



# Bachelor of Science

## APPLIED PHYSICS: Technology Emphasis

### Advisement Form 2008-2009

Name \_\_\_\_\_ ID \_\_\_\_\_

| Physics Curriculum  | Un. | Instit. | Course | Units | Grade | Term | Prerequisites, GE & Comments   |
|---|-----|---------|--------|-------|-------|------|--|
| <b>Lower Division Requirements (31 – 32 Units)</b>          |     |         |        |       |       |      |  |
| PHYS 106 Applied Physics and Modern Society                 | 3   |         |        |       |       |      | GE: B1   |
| PHYS 200 General Physics I                                  | 4   |         |        |       |       |      | Prereq: MATH 150; GE: B1   |
| PHYS 201 General Physics II                                 | 4   |         |        |       |       |      | Prereq: PHYS 200; GE: B1   |
| MATH 150 Calculus I   | 4   |         |        |       |       |      | Prereq: Passing scores on the Calculus Placement Exam or MATH 105; GE: B3      |
| MATH 151 Calculus II  | 4   |         |        |       |       |      | Prereq: MATH 150   |
| MATH 230 Logic and Mathematical Reasoning                   | 3   |         |        |       |       |      | GE: A3, B3   |
| MATH 240 Linear Algebra                                     | 3   |         |        |       |       |      | Prereq: MATH 151   |
| MATH 250 Calculus III                                       | 3   |         |        |       |       |      | Prereq: MATH 151 with a C or better  |
| <i>Select one of the following:</i>                         |     |         |        |       |       |      |  |
| COMP 105 Computer Programming Introduction                  | 3   |         |        |       |       |      | GE: B4   |
| COMP 150 Object-Oriented Programming                        | 4   |         |        |       |       |      | Prereq: Programming experience; GE: B4   |
| <b>Upper Division Requirements (37 Units)</b>               |     |         |        |       |       |      |  |
| PHYS 304 Electromagnetism                                   | 4   |         |        |       |       |      | Prereq: PHYS 101 or 201, MATH 151  |
| PHYS 306 Modern Physics                                     | 3   |         |        |       |       |      | Prereq: PHYS 101 or 201, MATH 151  |
| PHYS 310 Electronics  | 4   |         |        |       |       |      | Prereq: PHYS 101 or 201  |
| PHYS/PAMU 335 Physics of Music                              | 3   |         |        |       |       |      | GE: B1, C1, INTD   |
| PHYS/ENGL 338 Science and Conscience                        | 3   |         |        |       |       |      | GE: B1, C2, INTD   |
| PHYS/COMP/MATH 345 Digital Imaging Processing               | 3   |         |        |       |       |      | Prereq: Consent of the instructor; GE: B1, B4, INTD                            |
| PHYS 406 Solid State Physics                                | 3   |         |        |       |       |      | Prereq: PHYS 306   |
| PHYS/BIOL/HLTH 434 Introduction to Biomedical Imaging       | 4   |         |        |       |       |      | Prereq: BIOL 210 or PHYS 200; GE: B1, E, INTD                                  |
| PHYS 448 Team-Based Research                                | 3   |         |        |       |       |      | Prereq: Upper division standing; GE: B1, INTD                                  |
| PHYS 499 Senior Colloquium                                  | 1   |         |        |       |       |      | Prereq: Senior standing  |
| MATH 350 Differential Equations and Dynamical Systems       | 3   |         |        |       |       |      | Prereq: MATH 250 (may be taken concurrently)                                   |
| <b>Select 3 units (any combination) from the following:</b> |     |         |        |       |       |      |  |
| PHYS 492 Internship   | 3   |         |        |       |       |      | Prereq: Upper division standing and consent of the instructor; Graded or CR/NC |
| PHYS 494 Independent Research                               | 1-3 |         |        |       |       |      | Prereq: Senior standing and consent of the instructor                          |
| PHYS 497 Directed Studies                                   | 1-3 |         |        |       |       |      | Prereq: Senior standing and program approval                                   |

|  | Un. | Instit. | Course | Units | Grade | Term | Prerequisites, GE & Comments   |
|--|-----|---------|--------|-------|-------|------|--|
| <b>Upper Division Electives in the Major (9-10 Units)</b> <i>Select <u>three</u> courses from the following:</i> |     |         |        |       |       |      |  |
| MATH 352 Probability and Statistics  | 3   |         |        |       |       |      | Prereq: MATH 151   |
| MATH 448 Scientific Computing  | 3   |         |        |       |       |      | Prereq: MATH 151 and 350 or COMP 151; GE: B3, B4, INTD                         |
| MATH 450 Partial Differential Equations and Mathematical Physics   | 3   |         |        |       |       |      | Prereq: MATH 350 or consent of instructor                                      |
| MATH 451 Complex Analysis  | 3   |         |        |       |       |      | Prereq: MATH 250 and 240   |
| PHYS 301 Classical Mechanics   | 3   |         |        |       |       |      | Prereq: PHYS 201, MATH 350   |
| PHYS 305 Thermal and Statistical Physics   | 3   |         |        |       |       |      | Prereq: PHYS 201, MATH 350   |
| PHYS 401 Quantum Mechanics   | 3   |         |        |       |       |      | Prereq: PHYS 306, MATH 350   |
| PHYS/COMP/MATH 445 Image Analysis and Pattern Recognition  | 3   |         |        |       |       |      | Prereq: PHYS/COMP/MATH 345 or consent of the instructor; GE: B1, B4, INTD      |
| PHYS/BIOL 464 Medical Instrumentation  | 4   |         |        |       |       |      | Prereq: PHYS/BIOL/HLTH 434   |
| PHYS 490 Topics in Physics   | 3   |         |        |       |       |      | Prereq: Upper division standing and consent of the instructor                  |
| PHYS 492 Internship<br><i>(If not taken as a required course)</i>  | 3   |         |        |       |       |      | Prereq: Upper division standing and consent of the instructor; Graded or CR/NC |
| PHYS 494* Independent Research<br><i>(If not taken as a required course)</i>                                     | 1-3 |         |        |       |       |      | Prereq: Senior standing and consent of the instructor                          |
| PHYS 497* Directed Studies<br><i>(If not taken as a required course)</i>   | 1-3 |         |        |       |       |      | Prereq: Senior standing and program approval                                   |

\*Cannot exceed a total of three units, when added to units taken within the upper division requirements

### Additional University Graduation Requirements

|   |  |                                      |
|---|--|--------------------------------------|
| <b>9 Units Upper Division Interdisciplinary GE at CSUCI (courses numbered 330-349 or 430-449)</b>   |  |                                      |
| Course 1 <u>PHYS 335</u><br>(major course)  | Course 2 <u>PHYS 338</u><br>(major course) | Course 3    _____<br>(outside major) |
| <b>American Institutions Requirements:</b> US History _____ State and Local Gov't _____<br>(Choose from HIST 270, 271, 272, 275 or 350) (Choose POLS 150) |  |                                      |
| <i>Students must receive a grade of C or better in the language and Multicultural Requirements</i>  |  |                                      |
| <b>Language Requirement:</b> GE C3a _____<br>(one semester of college level language)   |  |                                      |
| <b>Multicultural Requirement:</b> GE C3b _____  |  |                                      |
| <i>Minimum total units to graduate: 120 of which 40 must be upper division. Please see catalog for a complete list of graduation requirements.</i>        |  |                                      |
| Advisor _____   |  | Date Completed: _____                |
| Advisor Comments: _____<br>_____  |  |                                      |