Quarter-By-Quarter Graduation Plan

For the Pure Concentration

**Directions:** On the following page is a graduation plan template. Use the checklist on pages 3-5 of this handout to fill in the template with your own graduation plan. As you choose classes, pay attention to pre-requisites and make sure that the course you are interested in is actually offered in the quarter in which you plan to take it (this information can be found on the checklist). In the first row, list the courses you have already taken, courses you are currently taking, and courses covered by AP credit (if you need more space, use the second row as well). If you need more years, download another copy of the template. After you have worked out a plan, take it to your **math department advisor** and have them look it over with you and sign it (you should give yourself some time to do this since your advisor’s schedule and yours might not align immediately). Turn in your completed and signed graduation plan **and checklist** in class on 5/14.
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Plan for future quarters

List courses already taken or currently taking and courses covered by AP credit

Name: ________

Math Department Advisor's Name: ________

Math Department Advisor's Signature: ________
Check list for the Pure Concentration

Use these sheets to ensure that you have fulfilled the requirements of the math major under the pure concentration.

Core Courses: Every math major is required to take each of the following courses. Be sure to note the prerequisites (listed with each course) as well as the quarters in which the course is offered. All courses are 4 units unless otherwise listed.

☐ 141 Calculus I (Summer, Fall, Winter, or Spring)
☐ 142 Calculus II (Summer, Fall, Winter, or Spring; after C− or better in 141)
☐ 143 Calculus III (Summer, Fall, Winter, or Spring; after C− or better in 142)
☐ 202 Orientation to Math Major (Fall or Spring; after 143) (1 unit)
☐ 206 Linear Algebra I (Summer, Fall, Winter, or Spring; after 143)
☐ 241 Calculus IV (Summer, Fall, Winter, or Spring; after 143)
☐ 242 Differential Equations (Winter or Spring; after 206 and 241)
☐ 248 Methods of Proof (Summer, Fall, Winter, or Spring; after 143)
☐ 306 Lin Algebra II (Fall, Winter, or Spring; after 206, 241, and 248 with C− or better)
☐ 412 Analysis I (Fall or Winter; after 306)
☐ 459 Senior Seminar (Fall or Spring; after 306 and two other 300+ level courses in the major), or
☐ 460 Applied Senior Sem (Fall; after 306, 344, and CPE 101 or Math 350)
☐ 461 Senior Project I (senior standing) (2 units)
☐ 462 Senior Project II (senior standing) (2 units)
☐ 481 Abstract Algebra I (Fall or Winter; after 306 or 341)
☐ Phys 141 (Summer, Fall, Winter, or Spring; after Math 141 with C− or better and during or after Math 142)
☐ Phys 132 (Summer, Fall, Winter, or Spring; after Phys 141), or
☐ Phys 133 (Summer, Fall, Winter, or Spring; after Phys 141 and Math 142)
**Pure Concentration:** Choose courses below as indicated in each section. You may not use the same course in more than one section. Be sure to note the prerequisites (listed with each course) as well as the quarters in which the course is offered.

**Take each of the following:**

- □ 336 Combinatorics (Fall or Winter; after 248 or Junior standing)
- □ 408 Complex Analysis I (Fall; after 242)
- □ 413 Analysis II (Winter; after 412)
- □ 440 Topology I (Winter; after 412 and after or during 481)
- □ 482 Abstract Algebra II (Winter or Spring; after Math 481)

**Take three of the following:**

- □ 406 Linear Algebra III (Spring; after 306)
- □ 409 Complex Analysis II (Winter; after 408)
- □ 414 Analysis III (Spring; after 413)
- □ 435 Discrete Math I (Fall; after 248 with C− or better and 336)
- □ 441 Topology II (Spring; after 440)

**Take two of the following:**

- □ CPE 101 Comp Sci I (Fall or Spring)
- □ 350 Math Software (Spring; after 206, 241, and a college level programming course)
- □ Stat 301 (Fall or Winter; after Math 141), or Stat 305 (Fall or Winter; after Math 142 and CPE 101), or Stat 425 (Fall; after Math 241 and 248, recommended Stat 301 and 305)

**Take three of the following:**

- □ 304 Vector Calculus (Winter or Spring; after 206 and 241)
- □ 335 Graph Theory (Fall 2019 or Fall 2021; after 248 or Junior standing)
- □ 341 Number Theory (Fall or Spring; after 248 with C− or better)
- □ 344 Linear Analysis II (Fall, Winter, or Spring; after 206 and 242)
- □ 350 Math Software (Spring; after 206, 241, and a college level programming course)
- □ 404 Differential Geometry (Fall 2019 or Fall 2021; after 304)
- □ 406 Linear Algebra III (Spring; after 306)
- □ 409 Complex Analysis II (Winter; after 408)
- □ 414 Analysis III (Spring; after Math 413)
- □ 416 Differential Equations II (Fall 18, 20 or Winter 18, 20; after 206 and 242)
- □ 418 Partial Differential Equations (Fall or Spring; after 344, recommended 304)
- □ 435 Discrete Math I (Fall; after 248 with C− or better and 336)
- □ 436 Discrete Math II (Winter; after 435 and after or during 482)
- □ 437 Game Theory (Spring; after 206 and 248 with C− or better)
- □ 441 Topology II (Spring; after 440)
- □ 451 Numerical Analysis I (Winter; after 206, 242, and a college level programming course)
- □ 452 Numerical Analysis II (Spring 2019 or Spring 2021; after 451)
- □ 453 Numerical Optimization (Spring 2018 or Spring 2020; after 306 and 451)
- □ 470 Selected Advanced Topics (TBD) (1-4 units)
General Education Requirements:
See http://www.ge.calpoly.edu/studentsandadvisors/allgecourses.html for a complete list of available courses along with the various requirements.

**Area A: Communication**
- □ A1 Engl 133/134
- □ A2 Coms 101/102
- □ A3 Reason, Arg & Writing

**Area B: Science and Math**
- □ B2 Life Science

**Area C: Arts and Humanities**
- □ C1 Literature
- □ C2 Philosophy: Phil 230/231
- □ C3 Fine/Perf Arts

**Area D/E: Society and the Individual**
- □ D1 American Exp
- □ D2 Political Economy
- □ D3 Comparative Social Inst
- □ D4 Self Development
- □ D5 Upper-division elective

**Area F: Technology**
- □ Upper division

**Pure Concentration Free electives:** You must have at least 180 units total to graduate with a Math Major from Cal Poly. For the Pure Concentration, this requires 11 more units. These can consist of any Cal Poly courses, AP credits, or transfer credits which are not used above.

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