title units</td>
</tr>
<tr>
<td>GCE Further Mathematics (9372): FP1 and FP3</td>
<td>12.0 title units</td>
<td>12.0 title units</td>
</tr>
<tr>
<td>GCE Pure Mathematics (9373): C1, C2, C3, C4, FP1</td>
<td>Math 1, Math 31A</td>
<td>Math 1, Math 31A</td>
</tr>
</tbody>
</table>

References:
CIE A-Level Mathematics (9709):
CIE A-Level Mathematics - Further (9231):
Singapore A-Level:
Edexcel A-Level:
Frequently Asked Questions

8. What is a typical course load for math students?
All math majors should be taking at least one math class per quarter for the first two years. By their junior year, students should be taking two to three major courses per quarter. These are just recommendations. Schedules and course load will vary depending on students’ interests and level.

9. How big are the math courses?
Lower division courses usually have a capacity of 210 students in each the lecture (35 students per discussion). Upper division courses usually have a capacity of 40 students in each lecture.

10. What if a math course I planned to take is full during my enrollment appointment?
If there are any open sections of that course offered at a different time, it is best to try to rearrange your schedule and enroll in the open section. Otherwise, you should add yourself to the waitlist. If both the course and waitlist are full, you can continue to check the enrollment numbers and try to add yourself to the waitlist if space becomes available.

Upper division math courses are restricted to math majors and minors during first pass. Students in a math pre-major are not able to enroll in upper division math courses during first pass. Enrollment is open to all students during second pass, with a few exceptions in certain specialized courses.

For upper division math courses only, you can place your name on the unofficial waitlist. The unofficial waitlist opens on the first day of class. There are no guarantees on this unofficial waitlist - Permission to Enroll numbers will be given out by priority when the class enrollment falls below its maximum. www.math.ucla.edu/ugrad/unofficial-waitlist

If you are not enrolled in the class by the first day of instruction, you can stop by MS 6356 or email ugrad@math.ucla.edu for more information. It is always a good idea to have a back-up plan, as enrollment in any course is not guaranteed and you may have to take the course the next time it is offered.

11. Can I take a “Preparation for the Major” or “Major” course pass/no pass?
No. All required courses for the major, minor, or specialization must be taken for a letter grade.

12. If I received a “C–” or lower in my math class, may I repeat it?
For lower-division mathematics courses, students may not take or repeat a course for credit if it is a requisite for a more advanced lower-division course for which they already have credit. This applies in particular to the repetition of courses (e.g., if students wish to repeat Mathematics 31B, they must do so before completing course 32B; if students wish to repeat Mathematics 3B or 31B or 32A, they must do so before completing course 33A).

For upper-division mathematics courses, students may not take or repeat a lower sequence course for credit if it is part of a sequence for which they already have credit. This applies in particular to the repetition of courses (e.g., if students wish to repeat Mathematics 131A, they must do so before completing course 131B or 131BH).

Students may not receive credit for both a course and the honors version of that course (e.g., they may not receive credit for both Mathematics 131A and 131AH). In addition, please refer to the College of Letters and Science website at for more information about regulations/rules for repeating courses.
13. How and when may I drop a course?

<table>
<thead>
<tr>
<th>College of Letters and Science Drop Period</th>
<th>Type</th>
<th>Method</th>
<th>Fee</th>
<th>Transcript Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks 1-2 All Courses</td>
<td>Drop</td>
<td>URSA</td>
<td>No fee</td>
<td>No transcript notation</td>
</tr>
<tr>
<td>Weeks 3-4 Non-impacted Courses</td>
<td>Drop</td>
<td>URSA</td>
<td>$5</td>
<td>No transcript notation</td>
</tr>
<tr>
<td>Weeks 3-10 Impacted Courses</td>
<td>Late Drop</td>
<td>Petition*</td>
<td>$20</td>
<td>Transcript notation</td>
</tr>
<tr>
<td>Weeks 5-7 Non-impacted Courses</td>
<td>Late Drop</td>
<td>URSA</td>
<td>$20</td>
<td>Transcript notation</td>
</tr>
<tr>
<td>Weeks 8-10 Non-impacted Courses</td>
<td>Restricted Drop (maximum 3 drops)</td>
<td>Petition*</td>
<td>$35</td>
<td>Transcript notation</td>
</tr>
<tr>
<td>After week 10</td>
<td>Retroactive Drop</td>
<td>Petition*</td>
<td>$50</td>
<td>Transcript notation</td>
</tr>
</tbody>
</table>

*Petitions are available in Murphy Hall A-316

Warning:

- If you are on financial aid and plan to drop a course, you should also speak with the Financial Aid Office to find out the consequences of your actions.
  www.financialaid.ucla.edu
- International students should first visit the Dashew Center first before dropping below 12.0 units.
  www.internationalcenter.ucla.edu

14. How can I find a tutor?

The following are some of the most frequently used tutoring services on campus:

The Student Math Center in MS 3974 offers individual and group homework assistance for lower division math courses. Hours of operation are available on the department website.
www.math.ucla.edu/ugrad/smc

The Academic Advancement Program (AAP) in Campbell Hall 1232 offers free tutoring for lower division math and sciences courses to students whose academic profiles and personal backgrounds may impact their university experience, their retention and graduation from UCLA. To determine your eligibility, visit their office or refer to their website.
www.aap.ucla.edu

Engineering and Mathematical Sciences Library (EMS) in Boelter Hall 8270 offers various academic resources to current UCLA students. For more information, visit their website.
www.library.ucla.edu/libraries/sel/science-engineering-library

Private (Fee Based) Tutoring is available from graduate students in the Mathematics Department. Refer to our website for a list of available tutors. For price rates, please contact the tutors directly.
www.math.ucla.edu/people/tutors

More tutoring resources can be viewed on our website at www.math.ucla.edu/ugrad/tutoring.
15. Can I take courses for my major at another school?
Yes. If you would like to complete some “Preparation for the Major” or “Major” courses during the summer at a community college, four-year university, or at another UC campus, you must verify course equivalencies with an undergraduate math advisor prior to completing the course. Also, please check with your college counselor regarding residency requirements and other regulations for taking courses at another school.

Upon completion of the course(s), send an official transcript to UCLA Undergraduate Admission, 1147 Murphy Hall, Box 951436, Los Angeles, CA 90095-1436. You must also fill out a Transfer Credit Evaluation Request form in order to have the course evaluated and credited to your record.

16. Will the grade for a course taken at another institution transfer to UCLA?
While credit for courses taken at other schools may be used for satisfying pre-major and major requirements, grades themselves are transferred to your UCLA transcript only for courses taken at other UC campuses and Education Abroad Programs (EAP). However, grades taken at UC Extension programs do not transfer, except for those earned in Concurrent Enrollment (XLC) classes in UCLA Extension.

17. If I want to study abroad, how can I find out if the math courses I plan on taking will count towards my major
Students should consult with the undergraduate math advisor only after they have met with EAP and know which math courses they are considering. Bring program information, course descriptions and outlines when you meet with the undergraduate math advisor.

18. When and where may I petition to change or declare my major?
Students can apply for any of the pre-majors as long as they are in good academic standing and will not go over their unit max if they are accepted into the major.

Students can petition to be in any math major as long as they meet the minimum requirements to enter the major, have not exceeded 160.0 units minus the AP or other units awarded on entry, complete the mathematics sequenced courses with “C’s” or better, have a GPA of 2.5 (2.7 for Math-Econ) or higher, and have no more than two repeats.

Additional economics preparation courses are required for the Mathematics/Economics and the Financial Actuarial Mathematics major where students can only have one repeat. Please refer to the department’s website for further information on requirements.

catalog.registrar.ucla.edu
www.math.ucla.edu/ugrad/majors
Frequently Asked Questions

19. Can I double major?

The university requires students who want to double major to complete all the preparation for the major in both majors and two upper division courses in each major before applying. Please start by meeting with the undergraduate math advisor in MS 6356. If you are looking to switch to a different major outside of the Mathematics Department, please consult with the advisor for that specific department.

20. Can I declare more than one type of math major?

No. Additionally, students cannot declare a math major and math minor, or Mathematics/Economics and any economics major.

21. How do I add the Specialization in Computing?

If you are in any math major (except Mathematics of Computation), you can submit a petition to MS 6356 upon completion of PIC 10B with a grade of “C-” or better. If at any time you wish to drop the specialization, you must submit a petition requesting that it be removed.

22. What other major or minor options are available if I decide to not be a math major?

There are two interdepartmental programs with the Mathematics Department that are run by other departments:

- **Mathematics/Atmospheric and Oceanic Sciences** in the Department of Atmospheric and Oceanic Sciences Department
  www.atmos.ucla.edu/students/undergraduate/math-aos-joint-program
- **Computational and Systems Biology** in the Life Sciences Division
  www.casb.ucla.edu

There are two minors in the Mathematics Department:

- Mathematics minor
- Teaching Secondary Mathematics minor

23. What is the difference between a Mathematics/Economics and an Economics or Business Economics major?

Mathematics/Economics students receive a Bachelors of Science degree and are under the Mathematics Department major requirements. About half of the required major courses for the Mathematics/ Economics degree are in Mathematics and about half are in Economics. The program is designed to give students a solid foundation in both mathematics and economics, stressing those areas of mathematics that are most relevant to economics and the parts of economics that emphasize the use of advanced mathematics.
Credit Limitations

Credit is given for only one course in each of the following groups:

- Mathematics 3A, 31A
- Mathematics 3B, 31B
- Mathematics #, #H
- Mathematics 110A, 117
- Mathematics 174A, 174E

You may not take a mathematics course for credit if you have credit for a more advanced course that has the first course as a prerequisite. This applies in particular to the repetition of courses. For example, if you wish to repeat 31B, you must do so before completing Math 32B. However, you are allowed to repeat 31B after completing 32A, since 31B is not a prerequisite for 32A.

You may not receive credit for both a course and for the honors version of the course (e.g., you may not receive credit for both Math 131A and Math 131AH). Math 110A, Math 110B and Math 110AH, Math 110BH (Honors) are a special case. Please see an undergraduate advisor in the Mathematics Department if you find that you have stopped in the middle of one of the algebra sequences and want to finish with the other the following year.

<table>
<thead>
<tr>
<th>You may not receive credit for</th>
<th>If you have already taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 2</td>
<td>ANY Mathematics #106-199</td>
</tr>
<tr>
<td>Mathematics 132</td>
<td>Physics 132</td>
</tr>
<tr>
<td>Mathematics 151A</td>
<td>Electrical Engineering 133A</td>
</tr>
<tr>
<td>Mathematics 167</td>
<td>Economics 106G</td>
</tr>
<tr>
<td>Mathematics 170A</td>
<td>Statistics 100A or Electrical Engineering 131A</td>
</tr>
<tr>
<td>Mathematics 174A or Math 174E</td>
<td>Economics 141 or Statistics C183/283</td>
</tr>
<tr>
<td>Mathematics 182</td>
<td>Computer Science 180</td>
</tr>
</tbody>
</table>
### Majors in Mathematics

<table>
<thead>
<tr>
<th>Major</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mathematics</strong></td>
<td><strong>Pure Math</strong>&lt;br&gt;This major is a good choice for students who wish to have a strong foundation in mathematics itself, independent of applications. It is taken by students who are considering graduate level mathematics training, and is a natural choice for someone interested in a career in research and/or higher education teaching.</td>
</tr>
<tr>
<td><strong>Applied Mathematics</strong></td>
<td>Many different companies are interested in hiring applied mathematics graduates, including aerospace, financial companies, computer companies, and other technology-based industries. Students majoring in applied mathematics may also pursue graduate studies.</td>
</tr>
<tr>
<td><strong>Financial Actuarial Mathematics</strong></td>
<td>There are few actuarial programs on the West Coast, partly because actuarial instruction requires special expertise. The specialty content in UCLA’s large program is provided by professional actuaries. Overall, the major prepares students for the actuarial field by providing foundations in mathematics, economics, and finance. Students who graduate with this degree have a solid, quantitatively-oriented background which is excellent for employment in the actuarial field and in other fields such as economics, finance, applied mathematics and statistics.</td>
</tr>
<tr>
<td><strong>Mathematics of Computation</strong></td>
<td>Students following this major take mathematics courses which are related to computer science and three upper division Computer Science courses, which are generally reserved for CS majors only. They are often later hired as CS engineers, but have the flexibility to pursue other computer-related fields. Mathematics of Computation majors have also done graduate degrees in Computer Science and Applied Mathematics.</td>
</tr>
<tr>
<td><strong>Mathematics/ Applied Science</strong></td>
<td><strong>Three plans available</strong>&lt;br&gt;a) <strong>Individual</strong> — Allows students to combine upper division math with upper division course from other science areas (i.e., physics, chemistry, physiology, etc.).*&lt;br&gt;b) <strong>History of Science</strong> — For students intending to go to professional school, law or business, while pursuing their interest in mathematics.&lt;br&gt;c) <strong>Medical and Life Sciences</strong> — Prepares students for a career in the medical field while pursuing their interest in mathematics. Several courses overlap with the pre-med requirements.</td>
</tr>
<tr>
<td><strong>Mathematics for Teaching</strong></td>
<td>Geared toward individuals interested in teaching mathematics at the high school or middle school level. The program aligns with the guidelines established by the state to produce more qualified teachers.</td>
</tr>
<tr>
<td><strong>Mathematics/ Economics</strong></td>
<td>This interdepartmental major is great preparation for graduate level Economics, MBA and Financial Mathematics programs. Governments, as well as banks and other institutions of the financial industry, find its students to be good prospective employees.</td>
</tr>
</tbody>
</table>

*This major requires departmental approval and is rarely granted because the Department already offers a wide range of majors.*
### MATHEMATICS

**Pre-major (10 courses):** can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Two courses from the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Math 31B*</td>
<td>______</td>
<td>______</td>
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<tr>
<td>Math 32A*</td>
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<td>______</td>
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<tr>
<td>Math 32B*</td>
<td>______</td>
<td>______</td>
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<tr>
<td>Math 33A*</td>
<td>______</td>
<td>______</td>
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<tr>
<td>Math 33B*</td>
<td>______</td>
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<tr>
<td>PIC 10A</td>
<td>______</td>
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<tr>
<td>Physics 1A</td>
<td>______</td>
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</tbody>
</table>

Two courses from the following:

- Math 31B*
- Math 32A*
- Math 32B*
- Math 33A*
- Math 33B*
- PIC 10A
- Physics 1A

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Math 31B*</th>
<th>Econ 11</th>
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<th>Chem 20A</th>
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<th>Math 32B*</th>
<th>Chem 20B</th>
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<table>
<thead>
<tr>
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<th>Grade</th>
<th>Math 33A*</th>
<th>Life Sci 7A</th>
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<table>
<thead>
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<th>Quarter</th>
<th>Grade</th>
<th>Math 33B*</th>
<th>Physics 1B or 5B</th>
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<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>PIC 10A</th>
<th>Physics 1C or 5C</th>
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<table>
<thead>
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<th>Grade</th>
<th>Physics 1A</th>
<th>Philos 31</th>
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<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Physics 1A</th>
<th>Philos 132</th>
</tr>
</thead>
<tbody>
<tr>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
</tbody>
</table>

### The Major (12 courses): must be declared before 160.0 units (minus AP)

| Math 115A+ | ______ | ______ |
| Math 131A+ | ______ | ______ |
| Math 110A | ______ | ______ |
| Math 110B | ______ | ______ |
| Math 120A | ______ | ______ |
| Math 131B | ______ | ______ |
| Math 132 | ______ | ______ |

Five upper division mathematics courses chosen from: Math 106 - 199, Stats 100A - 102C

1. ________ | ________ | ________ | ________ |
2. ________ | ________ | ________ | ________ |
3. ________ | ________ | ________ | ________ |
4. ________ | ________ | ________ | ________ |
5. ________ | ________ | ________ | ________ |

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ “C–” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

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06/2017
# Applied Mathematics

**Pre-major (10 courses):** can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td></td>
<td></td>
<td>Physics 1A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 31B*</td>
<td></td>
<td></td>
<td>Physics 1B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 32A*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 32B*</td>
<td></td>
<td></td>
<td>One course from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 33A*</td>
<td></td>
<td></td>
<td>Chem 20A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 33B*</td>
<td></td>
<td></td>
<td>Chem 20B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 10A</td>
<td></td>
<td></td>
<td>Physics 1C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**The Major (12 courses):** must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 131A*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 131B or 132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 142</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Two 2-quarter sequences chosen from three different categories:

A. Differential Equations:
   - Math 134
   - Math 135

B. Applied Numerical Methods:
   - Math 151A
   - Math 151B

C. Probability and Statistics:
   - Math 170A and Math 170B
   - Stats 100A and Stats 100B

Four upper division mathematics courses chosen from: Math 106 - 199, Stats 100A - 102C

1.         
2.         
3.         
4.         

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of "C" or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ "C−" or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

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06/2016
FINANCIAL ACTUARIAL MATHEMATICS

**Pre-major (12 courses):** can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td>_______</td>
<td>____</td>
<td>Math 32B*</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 31B*</td>
<td>_______</td>
<td>____</td>
<td>Math 33A*</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 32A*</td>
<td>_______</td>
<td>____</td>
<td>Math 33B*</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>PIC 10A*</td>
<td>_______</td>
<td>____</td>
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</tbody>
</table>

**Quarter Grade**

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Econ 1**</td>
<td>_______</td>
<td>____</td>
<td>Mgmt 1A**</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Econ 2**</td>
<td>_______</td>
<td>____</td>
<td>Mgmt 1B**</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Econ 11**</td>
<td>_______</td>
<td>____</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Econ 1**

**Mgmt 1A**

**Econ 2**

**Mgmt 1B**

**Econ 11**

**The Major (11 courses):** must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A+</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 131A+</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 170A</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 170B</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 175</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 174A (or Math 174E or Econ 141 or Stats C183/283)</td>
<td>_______</td>
<td>____</td>
</tr>
</tbody>
</table>

**One** two-quarter actuarial sequence chosen from two different categories:

A.) Life Contingency Actuarial Models:

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 172B</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 172C</td>
<td>_______</td>
<td>____</td>
</tr>
</tbody>
</table>

B.) Casualty Loss Models:

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 173A</td>
<td>_______</td>
<td>____</td>
</tr>
<tr>
<td>Math 173B</td>
<td>_______</td>
<td>____</td>
</tr>
</tbody>
</table>

**Three** upper division **Actuarial, Economics or Statistics** courses: Math 172B – Math 173B (whichever was not taken for the two-term sequence), Econ 101 – 199B, Stats 100C

1. _________ ________________________________ _______ ___
2. _________ ________________________________ _______ ___
3. _________ ________________________________ _______ ___

*(Mathematics sequenced courses), ** (Economics preparation courses): Each are calculated separately and must be completed with a minimum overall 2.5 grade-point average and a grade of "C" or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major. Repetition of more than one economics preparation course, or of any economics preparation course more than once, results in automatic dismissal from the major. + “C-” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

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06/2016
### Pre-major (13 courses): can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td></td>
<td></td>
<td>PIC 10A</td>
<td></td>
</tr>
<tr>
<td>Math 31B*</td>
<td></td>
<td></td>
<td>PIC 10B</td>
<td></td>
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<tr>
<td>Math 32A*</td>
<td></td>
<td></td>
<td>PIC 10C</td>
<td></td>
</tr>
<tr>
<td>Math 32B*</td>
<td></td>
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<tr>
<td>Math 33A*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 33B*</td>
<td></td>
<td></td>
<td>One course from the following:</td>
<td></td>
</tr>
<tr>
<td>Math 61</td>
<td></td>
<td></td>
<td>Chem 20A</td>
<td></td>
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<tr>
<td>Physics 1A</td>
<td></td>
<td></td>
<td>Chem 20B</td>
<td></td>
</tr>
<tr>
<td>Physics 1B</td>
<td></td>
<td></td>
<td>Physics 1C</td>
<td></td>
</tr>
</tbody>
</table>

### The Major (14 courses): must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 131A+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 131B or 132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 151A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 151B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Six upper division mathematics courses chosen from: Math 106 - 199, Stats 100A - 101C

1. 
2. 
3. 
4. 
5. 
6. 

### Three upper division Computer Science courses:

1. 
2. 
3.  

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ “C–” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

CS courses at UCLA are acceptable substitutions for PIC: CS 31 = PIC 10A, CS 32 = PIC 10B, (CS 33 AND CS 35L) = PIC 10C. For help with enrollment in or information of CS courses, contact HSSEAS since all CS courses are restricted to HSSEAS students.

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**INDIVIDUAL PLAN**

Under the Mathematics/Applied Science major

**Pre-major (7 courses):** can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td></td>
<td>Math 33A*</td>
<td></td>
</tr>
<tr>
<td>Math 31B*</td>
<td></td>
<td>Math 33B*</td>
<td></td>
</tr>
<tr>
<td>Math 32A*</td>
<td></td>
<td>PIC 10A*</td>
<td></td>
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<tr>
<td>Math 32B*</td>
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</tr>
</tbody>
</table>

**The Major (14 courses):** must be declared before 160.0 units (minus AP)

**Seven** upper division mathematics courses chosen from: Math 106 – 199:

1. Math 115A* __________ ______
2. Math 131A* __________ ______
3. __________ ____________________ ________ ________
4. __________ ____________________ ________ ________
5. __________ ____________________ ________ ________

**One** 2-quarter mathematics sequence:

6. __________ ____________________ ________ ________
7. __________ ____________________ ________ ________

**Seven** upper division courses chosen from 1 - 2 related fields:

<table>
<thead>
<tr>
<th>Department</th>
<th>Course</th>
<th>Title</th>
<th>Quarter</th>
<th>Grade</th>
<th>Department</th>
<th>Course</th>
<th>Title</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
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<td></td>
<td>2.</td>
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<tr>
<td></td>
<td>3.</td>
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<td>3.</td>
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<td></td>
<td>4.</td>
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<td></td>
<td>5.</td>
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<td></td>
<td>6.</td>
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<tr>
<td></td>
<td>7.</td>
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<td>7.</td>
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</tr>
</tbody>
</table>

I understand that if I wish to make any changes to my Individual Plan, I must first obtain written approval from the Student Services Office in MS 6356.

Student's Signature _____________________________________________________________________________ Date _______________

Undergraduate Vice-Chair’s Signature __________________________________________________________ Date _______________

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of "C" or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ *“C-“ or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.*

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06/2016
**HISTORY OF SCIENCE PLAN**

Under the Mathematics/Applied Science major

**Pre-major (10 courses):** can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td>__________</td>
<td>______</td>
<td>Three courses from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 31B*</td>
<td>__________</td>
<td>______</td>
<td>Hist 2B</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Math 32A*</td>
<td>__________</td>
<td>______</td>
<td>Hist 2C</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Math 32B*</td>
<td>__________</td>
<td>______</td>
<td>Hist 3A</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Math 33A*</td>
<td>__________</td>
<td>______</td>
<td>Hist 3B</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Math 33B*</td>
<td>__________</td>
<td>______</td>
<td>Hist 3C</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>PIC 10A</td>
<td>__________</td>
<td>______</td>
<td>Hist 3D</td>
<td>__________</td>
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**The Major (14 courses):** must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A+</td>
<td>__________</td>
<td>______</td>
<td>Math 106</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Math 131A+</td>
<td>__________</td>
<td>______</td>
<td>Math 134</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Math 170A</td>
<td>__________</td>
<td>______</td>
</tr>
</tbody>
</table>

Three upper division mathematics courses chosen from: Math 110A - 199

1. __________ | __________ | ______ |
2. __________ | __________ | ______ |
3. __________ | __________ | ______ |

Six upper division **History, Philosophy or Physical Science** courses:

**Five** upper division courses from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 179A</td>
<td>__________</td>
<td>______</td>
<td>History of Medicine: Historic roots of Healing Arts</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Hist 179B</td>
<td>__________</td>
<td>______</td>
<td>History of Medicine: Foundations of Modern Medicine</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Hist 180A</td>
<td>__________</td>
<td>______</td>
<td>Topics in History of Science</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Hist M180B</td>
<td>__________</td>
<td>______</td>
<td>Historical Perspectives on Gender and Science</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Hist 180C</td>
<td>__________</td>
<td>______</td>
<td>Science and Technology in the 20th Century</td>
<td>__________</td>
<td>______</td>
</tr>
<tr>
<td>Philos 124</td>
<td>__________</td>
<td>______</td>
<td>Philosophy of Science: Historical</td>
<td>__________</td>
<td>______</td>
</tr>
</tbody>
</table>

**One Honors Collegium** course with “history of science or medicine” content:

1. __________ | __________ | ______ |

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ “C–” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

1Students can petition with the Mathematics Department for other courses not on this list to fulfill the major requirements.

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06/2017
## MEDICAL AND LIFE SCIENCE PLAN

**Under the Mathematics/Applied Science major**

### Pre-major (19 courses): can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Math 31A*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 31B*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 32A*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 32B*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 33A*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 33B*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PIC 10A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physics 1A</td>
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<tr>
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<td></td>
<td>Physics 1B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Sci 23L</td>
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</table>

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Chem 20A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chem 20B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chem 20L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chem 30A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chem 30AL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Sci 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Sci 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Sci 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Sci 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Sci 23L</td>
</tr>
</tbody>
</table>

### The Major (13 courses): must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Math 115A+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 131A+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 134</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 115A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 151A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 170A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math 170B</td>
</tr>
</tbody>
</table>

**One** upper division mathematics course chosen from: Math 110A - 199, Stats 100B - 101C

1. __________   ______________________________________________________   __________   ___

**Six** upper division outside science courses:

- Phy Sci M180A  Cellular and Systems Neuroscience
- Phy Sci M180B  Molecular and Developmental Neuroscience
- Phy Sci M180C  Behavioral and Cognitive Neuroscience


**Three** upper division courses from the following:

- Biomath 160
- Biostat 100A
- Chem CM160A
- Com Sci CM186
- EEB C119A
- EEB 133
- EEB C135
- Phy Sci 100
- Phy Sci 135

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.*

*“C-” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.*

*Students can petition with the Mathematics Department for other courses not on this list to fulfill the major requirements.*

http://catalog.registrar.ucla.edu
# MEDICAL AND LIFE SCIENCE PLAN

**Under the Mathematics/Applied Science major**

### Pre-major (18 courses): can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td></td>
<td>Chem 20A</td>
<td></td>
</tr>
<tr>
<td>Math 31B*</td>
<td></td>
<td>Chem 20B</td>
<td></td>
</tr>
<tr>
<td>Math 32A*</td>
<td></td>
<td>Chem 20L</td>
<td></td>
</tr>
<tr>
<td>Math 32B*</td>
<td></td>
<td>Chem 30A</td>
<td></td>
</tr>
<tr>
<td>Math 33A*</td>
<td></td>
<td>Chem 30AL</td>
<td></td>
</tr>
<tr>
<td>Math 33B*</td>
<td></td>
<td>Life Sci 7A</td>
<td></td>
</tr>
<tr>
<td>PIC 10A</td>
<td></td>
<td>Life Sci 7B</td>
<td></td>
</tr>
<tr>
<td>Physics 1A</td>
<td></td>
<td>Life Sci 7C</td>
<td></td>
</tr>
<tr>
<td>Physics 1B</td>
<td></td>
<td>Life Sci 23L</td>
<td></td>
</tr>
</tbody>
</table>

### The Major (13 courses): must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A+</td>
<td></td>
<td>Math 151A</td>
<td></td>
</tr>
<tr>
<td>Math 131A+</td>
<td></td>
<td>Math 170A</td>
<td></td>
</tr>
<tr>
<td>Math 134</td>
<td></td>
<td>Math 170B</td>
<td></td>
</tr>
</tbody>
</table>

**One** upper division mathematics course chosen from: Math 110A - 199, Stats 100B - 101C

1. __________ | __________

**Six** upper division outside science courses:  

| Phy Sci M180A | Cellular and Systems Neuroscience |      |
| Phy Sci M180B | Molecular and Developmental Neuroscience |      |
| Phy Sci M180C | Behavioral and Cognitive Neuroscience |      |


**Three** upper division courses from the following:  

| Biomath 160 |      | EEB 133 |      |
| Biostat 100A |      | EEB C135 |      |
| Chem CM160A |      | Life Sci 107 |   |
| Com Sci CM186 |      | Phy Sci 100 |   |
| EEB C119A |      | Phy Sci 135 |   |

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ “C–” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

1Students can petition with the Mathematics Department for other courses not on this list to fulfill the major requirements.

Note: This plan is for students starting in Winter 2018 and forward.

[http://catalog.registrar.ucla.edu](http://catalog.registrar.ucla.edu)

06/2017
### MATHEMATICS FOR TEACHING

**Pre-major (11 courses):** can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td></td>
<td>Physics 1A or 5A</td>
<td></td>
</tr>
<tr>
<td>Math 31B*</td>
<td></td>
<td>Two courses from the following:</td>
<td></td>
</tr>
<tr>
<td>Math 32A*</td>
<td></td>
<td>Chem 20A</td>
<td></td>
</tr>
<tr>
<td>Math 32B*</td>
<td></td>
<td>Chem 20B</td>
<td></td>
</tr>
<tr>
<td>Math 33A*</td>
<td></td>
<td>Physic 1B or 5B</td>
<td></td>
</tr>
<tr>
<td>Math 33B*</td>
<td></td>
<td>Physic 1C or 5C</td>
<td></td>
</tr>
<tr>
<td>Math 61</td>
<td></td>
<td>PIC 10BC - 97:</td>
<td></td>
</tr>
<tr>
<td>PIC 10A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**The Major (13 courses):** must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A+</td>
<td></td>
</tr>
<tr>
<td>Math 131A+</td>
<td></td>
</tr>
<tr>
<td>Math 105A</td>
<td></td>
</tr>
<tr>
<td>Math 105B</td>
<td></td>
</tr>
<tr>
<td>Math 105C</td>
<td></td>
</tr>
<tr>
<td>Math 106</td>
<td></td>
</tr>
<tr>
<td>Math 117 or 110A</td>
<td></td>
</tr>
<tr>
<td>Math 123 or 120A</td>
<td></td>
</tr>
<tr>
<td>Math 170A or Stats 100A</td>
<td></td>
</tr>
<tr>
<td>Stats 100B</td>
<td></td>
</tr>
</tbody>
</table>

**One** course chosen from Math 131B - 136: Mathematics Analysis

1. __________  ___________________________________________________  __________  ____

**One** course chosen from Math 142 - 167: Applied Mathematics

1. __________  ___________________________________________________  __________  ____

**One** course chosen from Math 110B – 191H or Stats 100C: Upper Division Mathematics

1. __________  ___________________________________________________  __________  ____

**Disclaimer:** In order to receive a 100% CSET waiver from UCLA, students must have “C-” or better in the following courses and an upper division GPA of 2.0 or higher: Mathematics 117 or Mathematics 110A, Mathematics 123 or Mathematics 120A, Mathematics 131A, Mathematics 105A, Mathematics 109B, and Mathematics 105C.

http://curtiscenter.math.ucla.edu/undergraduates

*The mathematics sequenced courses are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.

+ “C-” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

http://catalog.registrar.ucla.edu 06/2017
## MATHEMATICS/ECONOMICS

### Pre-major (11 courses): can declare at any time when student is in good academic standing

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 31A*</td>
<td>_______</td>
<td>_____</td>
<td>Math 33A*</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 31B*</td>
<td>_______</td>
<td>_____</td>
<td>Math 33B*</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 32A*</td>
<td>_______</td>
<td>_____</td>
<td>Math 61*</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 32B*</td>
<td>_______</td>
<td>_____</td>
<td>PIC 10A*</td>
<td>_______</td>
<td>_____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Econ 1**</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Econ 2**</td>
<td>_______</td>
<td>_____</td>
</tr>
</tbody>
</table>

### The Major (14 courses): must be declared before 160.0 units (minus AP)

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A+</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 131A+</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 131B</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 164</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 170A</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 170B</td>
<td>_______</td>
<td>_____</td>
</tr>
<tr>
<td>Math 174E</td>
<td>_______</td>
<td>_____</td>
</tr>
</tbody>
</table>

(Mathematics sequenced courses), ** (Economics preparation courses): Each are calculated separately and must be completed with a minimum overall 2.7 grade-point average and a grade of “C” or better in each course. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major. Repetition of more than one economics preparation course, or of any economics preparation course more than once, results in automatic dismissal from the major.

+ “C–” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

### One upper division mathematics courses chosen from: Math 134, Math 135, Math 136, Math 171

1. ________

### Six upper division Economics courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Econ 101+</td>
<td>_____</td>
</tr>
<tr>
<td>Econ 102+</td>
<td>_____</td>
</tr>
<tr>
<td>Econ 103</td>
<td>_____</td>
</tr>
<tr>
<td>Econ 103L</td>
<td>_____</td>
</tr>
</tbody>
</table>

### Two additional upper division economics courses chosen from: Econ 106 - 199

1. ________
2. ________
The Specialization in Computing is not a major, but a supplement to the Mathematics, Applied Mathematics, Financial Actuarial Mathematics, Mathematics/Applied Science, Mathematics for Teaching and Mathematics/Economics majors. It provides an extensive education in elementary computer science and an introduction to its applications in mathematics.

Students who complete the specialization will receive a notation on their diploma. Mathematics/Economics majors interested in a Specialization in Computing must follow the specialization offered through the Mathematics Department.

- Each PIC and Math course applied to the specialization must be passed with a minimum grade of “C-” and an overall combined GPA of 2.0.
- Students planning to complete the Specialization in Computing must petition to add this program to their major after completing PIC 10B. Petitions should be filed in the Student Services Office, MS 6356.
- Students who have added the Specialization in Computing to their major and choose to graduate before completing the specialization must officially drop the program by filing a petition in MS 6356.
- Courses 180 and 182 may only be applied once to the Specialization in Computing.

**Required for the specialization (7 courses):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIC 10A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 10B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two PIC courses from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 10C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 20A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 20B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 40A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC 60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**One** mathematics course from the following:

Math 61 *or* Math 180 *or* Math 182 *or* Math 184

Two upper division mathematics courses chosen from: Math 149 - 159, 180, 182

1. _________  ________________________________  _______  __________
2. _________  ________________________________  _______  __________
The Mathematics minor is designed to provide students who are not math majors the opportunity to deepen their understanding of the role of mathematics in various disciplines.

Students planning to complete the minor in mathematics must petition to add this minor to their major after completing 12.0 units of mathematics towards the minor at UCLA. At least one of the courses taken for these 12.0 units must be an upper division course taken at UCLA. Students who have added the minor and choose to graduate before completing the minor must officially drop the minor by filing a petition in the Student Services Office, MS 6356.

Students must complete all lower division courses with grades of “C” or better. Upper division courses must have an overall grade-point average of 2.0 or better that is calculated separately from the lower division courses. A minimum of 20.0 units applied toward the Mathematics minor requirements must be in addition to units applied toward major or other minor requirements.

Note that certain standard pre-major (lower division) math courses are not required for the minor (Math 31A, Math 31B, Math 32B). Nevertheless, all upper division mathematics course prerequisites are enforced for all students.

**Required for the minor (8 courses):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 32A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 33A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 33B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Five** upper division mathematics courses chosen from: Math 106 – 199

1. 
2. 
3. 
4. 
5. 

Note: This minor is not open to any math major.
The Teaching Secondary Mathematics minor is designed for students majoring in fields other than mathematics who plan to teach secondary mathematics after graduation. For non-majors joining the Mathematics Department and School of Education’s Joint Mathematics Education Program (JMEP), the minor provides recognition for completion of prerequisite coursework for the program. The minor provides additional upper division course work in mathematics relevant to the secondary school curriculum: algebra, geometry, and analysis. This coursework also prepares students for content on the California Subject Examination for Teachers, which is required to prove competence in the subject matter. In addition, the minor provides the coursework on secondary mathematics from an advanced standpoint which is recommended by the Conference Board of Mathematical Sciences.

To enter the minor, students must have completed Mathematics 115A with a grade of “C” or better. If Mathematics 115A was not completed at UCLA, students must show proof that they completed an equivalent course with a grade of “C” or better. Students who have added the minor and choose to graduate before completing the minor must officially drop the minor by filing a petition in the Student Services Office, MS 6356.

A minimum of 20.0 units applied toward the Teaching Secondary Mathematics minor requirement must be in addition to units applied toward major or other minor requirements.

Note that even though lower division courses (Math 31A, Math 31B, Math 32A, Math 32B, Math 33A, Math 33B) are not required for the minor, please be aware of any upper division mathematics courses for which those prerequisites are enforced for all students.

**Required for the minor (7 courses):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 115A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Upper division mathematics courses with “C-”s” or higher and a minimum 2.0 upper division GPA

<table>
<thead>
<tr>
<th>Course</th>
<th>Quarter</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 117 or Math 110A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 123 or Math 120A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 131A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 105A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 105B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math 105C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ “C” or better. It is strongly recommended that students take Math 115A as one of their first upper division courses before Math 131A.

Note: This minor is not open to any math major.
Departmental Honors & Scholar

The Mathematics Departmental Honors and Scholar Programs are two of our most rigorous programs, designed to further prepare students for graduate study.

While the Departmental Honors Program grants eligible students the opportunity to work closer with faculty and apply their learning to an original project, the Departmental Scholar Program allows students with exceptional academic records to simultaneously pursue a Bachelors and Masters degree in mathematics.

If you are interested in applying or have any questions about either of these programs, please consult with the undergraduate math advisor.

Admission to the Honors Program

To be considered for admission to the Departmental Honors Program for any math major, a student must:

- be officially enrolled in his/her respective math major;
- have completed at least four courses at UCLA in the Mathematics Department from those required in the “Preparation for the Major” or “Major”; and
- have at least a 3.6 GPA in such mathematics courses taken at UCLA.

To be considered for admission to the Honors Program in Mathematics/Economics, a student must:

- be officially enrolled in the Mathematics/Economics major;
- have completed all of the “Preparation for the Major” courses; and
- have at least a 3.5 GPA in the “Preparation for the Major”.

In addition to the requirements listed above, students must complete specific courses within the department. Please refer to our website at for more information and consult with the undergraduate math advisor.

www.math.ucla.edu/ugrad/honor-programs

Eligibility & Timeline for the Scholar Program

Admission to the Scholar program is based on completion of requirements and evaluation of overall performance in relevant courses. You are eligible to petition to become a Scholar after:

- Completion of at least 96.0 units;
- Completion of all “Preparation for the Major” courses;
- Completion of the entire Math 30-series courses (31AB, 32AB, 33AB); and
- Completion of Math 115AH, 115B, 131AH and 131BH.

First year at UCLA: Complete or have credit from another institution/standardized test (AP or IB Exams) all lower-division calculus-based courses (Math 31A, 31B, 32A, 32B, 33A, 33B). If possible, take 115AH in spring.

Second year at UCLA: Complete Math 115AH (Honors Linear Algebra), Math 115B (Linear Algebra), Math 131AH (Honors Analysis) and 131BH (Honors Analysis). Completion of these courses will provide a strong foundation for the Basic Qualifying Exam.

Third Year at UCLA: Pass the Basic Qualifying Exam. Petition to become a Scholar. Complete other courses for your particular math major. If possible, begin graduate courses as well.

Fourth year at UCLA: Complete the remaining graduate level courses for the Masters Degree.

In addition to the requirements listed above, final approval is required from College Honors and the Graduate Division. Please refer to our website for more information and consult with the undergraduate math advisor.

www.math.ucla.edu/ugrad/scholar
Successful graduate work in mathematics requires skills in formal reasoning and in constructing rigorous mathematical proofs. These skills are more essential for success at the graduate level than is the knowledge of any particular topic. The honors sequences will provide training in these skills to a far greater degree than the regular sequences. In fact, a typical graduate admissions committee will look more favorably upon an “A-” earned in a honors sequence than a “A”, or even “A+”, earned in the regular sequence.

Most applications for graduate programs in mathematics must be submitted between December and February, so it is best to contact colleges during the summer or access their websites for online applications and additional information.

Most universities will require the following materials with their applications:

- Three letters of recommendation
- GRE general and mathematics subject exams
- Personal statement

**Recommended Courses to Prepare for Graduate School**

**For Pure Mathematics**
- Math 115AH + 115B
- Math 131AB (Honors) + 131C
- Math 110AB (Honors) + 110C
- Math 120A, 121
- Math 132H
- Math 133, 134, 135 and 136

**For Applied Mathematics**
- Math 115AH + 115B
- Math 131AB (Honors) + 131C
- Math 110AB (Honors) + 110C
- Math 132H
- Math 133, 134, 135 and 136
- Math 151AB, 155, 156
- Math 170AB, 171

Please research on the graduate or professional schools you are interested in before meeting with the undergraduate math advisor for information on applying to graduate school and timelines.

For information about applying to medical or professional schools, visit the Career Center. [www.career.ucla.edu](http://www.career.ucla.edu)
Research Opportunities — At UCLA

IPAM Research in Industrial Projects for Students (RIPS)
www.ipam.ucla.edu/programs/student-research-programs

RIPS is based on the successful Math Clinic concept that originated at Harvey Mudd College in 1973, as well as the Research Experience for Undergraduates (REU) program sponsored by the National Science Foundation (NSF). In the RIPS program, teams of students, directed by faculty advisors, work to solve industry-related problems. RIPS brings together highly qualified undergraduates in mathematics, or related majors, with sponsoring industry, government, and nonprofit organizations to collaborate on projects. Each team of three to four advanced students spends two summer months working on a problem posed by the sponsoring organization under the leadership of a faculty advisor. Projects focus on problems of serious interest to the sponsor and stimulating challenges to the students. Participation in RIPS provides valuable real-world technical and managerial experience for students and valuable R&D for the sponsor.

UCLA NSF Research Education for Undergraduates (REU) Program
www.math.ucla.edu/~bertozzi/WORKFORCE

The REU program includes both individual research and group activities. Each student is assisted by a faculty advisor and some also by a graduate-student advisor. Group activities include seminars and other social and professional events. Students are encouraged to continue their research during the following academic year, under the direction of their summer mentor or another faculty member. Eligible students will receive a stipend for their work.

UCLA Undergraduate Research Center (URC)
www.ugresearchsci.ucla.edu

The URC - Sciences serves students and faculty in all areas of life and physical sciences, engineering and mathematics. The primary mission is to promote, develop and celebrate undergraduate student research with the overall goal of enhancing undergraduate education and preparing students, including those from disadvantaged backgrounds, for academic and research careers. Research takes different forms in different disciplines. However, in all disciplines, research involves creative activities and meaningful research to produce results that are worthy of communication to others. Undergraduate research involves the close collaboration between a student and a faculty mentor, as well as other members of their research group.

Some of the programs that the URC runs through the school year and summer include, but are not limited to:

- Amgen Scholars Summer Program
- Biomedical Sciences Enrichment Program
- Bridges to UCLA for Community College Students
- CARE Fellows & Scholars Program
- CARE Science, Engineering & Math Summer Research Program
- Clare Boothe Luce Undergraduate Research Program
- Grand Challenges Undergraduate Research Scholars Program
- i²URP (formerly HHURP)
- Maximizing Access to Research Careers (MARC) Program

UCLA Undergraduate Research Portal
www.my.ucla.edu

You can search for research opportunities in all disciplines through the Research Portal in MyUCLA. When you log in, click on “Academics” and then “Undergraduate Research Portal”.

While UCLA has many opportunities for undergraduate research, we also highly encourage students to take advantage of research opportunities from other institutions. Below are some examples of research opportunities outside of UCLA.

**National Science Foundation (NSF) REU Programs**


NSF funds research and education in most fields of science and engineering. It does this through grants, and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the United States. The Foundation accounts for about one-fourth of federal support to academic institutions for basic research. The agency operates no laboratories itself but does support National Research Centers. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

**Science Undergraduate Laboratory Internships (SULI)**

[science.energy.gov/wdts/suli](http://science.energy.gov/wdts/suli)

The SULI program encourages undergraduate students to pursue science, technology, engineering, and mathematics (STEM) careers by providing research experiences at the Department of Energy (DOE) laboratories. Selected students participate as interns appointed at one of 17 participating DOE facilities/laboratories. They perform research, under the guidance of laboratory staff scientists or engineers, on projects supporting the DOE mission. The SULI program is sponsored and managed by the DOE Office of Science's and Office of Workforce Development for Teachers and Scientists (WDTS) in collaboration with the DOE facilities/laboratories.

**DIMACS REU: Research Experience for Undergraduates at Rutgers University**

[reu.dimacs.rutgers.edu](http://reu.dimacs.rutgers.edu)

DIMACS was founded as one of 24 Science and Technology Centers funded by the NSF. It is located at Rutgers University, and is a joint project of Rutgers, Princeton, AT&T Laboratories, Applied Communication Sciences, NEC Laboratories America, and Nokia Bell Labs. Applicants should be undergraduates with a major in Computer Science, Mathematics, or a closely related STEM field. They should be current juniors (graduating in the fall or spring immediately following the program), although sophomores with exceptionally strong backgrounds will be considered. Freshmen who have completed advanced course work in CS or Math may apply, but they are very rarely accepted.

**MathPrograms.Org**

[www.mathprograms.org](http://www.mathprograms.org)

The MathPrograms service hosts a database of undergraduate summer research programs, small travel grant programs, and various other opportunities in mathematics at institutions across the nation.
Graduating with a major in mathematics from UCLA will give you the critical thinking skills that employers are seeking. Mathematics opens the door to unlimited opportunities, if you are willing to invest the time necessary to perform well. Our students have been employed by a diverse selection of companies in varying capacities.

In today’s competitive world, a good education is essential. With a strong background in mathematics and logic, you give yourself the best advantage for ANY career you choose.

Some of the careers our students have enjoyed:

- Computer Programmer
- Financial Analyst
- Actuary
- Buyer
- Programmer Analyst
- High School Teacher
- Navy Pilot
- Management Consultant
- Cost Analyst
- Financial Planner
- Auditor
- Technical Advisor
- Accountant

And many, many more!

For more information about career opportunities please visit the Career Center online.
career.ucla.edu
UCLA Bruin Actuarial Society (BAS)

The UCLA Bruin Actuarial Society is designed for those students interested in the actuarial profession. They serve as a support group for motivated students who plan on taking actuarial exams and want to find internships and jobs in the field. They are also dedicated to informing fellow Bruins who are interested in the actuarial field. During the last year, weekly e-mails were sent out to club members regarding company information sessions, internships, jobs, and scholarships.

www.math.ucla.edu/~actuary • bruinactuaries@gmail.com

Undergraduate Mathematics Students’ Association (UMSA)

The UCLA Undergraduate Mathematics Students’ Association is an officially recognized student group for mathematics majors, and students of the other majors, who are interested in mathematics. UMSA was established in response to students’ desire to have a connection to the Mathematics Department. The purpose of UMSA is to:

- Promote the academic awareness of the mathematics major.
- Promotes better student-faculty relations.
- Provide information on career opportunities in mathematics.
- Provide a peer network in which students can discuss and further develop ideas and concepts that are presented in mathematics courses.

www.math.ucla.edu/~umsa • umsa@math.ucla.edu

UCLA Pi Mu Epsilon (PME)

Pi Mu Epsilon, Inc., is the Honorary National Mathematics Society. Their purpose is “to promote scholarly activities in the mathematics among students, awareness of higher educational programs and career opportunities in mathematics, as well as social activities among its members.” Current and future chapter projects include arranging popular talks on mathematical topics, a weekly problem-solving group, on-campus and off-campus community involvement (i.e., setting up high school competitions), and social activities.

www.pme-math.org • PMEinLA@gmail.com
Do you love mathematics?

Do you like to explain mathematics concepts to others?

Imagine getting to develop a deep understanding of the mathematics you've learned and help young students every day of the work week! Teaching is a fun, creative, rewarding and challenging career. It is well paid with salaries starting at ~$50K and peaking at ~$100K for ten months of work. Further, because a significant portion of secondary mathematics teachers do not have strong mathematics backgrounds, mathematics majors who want to teach mathematics are in high demand. Recent data shows that even if every California (CA) mathematics major graduating next June chose to teach, more than half of the state's open secondary mathematics teaching positions would not be filled.

UCLA is one of the top California universities with graduates who go on to earn a CA mathematics teaching credential. Research shows that over 80% of UCLA mathematics graduates who go on to complete their teaching credential in the UCLA Teacher Education Program remain in teaching after 5 years. This is a stark contrast to the Los Angeles Unified School District average of 62%! In addition, evidence demonstrates that a significant fraction of UCLA Mathematics Department teacher preparation program graduates become mathematics teacher-leaders, increasing their impact on the mathematics education of local communities.

We encourage you to participate in our programs. We offer solid preparation for a career in teaching, a strong foundation for future leadership in the field, a cohort of colleagues to support you in the classroom, and dependent on funding, financial support toward your goals.

For general questions about UCLA Teaching Preparation Program, contact the undergraduate math advisor. For additional questions or general inquiries about a career in teaching mathematics, please feel free to contact the Curtis Center Executive Director, Heather Dallas — dallas@math.ucla.edu
Teaching Preparation Programs

UCLA CaTeach - Math

UCLA California Teach - Math offers up to four years of courses, field experiences, credential preparation, and professional networking opportunities for undergraduates interested in teaching mathematics. In the program, mathematics professors, mathematics educators, and current mathematics teachers will work with you to provide you with the content and pedagogical content knowledge necessary to be a high quality mathematics teacher. Each year of the program includes mathematics courses, mathematics education courses, observation and participation in local schools, and credential preparation. Students may enroll in anywhere from one to all four years of the program, and those who complete all four years are thoroughly prepared for admission to a CA credential program.

www.cateach.ucla.edu

The Joint Mathematics Education Program (JMEP)

The Joint Math/Ed Program is a collaborative effort of the UCLA Mathematics Department and the Graduate School of Education’s Teacher Education Program. In this program, students begin work toward a CA Preliminary Single Subject Teaching Credential in Mathematics and a Master of Education degree during their senior year. The program enables students to earn a full time salary (about $40,000) while teaching full time in Los Angeles urban schools during the academic year immediately following their bachelor's degree. Students accepted to the JMEP are automatically enrolled in the CalTeach - Math Senior Year.

Subject Matter Preparation Program (SMPP) for the CA Teaching Credential

Applicants for a CA Preliminary Single Subject Teaching Credential in Mathematics must verify their “subject matter competence” to teach mathematics in one of two ways: 1.) complete a CA-approved “subject matter program” and obtain verification of completion from the university with the approved program or 2.) achieve a passing score on the three part California Subject Matter Examination for Teachers (CSET).

The UCLA Mathematics Department is a CA-approved “subject matter program” in mathematics. The program is comprised of mathematics courses, most of which are common to most mathematics majors, and the Math 105ABC sequence. Students who complete the department’s Mathematics for Teaching major will qualify for the department’s CA-approved subject matter program. At the end of their senior year, students may request a letter from the Curtis Center Executive Director’s office verifying their completion of these courses and thus their subject matter competence for the CA Single Subject Teaching Credential in Mathematics.

For more information and to apply, see the UCLA Curtis Center website.
curtiscenter.math.ucla.edu/undergraduates
curtiscenter.math.ucla.edu/undergraduates/joint-math-education-program
Programming In Computing — PIC Lab

The PIC Lab supports both PIC students learning programming and math students who wish to use analytical software. The lab is reserved for PIC and math students only.

Student accounts have 1 GB of disk space on the network drive and may print 200 pages per class per quarter at no charge. No additional printing is allowed.

Accounts are automatically created for all eligible students each quarter or can be requested at the Student Services Office in MS 6356.

Hours may vary each quarter. See webpage for actual hours each quarter. Reduced hours during finals week.

Lab Location: Math Sciences 2000
www.pic.ucla.edu/piclab
(310) 825-7267

Fall, Winter and Spring Quarter

Monday - Friday 9:00 am - 6:00 pm
Sunday 1:00 pm - 5:00 pm

Summer Sessions

Monday - Thursday 10:00 am - 5:00 pm
Friday, Saturday, Sunday Closed
## Minimum Requirements

- Pass the calculus sequenced courses with a letter grade of “C” or better in each course, and with a minimum overall 2.5 grade point average. Repetition of more than two mathematics sequenced courses, or of any mathematics sequenced course more than once, results in automatic dismissal from the major.
  * The Mathematics/Economics major requires a minimum overall 2.7 grade point average.
- Pass Math 115A and Math 131A with a grade of “C-” or better in each course.
- Students must declare a math major before reaching 160.0 units (minus AP units awarded).
- Pre-major requirements will vary depending on the major.

### 1st Year

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<th>Courses</th>
<th>All Majors:</th>
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<tr>
<td>Math 31A</td>
<td>Start the two-year calculus sequence with Math 31A, Math 31B or Math 32A according to initial placement. Take one course per quarter until done.</td>
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<td>Math 31B</td>
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<td>Math 32A</td>
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(Begin taking other required pre-major courses.)

### 2nd Year

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<tr>
<th>Courses</th>
<th>All Majors:</th>
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<tr>
<td>Math 32B</td>
<td>Finish the two-year calculus sequence.</td>
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<tr>
<td>Math 33A</td>
<td>Take Math 115A if Math 33A is completed.</td>
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<td>Math 33B</td>
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### 3rd Year

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<tr>
<th>Courses</th>
<th>All Majors:</th>
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<tr>
<td>Math 115A</td>
<td>Take Math 115A, if not taken at the end of 2nd Year.</td>
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<tr>
<td>Math 131A</td>
<td>Take Math 131A. (It is strongly recommended to take this course after taking Math 115A. For everything else, let your interests guide you. You can take the course as long as you meet the prerequisites.)</td>
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**Mathematics Major:**
Math 131B, Math 132, Math 120A, Math 110A, Math 110B

**Mathematics/Economics Major:**
Econ 101, Econ 102, Econ 103 (with its lab component), Math 131B, Math 170A, Math 170B, Math 174E

**Financial-Actuarial Major:**
Math 175, Math 170A, Math 170B, Math 172B, Math 173A

**Applied Mathematics Major:**
Math 131B or Math 132, Math 142, at least one of the required two-quarter sequences and/or math electives

**Mathematics of Computation Major:**
Math 131B or Math 132, Math 151A, Math 151B, math and/or CS electives

**Mathematics for Teaching:**
Math 170A or Stats 100A, Math 117 or Math 110A, Math 123 or Math 120A, math electives

### 4th Year

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<th>Courses</th>
<th>All Majors:</th>
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<td>Remaining Upper Division Major Requirements</td>
<td>Complete the major requirements.</td>
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www.ugeducation.ucla.edu/degreepath/majors
www.ucla.mymajors.com
## Academic Planner

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