Quarter-By-Quarter Graduation Plan

For the Applied Concentration

**Directions:** On the following page is a graduation plan template. Use the checklist on pages 3-7 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 5/22.
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Plan for future quarters

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

Name: Applied Concentration

Advisor's Signature:

Date:
Check list for the General Curriculum

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

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 (if no quarters are specified, then the class runs every quarter). All courses are 4 credits unless otherwise listed.

☐ 141 Calc I
☐ 142 Calc II (after C− or better in 141)
☐ 143 Calc III (after C− or better in 142)
☐ 202 Orientation to Math Major (1 credit) (Fall or Spring; after 143)
☐ 206 Linear Alg I (after 143)
☐ 241 Calc IV (after 143)
☐ 242 Diff Eq (Winter or Spring; after 206 and 241)
☐ 248 Methods of Proof (after 143)
☐ 306 Lin Alg II (after 206, 241, and 248 with C− or better)
☐ 412 Analysis I (Fall or Winter; after 306)
☐ 459 Senior Sem (Fall or Spring; after 306 and two other 300+ level courses), or 460 Applied Senior Sem (TBA, probably Fall or Spring; after 306, 344, and 451)
☐ 461 Sen Proj I (2 credits)
☐ 462 Sen Proj II (2 credits)
☐ 481 Abstract Alg I (Fall or Winter; after 306 or 341)
☐ Phys 141 (after Math 141 with C− or better and during or after Math 142)
☐ Phys 132 or 133 (after Phys 141)
Applied Concentration Required Courses: 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.

- **CSC/CPE 101** *(Fall or Spring)*
- **304 Vector Calc** *(Winter or Spring; after 206 and 241)*
- **344 Linear Analysis II** *(Fall or Winter or Spring; after 206 and 242)*
- **350 Math Software** *(Spring; after 206, 241 and CSC/CPE 101), or CSC/CPE 102 Comp. Sci II** *(Fall, Winter, or Spring; after CSC/CPE 101 with C− or better and Math 141 with C− or better)*
- **413 Analysis II** *(Winter; after 412)*
- **451 Numerical Analysis I** *(Winter; after 206, 242, and CSC/CPE 101)*
- **Stat 301** *(Fall or Winter; after or during Math 142), or Stat 325** *(Spring; after Math 206 and CSC/CPE 101), or Stat 425** *(Fall; after Math 241 and 248)*

Applied Concentration Tracks: Choose two tracks. Be sure to note the prerequisites (listed with each course) as well as the quarters in which the course is offered.

- **408 Complex Analysis I** *(Fall; after 242), and 409 Complex Analysis II** *(Winter; after 408)*
- **416 Diff Eq II** *(Winter 2014 or Fall 2014; after 206 and 242), and 418 Partial Diff Eq** *(Fall or Spring; after 344, recommended Math 304)*
- **452 Numerical Analysis II** *(Spring 2013 or Spring 2015; after 451), and 453 Numerical Optimization** *(Spring 2014 or Spring 2016; after 306 and 451)*
Applied Concentration Advisor Approved Electives: Choose three from one of the following categories, with at least once course and the 300-level or above. You may not choose courses from multiple categories. You may not choose classes used above. Be sure to note the prerequisites (listed with each course) as well as the quarters in which the course is offered.

Astronomy and Physics:

- Astr 301 The Solar System (Winter 2014 or Winter 2016; after Phys 132 and Math 141)
- Astr 302 Stars and Galaxies (Spring; after Phys 132 and Math 141)
- Astr 326 Relativity and Cosmology (Fall; after or during Physics 211)
- 132 Physics II (Fall, Winter, Spring or Summer; after Phys 141)
- 133 Physics III (Fall, Winter, Spring or Summer; after Phys 141 and Math 142, recommended Math 241)
- 211 Modern Physics (Fall, Winter, or Spring; after Phys 132, 133, and Math 241)
- 301 Thermal Physics (Winter; after Phys 211)
- 302 Classical Mechanics (Fall; after Phys 141 and Math 241, 242)
- 303 Classical Mechanics II (Winter 2013 or Winter 2015; after Phys 302)
- 317 Special Theory Relativity (Winter 2014 or Winter 2016; after Phys 211)
- 322 Vibrations/Waves (Fall; after Phys 132 and Math 242, recommended Math 344)
- 323 Optics (Winter; after Phys 133, 322, and Math 241)
- 405 Quantum Mech I (Spring; after Phys 212, 302, 322 and Math 241, 242, recommended Math 344)
- 408 Electromag Fields/Waves (Fall; after Phys 133 and Math 304)
- 412 Solid State Phys (Fall; after Phys 211 and Math 244 (instructor should accept Math 206 and 242))
- 417 Nonlinear Dynamical Systems (Spring 2014 or Spring 2016; after Phys 132, 133, and Math 241, 242)

Computer Science options:

- 102 Comp Sci II (Fall, Winter, or Spring; after CSC/CPE 101 with C– or better and Math 141 with C– or better)
- 103 Comp Sci II (Fall, Winter, or Spring; after CSC/CPE 102 with C– or better and CSC 141 with a grade of C– or better (can try to get instructor to accept Math 248 for CSC 141))
- 225 Intro to Comp Organization (Fall or Winter; after CSC/CPE 102)
- 349 Algorithms (Fall or Spring; after CSC/CPE 103 with C– or better, Math 142, and Stat 312, 321, or 350 (can try to get instructor to accept Stat 301 or waive this requirement))
- 357 Systems Programming (Fall, Winter, or Spring; after CSC/CPE 103 with C– or better, and CSC 225)
- 448 Bioinformatics Algorithms (Not currently running; after CSC/CPE 103 with C– or better)

(more on next page)
Statistics options:

- □ 302 Stat II (Winter; after Stat 301)
- □ 323 Design and Analysis of Exp I (Winter; after Stat 302 or 313)
- □ 324 Applied Regression Analysis (Fall or Spring; after Stat 302 or 313)
- □ 325 Intro to Probability (Spring; after Math 206 and CSC/CPE 101)
- □ 330 Stat Computing with SAS (Fall or Winter; after Stat 302 or 313)
- □ 331 Stat Computing with R (Fall; after Stat 302 or 313, and CSC/CPE 101 or Stat 330)
- □ 416 Stat Analysis of Time Series (Winter; after Stat 324)
- □ 417 Survival Analysis Methods (Fall; after Stat 302)
- □ 418 Analysis of Cross-Classified Data (Winter; after Stat 324)
- □ 419 Applied Multivariate Stat (Spring; after two courses in Stat, recommended Math 206)
- □ 421 Survey Sampling and Methodology (Fall; after Stat 302 or 313)
- □ 423 Design and Analysis of Experiments II (Spring; after Stat 323)
- □ 425 Probability Theory (Fall; after Math 241 and 248, recommended Stat 301, 325)
- □ 426 Est. and Samp. Theory (Winter; after Stat 425, recommended 302)
- □ 427 Mathematical Stats (Spring; after Stat 426)

Mechanical Engineering options:

- □ 211 Engineering Statics (Fall, or Winter or Spring; after Phys 141 and during or after Math 241)
- □ 212 Engineering Dynamics (Fall, or Winter or Spring; after ME 211 and Math 241)
- □ 302 Thermodynamics I (Fall, or Winter or Spring; after Phys 132 and ME 212)
- □ 326 Intermediate Dynamics (Fall, or Winter or Spring; after ME 212, CSC/CPE 231 or CSC/CPE 234 (instructor may accept CSC/CPE 101), and after or during Math 244)
- □ 341 Fluid Mechanics I (Fall, or Winter or Spring; after ME 212)

Economics options:

- □ 311 Intermediate Microeconomics I (Fall, Winter, or Spring; after Math 142, Stat 302, and either Econ 221 and Econ 222, or Econ 201)
- □ 313 Intermediate Macroeconomics (Winter or Spring; after Econ 312)
- □ 408 Mathematical Economics (Fall; after Econ 313)
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 ________

**General Free electives:** You must have at least 180 credits total to graduate with a Math Major from Cal Poly. For the General Curriculum, this requires 7 more credits. These can consist of any Cal Poly courses, AP credits, or transfer credits which are not used above.

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