

Geography

LOWER-DIVISION TRANSFER PATTERN California State University (CSU) Statewide Pattern

The Lower-Division Transfer Pattern (LDTP) consists of the CSU statewide pattern of coursework outlined below, plus campus-specific coursework, bringing the total pattern to at least 60 but no more than 70 transferable semester units for students to complete at a California Community College (CCC).

The CSU statewide pattern of coursework for CCC students who plan to major in Geography at any CSU campus offering the major includes:

- Completion of lower-division general education requirements, following either the CSU General Education Breadth (GE-Breadth) or the Intersegmental General Education Transfer Curriculum (IGETC) pattern;
- Completion of the CSU graduation requirements in United States History, Constitution and American Ideals;
- Completion of additional coursework and semester units as specified below in (3) and (4).

Please note that the information here is an academic and curricular advising tool: a roadmap that enables transfer students to efficiently and effectively progress towards the CSU baccalaureate degree in a specified discipline. California Community College students should work closely with their advisers when planning their academic program in preparation for transfer to the CSU.

This information does not represent any guarantee with regard to admission nor does it include or replace CSU campus admissions impaction criteria (see <http://www.calstate.edu/AR/impactioninfo.shtml>). These curricular guidelines are subject to change.

CSU Statewide Pattern	Semester Unit Requirement
<p>(1) Complete lower-division general education requirements.</p> <p>Obtain a certification of completion of CSU GE Breadth or IGETC by the California Community College before transferring to a CSU campus. While completing general education, follow the course pattern stated below.</p> <p><i>A minimum grade of C is required in courses used to meet CSU GE Breadth AREAS A and B4.</i> <i>A minimum grade of C is required in each course used for IGETC.</i></p>	<p>39 units for CSU GE Breadth <i>or</i> 37 units for IGETC</p>
<p>(2) Complete the graduation requirements in United States History, Constitution, and American Ideals.</p> <p>These are typically completed with one course each in American government and American history, or a sequence of courses that integrate the history and government topics.</p>	<p>0-6 units</p>
<p>(3) Complete at least one of the following:</p> <ul style="list-style-type: none"> • Introduction to Physical Geography [CAN GEOG 2]. <i>Or</i> • Introduction to Physical Geography, with lab [CAN GEOG 6]. 	<p>0-3 units</p>
<p>(4) Complete Introduction to Human Geography.</p> <p><i>This course may <u>not</u> be used to meet CSU GE Breadth or IGETC.</i></p>	<p>3 units</p>
<p>Total Semester Units Required for Statewide LDTP Pattern</p>	<p>40-51 Units</p>

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Bakersfield Campus-Specific Pattern

This campus does not have a major, concentration, or option in Geography.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Channel Islands Campus-Specific Pattern

This campus does not have a major, concentration, or option in Geography.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Chico Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Chico campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete the following: <ul style="list-style-type: none"> • A course that articulates with [CSUC GEOG 101], Physical Geography with Lab. <u>And</u> • A course that articulates with [CSUC GEOG 219], Introduction to Geographic Methods – A basic introduction to essential geographic techniques, including data collection, analysis, and presentation. Techniques include aerial photo and map interpretation, computer cartography, spreadsheet operations, landscape description and analysis, descriptive statistics, and field observation. 	0-3 units 0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Dominguez Hills Campus-Specific Pattern

The Earth Sciences Department at CSUDH offers B.S. and B.A. degree options in Earth & Environment. The Earth & Environment program is a streamlined cross-disciplinary program that trains students to work in the broad fields of earth and environmental science.

In addition to the statewide pattern, the following is the CSU Dominguez Hills campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete the following: <ul style="list-style-type: none"> • A course that articulates with [CSUDH EAR 101], Physical Geography Laboratory. 	0-1 units
(1) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography LOWER-DIVISION TRANSFER PATTERN CSU East Bay Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU East Bay campus-specific pattern for the B.A. or B.S. in Geography:

Campus-Specific Pattern	Semester Unit Requirement
(2) If not taken as part of the statewide pattern complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [CSUEB GEOG 2410], Introduction to Maps. <i>And</i> • A course that articulates with [CSUEB GEOG 2310], Economic and Resource Geography. 	0-3 units 0-3 units
(3) If not taken as part of the statewide pattern complete at least <u>one</u> of the following proficiency requirements: <ul style="list-style-type: none"> • One year of foreign language. <i>Or</i> • A course that articulates with [CSUEB STAT 1000], Elements of Probability and Statistics. <i>A second upper division statistics course will be required at CSU East Bay.</i> <p><i>The proficiency requirement may be completed by taking courses or by passing an examination. Proficiency in reading a modern language at the first-year level; or proficiency in statistics at the level of a 3000 series course. Examinations will be given once each quarter during the first week of instruction. Appropriate coursework will be recommended to students who do not pass an examination.</i></p>	0-6 units
(4) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography LOWER-DIVISION TRANSFER PATTERN CSU Fresno Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Fresno campus-specific pattern for the B.A. in Geography:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [CSUF GEOG 4], World Geography - Survey of world-wide social, cultural, economic and political forces; earth's physical features; economic development; cultural and natural resources; man-land relationships. Applicable concepts and methodologies. Approach if by continents and/or cultural realms. <i>And</i> • A course that articulates with [CSUF GEOG 5], Physical Geography: Global Concepts, Weather and Climate - The earth as a planet, map projections, location on the earth's surface, time, oceans, weather, and climate. <i>And</i> • A course that articulates with [CSUF GEOG 7], Physical Geography: The Earth's Surface - A survey of those elements of the physical environment at the earth-atmosphere contact. Fundamentals of landform features, soils, natural vegetation, and water bodies. <i>And</i> • A course that articulates with [CSUF GEOG 30], Introduction to Spatial Statistics - Intro of elementary statistical principles and techniques: probability theory, sampling, descriptive statistics, spatial statistics, hypothesis testing, correlation analysis, bivariate regression, and forecasting. <i>And</i> • A course that articulates with [CSUF IS 52 & 52L], Computer Concepts & Computer Concepts Lab - Intro of computer hardware and software systems, impact of computers on society, ethical issues, and application of computer technology in many career fields. Includes hands on study of office productivity 	0-3 units 0-3 units 0-3 units 0-3 units 0-3 units

software to include elements of work processing, electronic spreadsheets, database, and presentation software.	
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Fullerton Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Fullerton campus-specific pattern:

Campus-Specific Pattern
(1) If necessary, complete additional coursework to bring total to 60 transferable semester units.

Geography
LOWER-DIVISION TRANSFER PATTERN
Humboldt State University Campus-Specific Pattern

In addition to the statewide pattern, the following is the Humboldt State University campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [HSU GEOG 105], Cultural Geography. <i>And</i> • A course that articulates with [HSU GEOG 216], Introduction to Mapping Sciences. 	0-3 units 0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Long Beach Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Long Beach campus-specific pattern for the B.A. in Geography:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern, complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [CSULB GEOG 280], Introduction to Geospatial Techniques. <i>And</i> • A course that articulates with [CSULB GEOG 200], Introduction to Research Methods for Geographers. 	0-3 units 0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	
<i>Recommended Courses:</i> <ul style="list-style-type: none"> • A course that articulates with [CSULB GEOG 100], <i>World Regional Geography</i>. • An additional <i>Math</i> course. • An additional course in <i>Geography, Geology, or Anthropology</i>. 	

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Los Angeles Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Los Angeles campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete the following: <ul style="list-style-type: none"> • A course that articulates with a second semester of expository writing that emphasizes exposition, research, and critical thinking, typically called “Writing and Critical Thinking” (as opposed to “Literature and Composition”). 	0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography
LOWER-DIVISION TRANSFER PATTERN
California Maritime Academy Campus-Specific Pattern

This campus does not have a major, concentration, or option in Geography.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Monterey Bay Campus-Specific Pattern

This campus does not have a major, concentration, or option in Geography.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Northridge Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Northridge campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete <u>one</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [CSUN GEOG 101], The Physical Environment - A study of the natural environment; nature, distribution, and relationships of climate, landforms, vegetation, hydrology, and soils. <u>Or</u> • A course that articulates with [CSUN GEOG 103], Weather – Study of atmospheric processes. 	0-3 units
(2) If not taken as part of the statewide pattern complete <u>one</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [CSUN GEOG 107], Introduction to Human Geography – Examines the patterns and processes of human occupancy of the earth, with a focus on the United States. Topics such as population, agriculture, language, religion, ethnicity, politics, and economics are covered using tools, methods and perspective of the geographer. <u>Or</u> • A course that articulates with [CSUN GEOG 150], World Geography – A geographical survey of the world’s major regions with emphasis on those features important to an understanding of current global concerns and problems. 	0-3 units
(3) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Recommended Coursework:

- A course that articulates with [CSUN GEOG 206/L], Introduction to GIS and Lab - An introduction to basic principles of geographical information science (GIS), including data gathering, analysis, and display through digital methods. Introduction to examples of how GIS is currently being used to answer spatial questions on environmental and social issues.

Geography
LOWER-DIVISION TRANSFER PATTERN
Cal Poly Pomona Campus-Specific Pattern

In addition to the statewide pattern, the following is the Cal Poly Pomona campus-specific pattern for the B.S. in Geography:

Campus-Specific Pattern
(1) If necessary, complete additional coursework to bring total to 60 transferable semester units.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Sacramento Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU Sacramento campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete <u>all</u> of the following: <ul style="list-style-type: none">• A course that articulates with [CSUS GEOG 11], Laboratory for Physical Geography. <u>And</u>• A course that articulates with [CSUS GEOG 3], Introduction to Maps and Geographic Technologies.	0-1 units 0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	
<u>Recommended Coursework:</u> <ul style="list-style-type: none">• A course that articulates with Introductory Statistics. <u>Or</u>• A course that articulates with Introductory Computer Science. <u>Or</u>• A course that articulates with a Geology course. <u>Or</u>• A course that articulates with a Foreign Language course.	

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU San Bernardino Campus-Specific Pattern

In addition to the statewide pattern, the following is the CSU San Bernardino campus-specific pattern:

Campus-Specific Pattern
(1) If necessary, complete additional coursework to bring total to 60 transferable semester units.

Geography

LOWER-DIVISION TRANSFER PATTERN

San Diego State University Campus-Specific Pattern

In addition to the statewide pattern, the following is the San Diego State University campus-specific pattern for the B.A. in Geography with an option in General Geography:

Campus-Specific Pattern	Semester Unit Requirement
<p>(1) If not taken as part of the statewide pattern, complete the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 101L], Physical Geography Laboratory - Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. <u>And</u> • A course that articulates with [SDSU GEOG 104], Geographic Information Science and Spatial Reasoning (<i>Required prerequisite must be Intermediate Algebra</i>) - Fundamental concepts in geographic information systems, cartography, remote sensing, spatial statistics, and global positioning systems. Use of critical technologies in addressing human and environmental problems. 	<p>0-1 units</p> <p>0-3 units</p>
<p>(2) The Geography major is a Liberal Arts and Sciences degree and requires students to meet the following language requirement:</p> <ul style="list-style-type: none"> • Competency (successfully completing the third college semester or fifth college quarter - or equivalent) is required in one foreign language. 	<p>0-12 units</p>
<p>(3) If necessary, complete additional coursework to bring total to 60 (but not more than 70) transferable semester units. Coursework not taken at the community college must be completed at SDSU.</p>	
<p><i>A minor in another department approved by the undergraduate adviser in Geography is required for this degree.</i></p>	

In addition to the statewide pattern, the following is the San Diego State University campus-specific pattern for the B.A. in Geography with an emphasis in Methods of Geographical Analysis:

Campus-Specific Pattern	Semester Unit Requirement
<p>(1) If not taken as part of the statewide pattern, complete <u>all</u> of the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 101L], Physical Geography Laboratory - Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. <u>And</u> • A course that articulates with [SDSU GEOG 104], Geographic Information Science and Spatial Reasoning (<i>Required prerequisite must be Intermediate Algebra</i>) - Fundamental concepts in geographic information systems, cartography, remote sensing, spatial statistics, and global positioning systems. Use of critical technologies in addressing human and environmental problems. <u>And</u> • A course that articulates with [SDSU STAT 250], Statistical Principles and Practices (or a comparable statistics course) - Descriptive statistics, data displays, measures of central tendency and variability, random variables, sampling distribution. Estimation and hypothesis tests for means and proportions, linear regression and correlation. 	<p>0-1 units</p> <p>0-3 units</p> <p>0-3 units</p>
<p>(2) If not taken as part of the statewide pattern, complete at <u>one</u> of the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU CS 105], Visual Basic Programming - Programming and problem solving using Visual Basic programming language on the PC. Applications to GIS, computer games. <u>Or</u> • A course that articulates with [SDSU CS 107], Introduction to Computer Programming - Programming methodology and problem solving. Basic concepts of computer systems, algorithm design and development, data types, program structures. Extensive programming in Java. 	<p>0-3 units</p>
<p>(3) The Geography major is a Liberal Arts and Sciences degree and requires students to meet the following language requirement:</p> <ul style="list-style-type: none"> • Competency (successfully completing the third college semester or fifth 	<p>0-12 units</p>

college quarter - or equivalent) is required in one foreign language.	
(4) If necessary, complete additional coursework to bring total to 60 (but not more than 70) transferable semester units. Coursework not taken at the community college must be completed at SDSU.	

In addition to the statewide pattern, the following is the San Diego State University campus-specific pattern for the B.A. in Geography with an emphasis in Natural Resource and Environmental Geography:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern, complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 101L], Physical Geography Laboratory - Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. <u>And</u> • A course that articulates with [SDSU BIOL 100 and 100L], General Biology and laboratory - A beginning course in biology stressing processes common to living organisms. A laboratory course in biology stressing processes common to living organisms. <u>And</u> • A course that articulates with [SDSU POL S 102], Introduction to American and California Government and Politics - Political processes and institutions in the United States and California. Considers a variety of public policy issues such as environmental quality, health, education, relation between government and business, taxation, and foreign affairs as reflected in the dynamics of national and state politics. <u>And</u> • A course that articulates with [SDSU STAT 250], Statistical Principles and Practices (or comparable statistics course) - Descriptive statistics, data displays, measures of central tendency and variability, random variables, sampling distribution. Estimation and hypothesis tests for means and proportions, linear regression and correlation. <u>And</u> • A course that articulates with [SDSU GEOG 104], Geographic Information Science and Spatial Reasoning (Required prerequisite must be Intermediate Algebra) - Fundamental concepts in geographic information systems, cartography, remote sensing, spatial statistics, and global positioning systems. Use of critical technologies in addressing human and environmental problems. 	<p style="text-align: center;">0-1 units</p> <p style="text-align: center;">0-4 units</p> <p style="text-align: center;">0-3 units</p> <p style="text-align: center;">0-3 units</p> <p style="text-align: center;">0-3 units</p>
(2) The Geography major is a Liberal Arts and Sciences degree and requires students to meet the following language requirement: <ul style="list-style-type: none"> • Competency (successfully completing the third college semester or fifth college quarter - or equivalent) is required in one foreign language 	0-12 units
(3) If necessary, complete additional coursework to bring total to 60 (but not more than 70) transferable semester units. Coursework not taken at the community college must be completed at SDSU.	

In addition to the statewide pattern, the following is the San Diego State University campus-specific pattern for the B.A. in Geography with an emphasis in Physical Geography:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern, complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 101L], Physical Geography Laboratory - Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. <u>And</u> • A course that articulates with [SDSU CHEM 200], General Chemistry - General principles of chemistry with emphasis on inorganic materials. <u>And</u> • A course that articulates with [SDSU PHYS 180A], Fundamental of Physics - Mechanics, wave motion, sound, and fluids. <u>And</u> • A course that articulates with [SDSU PHYS 182A], Physical Measurements - Properties of matter, mechanics, sound, and wave motion. <u>And</u> • A course that articulates with [SDSU STAT 250], Statistical Principles and Practices (or comparable statistics course) - Descriptive statistics, data displays, measures of central tendency and variability, random variables, sampling distribution. 	<p style="text-align: center;">0-1 units</p> <p style="text-align: center;">0-5 units</p> <p style="text-align: center;">0-3 units</p> <p style="text-align: center;">0-1 units</p> <p style="text-align: center;">0-2 units</p>

<p>Estimation and hypothesis tests for means and proportions, linear regression and correlation. <u>And</u></p> <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 104], Geographic Information Science and Spatial Reasoning (<i>Required prerequisite must be Intermediate Algebra</i>) - Fundamental concepts in geographic information systems, cartography, remote sensing, spatial statistics, and global positioning systems. Use of critical technologies in addressing human and environmental problems. 	0-3 units
<p>(2) If not taken as part of the statewide pattern, complete <u>one</u> of the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU MATH 121], Calculus for the Life Sciences I - Basic concepts of differential calculus with life science applications. <u>Or</u> • A course that articulates with [SDSU MATH 150], Calculus I - Algebraic and transcendental functions. Continuity and limits. The derivative and its applications. The integral and the fundamental theorem of calculus. 	0-4 units
<p>(3) The Geography major is a Liberal Arts and Sciences degree and requires students to meet the following language requirement:</p> <ul style="list-style-type: none"> • Competency (successfully completing the third college semester or fifth college quarter - or equivalent) is required in one foreign language 	0-12 units
<p>(4) If necessary, complete additional coursework to bring total to 60 (but not more than 70) transferable semester units. Coursework not taken at the community college must be completed at SDSU.</p>	

In addition to the statewide pattern, the following is the San Diego State University campus-specific pattern for the B.A. in Geography with an emphasis in Urban and Regional Analysis:

Campus-Specific Pattern	Semester Unit Requirement
<p>(1) If not taken as part of the statewide pattern, complete <u>all</u> of the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 101L], Physical Geography Laboratory - Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. <u>And</u> • A course that articulates with [SDSU ECON 102], Principles of Economics - Principles of economic analysis, economic institutions, and issues of public policy. Emphasis on direction of production, allocation of resources, and distribution of income, through the price system (microanalysis); and international economics. <u>And</u> • A course that articulates with [SDSU STAT 250], Statistical Principles and Practices (or comparable statistics course) - Descriptive statistics, data displays, measures of central tendency and variability, random variables, sampling distribution. Estimation and hypothesis tests for means and proportions, linear regression and correlation. <u>And</u> • A course that articulates with [SDSU GEOG 104], Geographic Information Science and Spatial Reasoning (<i>Required prerequisite must be Intermediate Algebra</i>) - Fundamental concepts in geographic information systems, cartography, remote sensing, spatial statistics, and global positioning systems. Use of critical technologies in addressing human and environmental problems. 	0-1 units
<p>(2) If not taken as part of the statewide pattern, complete <u>one</u> of the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU CS 105], Visual Basic Programming - Programming and problem solving using Visual Basic programming language on the PC. Applications to GIS, computer games. <u>Or</u> • A course that articulates with [SDSU CS 107], Introduction to Computer Programming - Programming methodology and problem solving. Basic concepts of computer systems, algorithm design and development, data types, program structures. Extensive programming in Java. 	0-3 units
<p>(3) The Geography major is a Liberal Arts and Sciences degree and requires students to meet the following language requirement:</p> <ul style="list-style-type: none"> • Competency (successfully completing the third college semester or fifth college quarter - or equivalent) is required in one foreign language. 	0-12 units
<p>(4) If necessary, complete additional coursework to bring total to 60 (but not more than 70) transferable semester units. Coursework not taken at the community college must be completed at SDSU.</p>	

In addition to the statewide pattern, the following is the San Diego State University campus-specific pattern for the B.S. in Geography with an emphasis in Geographic Information Science:

Campus-Specific Pattern	Semester Unit Requirement
<p>(1) If not taken as part of the statewide pattern, complete <u>all</u> of the following:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU GEOG 101L], Physical Geography Laboratory - Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. <u>And</u> • A course that articulates with [SDSU GEOG 104], Geographic Information Science and Spatial Reasoning (Required prerequisite is Intermediate Algebra) - Fundamental concepts in geographic information systems, cartography, remote sensing, spatial statistics, and global positioning systems. Use of critical technologies in addressing human and environmental problems. <u>And</u> • A course that articulates with [SDSU BIOL 100 and 100L], General Biology and laboratory - A beginning course in biology stressing processes common to living organisms. A laboratory course in biology stressing processes common to living organisms. <u>And</u> • A course that articulates with [SDSU CHEM 200], General Chemistry - General principles of chemistry with emphasis on inorganic materials. <u>And</u> • A course that articulates with [SDSU PHYS 180A], Fundamentals of Physics - Mechanics, wave motion, sound, and fluids. <u>And</u> • A course that articulates with [SDSU PHYS 182A], Physical Measurements - Properties of matter, mechanics, sound, and wave motion. <u>And</u> • A course that articulates with [SDSU STAT 250], Statistical Principles and Practices (or comparable statistics course) - Descriptive statistics, data displays, measures of central tendency and variability, random variables, sampling distribution. Estimation and hypothesis tests for means and proportions, linear regression and correlation. 	<p>0-1 units</p> <p>0-3 units</p> <p>0-4 units</p> <p>0-5 units</p> <p>0-3 units</p> <p>0-1 units</p> <p>0-3 units</p>
<p>(2) If not taken as part of the statewide pattern, complete <u>two</u> of the following courses:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU CS 105], Visual Basic Programming - Programming and problem solving using Visual Basic programming language on the PC. Applications to GIS, computer games. <u>Or</u> • A course that articulates with [SDSU CS 106], Introduction to Computer Programming with FORTRAN - Introduction to problem solving on a computer, design of algorithms, and use of FORTRAN language. Extensive programming. <u>Or</u> • A course that articulates with [SDSU CS 107], Introduction to Computer Programming - Programming methodology and problem solving. Basic concepts of computer systems, algorithm design and development, data types, program structures. Extensive programming in Java. <u>Or</u> • A course that articulates with [SDSU CS 108], Intermediate Computer Programming - Further training in program design and development. Introduction to data structures: stacks, queues, linear lists, trees, sets, and recursion. Extensive programming in Java. 	<p>0-6 units</p>
<p>(3) If not taken as part of the statewide pattern, complete <u>one</u> of the following options:</p> <ul style="list-style-type: none"> • A course that articulates with [SDSU MATH 150], Calculus I - Algebraic and transcendental functions. Continuity and limits. The derivative and its applications. The integral and the fundamental theorem of calculus. <u>Or</u> • Complete <u>all</u> of the following: <ul style="list-style-type: none"> ○ A course that articulates with [SDSU MATH 121], Calculus for the Life Sciences I - Basic concepts of differential calculus with life science applications. <u>And</u> ○ A course that articulates with [SDSU MATH 122], Calculus for the Life Sciences II - A continuation of Mathematics 121 with topics from integral calculus and an introduction to elementary differential equations. 	<p>0-6 units</p>
<p>(4) Students must complete 60 (but not more than 70) transferable semester units. Coursework not taken at the community college must be completed at SDSU.</p>	

Geography
LOWER-DIVISION TRANSFER PATTERN
San Francisco State University Campus-Specific Pattern

In addition to the statewide pattern, the following is the San Francisco State University campus-specific pattern:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern complete <u>all</u> of the following: <ul style="list-style-type: none"> • A course that articulates with [SFSU ENG 114], College Composition, 1st semester - Training in expository-argumentative composition, emphasizing work on clear and effective sentences and the organization and development of paragraph and essay. <u>And</u> • A course that articulates with [SFSU ENG 214], College Composition and Literature, 2nd semester - Expository-argumentative composition and critical reading skills through the study of literature; special attention to logic, style, and rhetoric. <i>A minimum grade of C is necessary in courses used to meet this requirement.</i> 	0-3 units 0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography
LOWER-DIVISION TRANSFER PATTERN
San José State University Campus-Specific Pattern

In addition to the statewide pattern, the following is the San José State University campus-specific pattern for the B.A. in Geography:

Campus-Specific Pattern	Semester Unit Requirement
(1) If not taken as part of the statewide pattern, complete courses from the following to bring total up to 60, and not more than 70 transferable semester units: <ul style="list-style-type: none"> • A course that articulates with [SJSU ENGL 001B], Composition 2, or an equivalent 2nd Semester English Composition course approved for IGETC Area 1B. <i>A minimum grade of C or higher is required in courses used to meet this requirement.</i> <u>And</u> • Physical Activity. <i>Two units taken in at least two different activities.</i> <u>And</u> • A course that articulates with [SJSU STAT 095], Elementary Statistics. 	0-3 units 0-2 units 0-3 units
(2) If necessary, complete additional coursework to bring total to 60 transferable semester units.	

Geography
LOWER-DIVISION TRANSFER PATTERN
Cal Poly San Luis Obispo Campus-Specific Pattern

This campus does not have a major, concentration, or option in Geography.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU San Marcos Campus-Specific Pattern

This campus does not have a major, concentration, or option in Geography.

Geography
LOWER-DIVISION TRANSFER PATTERN
Sonoma State University Campus-Specific Pattern

In addition to the statewide pattern, the following is the Sonoma State University campus-specific pattern:

Campus-Specific Pattern
(1) If necessary, complete additional coursework to bring total to 60 transferable semester units.

Geography
LOWER-DIVISION TRANSFER PATTERN
CSU Stanislaus Campus-Specific Pattern

In addition to the statewide pattern of 45 units, the following is the CSU Stanislaus campus pattern:

Campus-Specific Pattern
(1) If necessary, complete additional coursework to bring total to 60 transferable semester units.