

# PHYSICS, ASSOCIATE IN SCIENCE FOR UC TRANSFER

This Associate in Science degree in Physics for UC Transfer degree is intended to facilitate transfer and increase academic preparation for students as they prepare to transfer into a Physics program at a UC campus. Along with the Transfer Agreement Guarantee (TAG), students completing this degree are guaranteed admission to the UC system, but not necessarily to a particular UC campus or major of their choice. Students should consult with a counselor for more information on university admission and transfer requirements, as this degree in Physics may not be the best option for students intending to transfer to a particular UC campus or to a college or university that is not part of the UC system.

To earn an Associate in Science in Physics for UC Transfer degree, students must:

1. Complete 40 semester units in Physics major preparation, as prescribed on the UCTP Template.
2. Complete IGETC\* courses in the following areas, as prescribed on the UCTP Template.
  - a. Area 1A Freshman Composition (3 units)
  - b. Area 1B Critical Thinking (3 units)
  - c. Area 3 Arts and Humanities (3 units)
  - d. Area 4 Social and Behavioral Science (3 units)
  - e. Area 5B Biological Science (4 units)
  - f. Area 6 Language other than English (0-4 units)
3. Meet the specified requirements as stated in the Transfer Agreement Guarantee (TAG) for the available school.
4. Obtain a cumulative minimum grade point average (GPA) of 3.5 in the major. Students that earn less than 3.5 GPA (UC transferable) still meet the associate degree graduation requirement but will not receive the guaranteed admission into a UC.
5. Obtain a grade of "C" or better or "P" in all courses required in the major. Even though a "pass-no-pass" is allowed (Title 5 § 55063), it is highly recommended that students complete their major courses with a letter grade due to unit limitations on "P/NP" courses by the UC system.
6. Complete residency requirements. For students in the Ventura County Community College District, a minimum of 12 semester units must be completed in residence within the district.

\*NOTE: This degree allows for the deferment of IGETC courses, including two courses in Area 3 (Arts and Humanities) and two courses in area 4 (Social Science). These deferred IGETC requirements are to be completed at the UC, after transfer.

| Course ID                     | Title                                  | Units/<br>Hours |
|-------------------------------|--|-----------------|
| <b>Required Core Courses:</b> |  | <b>46</b>       |
| CHEM R120                     | General Chemistry I                    | 5               |
| CHEM R122                     | General Chemistry II                   | 5               |
| PHYS R131                     | Physics for Scientists and Engineers 1 | 5               |
| PHYS R132                     | Physics for Scientists and Engineers 2 | 5               |
| PHYS R133                     | Physics for Scientists and Engineers 3 | 5               |
| MATH R120                     | Calculus with Analytic Geometry I      | 5               |

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| MATH R121  | Calculus with Analytic Geometry II                             | 5         |
| MATH R122  | Calculus with Analytic Geometry III                            | 5         |
| MATH R134  | Linear Algebra   | 3         |
| MATH R143  | Differential Equations   | 3         |
| <b>IGETC General Education Requirements</b>            |  | <b>21</b> |
| <b>Area 1A Freshman Composition: Select one course</b> |  |           |
| ENGL R101  | College Composition  | 4         |
| or ENGL R101H  | Honors: College Composition                                    |           |
| <b>Area 1B Critical Thinking: Select one course</b>    |  |           |
| ENGL R102  | Critical Thinking through Composition and Literature           | 4         |
| or ENGL R102H  | Honors: Critical Thinking through Composition and Literature   |           |
| ENGL R128  | Composition and Critical Thinking through Non-Fiction          | 3         |
| PHIL R111  | Critical Thinking and Analytic Writing                         | 3         |
| <b>Area 3 Arts and Humanities: Select one course</b>   |  |           |
| ANTH R110  | People of the World: The Cultures of Globalization and Change  | 3         |
| ANTH R111  | Magic, Witchcraft and Religion: Anthropology of Belief         | 3         |
| or ANTH R111H  | Honors: Magic, Witchcraft and Religion: Anthropology of Belief |           |
| ANTH R113  | Ancient Civilizations of the Americas                          | 3         |
| ANTH R116/<br>IDS R102                                 | Science, Technology, and Human Values                          | 3         |
| ART R101   | Introduction to Art and Visual Culture                         | 3         |
| ART R102   | Western Art I: Prehistory through the Middle Ages              | 3         |
| ART R103   | Western Art II: Renaissance to Contemporary                    | 3         |
| ART R171   | Modern Art   | 3         |
| ART R172   | Art of the Ancient Americas                                    | 3         |
| ART R174   | Latin American Art   | 3         |
| ASL R103   | American Sign Language 3                                       | 4         |
| ASL R104   | American Sign Language 4                                       | 4         |
| ENGL R104  | English Literature I   | 3         |
| ENGL R105  | English Literature II  | 3         |
| ENGL R107  | American Literature I  | 3         |
| ENGL R108  | American Literature II   | 3         |
| ENGL R111  | Shakespeare  | 3         |
| ENGL R112  | Literature by Women  | 3         |
| ENGL R124  | Introduction to LGBTIQ Literature                              | 3         |
| ENGL R125  | Children's Literature  | 3         |
| ENGL R126  | Introduction to Chicana/o Literature                           | 3         |
| ESL R100   | College Writing Preparation for Non-Native Speakers            | 4         |
| FTVE R107  | History of Film  | 3         |
| HIST R108  | African-American History                                       | 3         |
| HIST R109  | History of Mexico  | 3         |
| HIST R110  | History of the Middle East                                     | 3         |
| HIST R150  | World History I  | 3         |
| or HIST R150H  | Honors: World History I  |           |
| HIST R160  | World History II   | 3         |

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| or HIST R160H  | Honors: World History II                                       |   | CHST/SOC R108 | Sociology of the Chicano Community                           | 3 |
| MUS R101   | Fundamentals of Music  | 3 | COMM R102     | Introduction to Communication Studies                        | 3 |
| MUS R103   | Music Appreciation   | 3 | COMM R111     | Interpersonal Communication                                  | 3 |
| MUS R116   | History of Rock Music  | 3 | COMM R113     | Intercultural Communication                                  | 3 |
| MUS R109   | Music of Latin America   | 3 | ECE R102      | Child Growth and Development                                 | 3 |
| PHIL R101  | Introduction to Philosophy                                     | 3 | ECON R100     | Introduction to Economics and Contemporary Economics Issues  | 3 |
| or PHIL R101H  | Honors: Introduction to Philosophy                             |   | ECON R201     | Introduction to the Principles of Microeconomics             | 3 |
| PHIL R102  | Introduction to Ethics   | 3 | or ECON R201H | Honors: Introduction to the Principles of Microeconomics     |   |
| or PHIL R102H  | Honors: Introduction to Ethics                                 |   | ECON R202     | Introduction to the Principles of Macroeconomics             | 3 |
| PHIL R103  | Survey of World Religions: East                                | 3 | or ECON R202H | Honors: Introduction to the Principles of Macroeconomics     |   |
| PHIL R104  | Survey of World Religions: West                                | 3 | GEOG R102     | World Regional Geography                                     | 3 |
| PHIL R105  | History of Ancient and Medieval Philosophy                     | 3 | GEOG R104     | Geography of California                                      | 3 |
| PHIL R106  | History of Modern Philosophy                                   | 3 | GEOG R105     | Introduction to Human Geography                              | 3 |
| PHIL R108  | World Mythology  | 3 | GLST R101     | Introduction to Global Studies                               | 3 |
| PHIL R110  | Philosophy of Religion   | 3 | GLST R102     | Global Issues and Problems                                   | 3 |
| PHIL R114  | Social Philosophy  | 3 | HED R113      | Introduction to Public Health                                | 3 |
| or SOC R114  | Social Philosophy  |   | HIST R104     | History of California  | 3 |
| PHIL R115  | Comparative World Religions                                    | 3 | HIST R108     | African-American History                                     | 3 |
| or PHIL R115H  | Honors: Comparative World Religions                            |   | HIST R109     | History of Mexico  | 3 |
| PHIL R116  | Contemporary Moral Issues                                      | 3 | HIST R110     | History of the Middle East                                   | 3 |
| SPAN R210  | Intermediate Spanish II  | 4 | HIST R117     | History of American Women                                    | 3 |
| SPAN R220  | Spanish for Heritage Speakers I                                | 4 | HIST R124     | Sports in American History                                   | 3 |
| or SPAN R220H  | Honors: Spanish for Heritage Speakers I                        |   | HIST R125     | U.S. Foreign Policy and Covert Action                        | 3 |
| SPAN R230  | Spanish for Heritage Speakers II                               | 4 | or HIST R125H | Honors: U.S. Foreign Policy and Covert Action                |   |
| or SPAN R230H  | Honors: Spanish for Heritage Speakers II                       |   | HIST R130     | History of the United States I                               | 3 |
| SPAN R232  | Latin American Literature                                      | 3 | or HIST R130H | Honors: History of the United States I                       |   |
| or SPAN R232H  | Honors: Latin American Literature                              |   | HIST R140     | History of the United States II                              | 3 |
| SPAN R234  | Latin American and Spanish Film                                | 3 | or HIST R140H | Honors: History of the United States II                      |   |
| SPAN R236  | Cultures of Latin America                                      | 3 | HIST R150     | World History I  | 3 |
| or SPAN R236H  | Honors: Cultures of Latin America                              |   | or HIST R150H | Honors: World History I                                      |   |
| THTR R111  | Introduction to Theatre  | 3 | HIST R160     | World History II   | 3 |
| <b>Area 4 Social and Behavioral Science: Select one course</b> |  |   |               |  |   |
| ADS/PSY R131   | Abnormal Psychology  | 3 | or HIST R160H | Honors: World History II                                     |   |
| ANTH R102  | Introduction to Cultural Anthropology                          | 3 | POLS R101     | Government of the United States I: Institutions and Politics | 3 |
| or ANTH R102H  | Honors: Introduction to Cultural Anthropology                  |   | POLS R102     | Introduction to Law and Society                              | 3 |
| ANTH R103  | Introduction to Archaeology                                    | 3 | POLS R104     | Introduction to International Relations                      | 3 |
| ANTH R105  | Sex, Gender and Culture  | 3 | POLS R108     | Comparative Politics   | 3 |
| ANTH/ETHS R107   | The Anthropology of Native Americans                           | 3 | POLS R120     | Political Theory   | 3 |
| ANTH R110  | People of the World: The Cultures of Globalization and Change  | 3 | POLS R125     | U.S. Foreign Policy and Covert Action                        | 3 |
| ANTH R111  | Magic, Witchcraft and Religion: Anthropology of Belief         | 3 | or POLS R125H | Honors: U.S. Foreign Policy and Covert Action                |   |
| or ANTH R111H  | Honors: Magic, Witchcraft and Religion: Anthropology of Belief |   | PSY R101      | General Psychology   | 3 |
| ANTH R113  | Ancient Civilizations of the Americas                          | 3 | or PSY R101H  | Honors: General Psychology                                   |   |
| ANTH/ETHS R114   | African American Culture and Experience                        | 3 | PSY R104      | Research Methods in Psychology                               | 3 |
| ANTH R115  | Introduction to Language and Culture                           | 3 | PSY R108      | Developmental Psychology                                     | 3 |
| ANTH/ETHS R119/<br>BRS R101                                    | Introduction to Border Studies                                 | 3 | PSY R110      | Human Sexuality  | 3 |
| ASL R110   | Introduction to Deaf Studies                                   | 3 | SJS/ETHS R110 | Introduction to Social Justice Studies                       | 3 |
| CHST R101  | Introduction to Chicana/o Studies                              | 3 | SJS R120      | Introduction to Women's Studies                              | 3 |
| CHST R102  | Chicana/o Cultural Identity                                    | 3 | SJS R130      | Introduction to LGBTQ Studies                                | 3 |
| CHST/HIST R107   | History of Mexicans in the United States                       | 3 |               |  |   |

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| SOC R101   | Introduction to Sociology                       | 3            |
| or SOC R101H   | Honors: Introduction to Sociology               |              |
| SOC R102   | Social Problems                                 | 3            |
| SOC R103   | Race and Ethnic Relations                       | 3            |
| SOC R106   | Contemporary Family in American Society         | 3            |
| SOC R111   | Introduction to Social Research                 | 3            |
| SOC R116   | Crime and Society                               | 3            |
| SOC R119   | Introduction to Social Work and Human Services  | 3            |
| URBS R101  | Introduction to Urban Studies                   | 3            |
| <b>Area 5B Biological Science: Select one course</b> |   |              |
| ANAT R101  | General Human Anatomy                           | 4            |
| ANTH R101  | Introduction to Biological Anthropology         | 3            |
| or ANTH R101H  | Honors: Introduction to Biological Anthropology |              |
| BIOL R100  | Marine Biology                                  | 3            |
| BIOL R101  | General Biology                                 | 3            |
| or BIOL R101H  | Honors: General Biology                         |              |
| BIOL R120  | Principles of Biology I                         | 4            |
| BIOL R122  | Principles of Biology II                        | 4            |
| BIOL R155  | Principles of Botany                            | 3            |
| ESRM R100  | Introduction to Environmental Science           | 3            |
| MICR R100  | Principles of Microbiology                      | 3            |
| MST R100   | Marine Biology                                  | 3            |
| PHSO R101  | Human Physiology                                | 5            |
| PSY R105   | Introduction to Physiological Psychology        | 3            |
| <b>Area 6 Language Other than English</b>            |   | <b>0 - 4</b> |
| ASL R101   | American Sign Language 1                        | 4            |
| ASL R102   | American Sign Language 2                        | 4            |
| ASL R103   | American Sign Language 3                        | 4            |
| ASL R104   | American Sign Language 4                        | 4            |
| FILI R101  | Elementary Filipino 1                           | 4            |
| FILI R102  | Elementary Filipino 2                           | 4            |
| SPAN R200  | Intermediate Spanish I                          | 4            |
| SPAN R210  | Intermediate Spanish II                         | 4            |
| SPAN R220  | Spanish for Heritage Speakers I                 | 4            |
| or SPAN R220H  | Honors: Spanish for Heritage Speakers I         |              |
| SPAN R230  | Spanish for Heritage Speakers II                | 4            |
| or SPAN R230H  | Honors: Spanish for Heritage Speakers II        |              |
| <b>Total Units for the Major</b>                     |   | <b>46</b>    |
| IGETC  |   | 21           |
| IGETC Electives                                      |   | 0            |
| <b>Total Units for Degree</b>                        |   | <b>67</b>    |

- Utilize communication skills (e.g. written, oral, web-based) to effectively report observational results and conclusions based on these results.

Upon successful completion of this program, students will be able to:

- Apply the fundamental principles of physics to solve quantitative problems.
- Appropriately utilize physics equipment and the skills needed to gather and analyze data.
- Extract information from graphs and utilize said information to draw conclusions.
- Interpret and develop diagrams depicting physical systems and use them to draw conclusions, formulate mathematical representations, and solve for unknown quantities.