



STEM- Science, Technology, Engineering, Math

Career Information Session





Spotlight on:

Earth Science

- Astronomy
- Geography (Geospatial Technology)
- Geology



Astronomy



Astronomy: Overview of the Program

Astronomers study the solar system, stars, galaxies, and space using principles of physics and mathematics. Astronomers study planets, stars, novas, and colliding gases between stars in an attempt to determine how they were formed, what they are made of, and how they change.



Degrees and Certificates

Degrees and Certificates

Transfer Preparation Courses

Many colleges/universities offer bachelor's degrees in this field. Students planning to transfer to a four-year college or university should complete the lower-division major requirements and the general education pattern for the specific transfer institution. SMC has agreements with the many UC and CSU campuses, as well as several private and out-of-state institutions.



Academic Planning

For information on the program, assistance creating your educational plan, or exploring options make an appointment with a STEM Counselor:

- <http://smc.edu/student-support/academic-support/counseling/contact.php>

There are different counselors and programs available to serve all needs. We recommend that you see a STEM counselor in addition to other special programs you are a member of. Once on the web page, to schedule an appointment, select the STEM Counseling button.



STEM



Potential Career Options

Job Title	Typical Education	Median Wage
Astronomer	Doctoral Degree	\$172,467
Atmospheric & Space Scientist	Bachelor's Degree	\$71,739
Aerospace Engineer	Bachelor's Degree	\$130,686
Physicist	Doctoral Degree	\$81,016
Atmospheric, Earth, Marine, and Space Science Teachers, Postsecondary	Doctoral Degree	\$82, 451



Starter Class

- **ASTRON 1: Stellar Astronomy**

This course provides a comprehensive introduction to the fascinating subject of astronomy with an emphasis on the study of the Sun and other stars. Topics covered include the motions of the sky, a survey of the history of astronomy from Kepler to Einstein, gravity, radiation and matter, astronomical instrumentation, the Sun, stars, star formation, stellar evolution, galaxies and cosmology.



Program Highlights

- **The John Drescher Planetarium At Santa Monica College**
Home to a computerized planetarium theater. At its heart is the Evans & Sutherland Digistar II planetarium projector, which was the first of its kind on the West Coast. Using digital technology, audiences can fly beyond the solar system and soar among the stars. We can transport you across our galaxy to the limits of spacetime or into the heart of the atom.

For more information on the John Drescher Planetarium and/or how to attend a show, visit <http://smc.edu/smc-community/planetarium/index.php>





Student Clubs

- **Office of Student Life - Student Clubs (www.smc.edu/icc)**
 - **Astronomy Club**
Increase knowledge on astronomical terminology, math and tools; For more information, contact astronsmc@gmail.com



Campus Resources

- **Astronomy**
 - **Website:** <http://smc.edu/academics/areas-of-interest/stem/earth-sciences/astronomy.php>
 - **Contact Information:**
Phone: (310) 434-4767
- **STEM Program**
 - **Website:** <http://smc.edu/stem>
 - **Contact Information:**
Phone: (310) 434-43988
- **Career Services Center**
 - **Website:** <http://smc.edu/careercenter>
 - **Contact Information:**
Email: careerservices@smc.edu
Phone: (310) 434-4337



Geography: Geospatial Technology



About the Geography Program

The Geography Program covers all fields of geography from physical, to human to geographic techniques, including geospatial studies and analysis. These fields have been experiencing remarkable renaissance and growth that has accelerated during the last several years.

Modern geographers around our nation and our world are helping to solve problems ranging from natural resource distribution and use, to urban planning, identifying and preparing for natural hazards, and analyzing human population and migration patterns.



Degrees and Certificates

Degrees and Certificates

Associate in Arts For Transfer Degree (AA-T) – Geography

Department Certificate – Geospatial Technology



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Potential Career Options

Job Title	Typical Education	Median Wage
Facilities Engineer	Bachelor's Degree	\$ 73,000
Geographer	Master's Degree	\$75,000
Geospatial Intelligence Analyst	Bachelor's Degree	\$72,030
Spatial Data Scientist	Master's Degree	\$105,633
Geospatial Software Developer	Bachelor's Degree	\$88,179

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Starter Class

GEOG 1, PHYSICAL GEOGRAPHY

This course surveys the distribution and relationships of environmental elements in our atmosphere, lithosphere, hydrosphere and biosphere, including weather, climate, water resources, landforms, soils, natural vegetation, and wildlife. Focus is on the systems and cycles of our natural world, including the effects of the sun and moon on the environmental processes, and the roles played by humans.

GEOG 2, INTRODUCTION TO HUMAN GEOGRAPHY

This course is a study of humanity and its planetary home of distinctive places, spaces, landscapes, and environments. The course systematically considers geographic patterns, processes, and issues, beginning with the basic questions of Where? and Why There? Specific topics examined include human population change and migration; agriculture and food systems; urban-economic development; cultural and environmental change in an age of globalization, with specific attention paid to language, religion, ethnic identity, and biodiversity; and international geopolitics.

GEOG 5, PHYSICAL GEOGRAPHY WITH LAB

This course surveys the distribution and relationships of environmental elements in our atmosphere, lithosphere, hydrosphere and biosphere, including weather, climate, water resources, landforms, soils, natural vegetation, and wildlife. Focus is on the systems and cycles of our natural world, including the effects of the sun and moon on environmental processes, and the roles played by humans. Laboratory work emphasizes the practical application of concepts presented in lecture, introduces the student to some of the tools and methods used in Physical Geography, and may include field study opportunities.



Program Highlights

- **GEOG/GIS 23: Intermediate GIS Course**

In this course students often go on company tours and participate in industry sponsored classroom challenges. For example, LA CITY asked students to set up a Biodiversity Baseline for Los Angeles.

ARUP asked students to think about how GIS can be used when thinking about the UN Sustainable Development Goals (SDGs) and how they can apply them to Santa Monica or LA County.

GIS 23 is the same course as Geography 23. Students may receive credit for one, but not both.



Student Clubs

- **Office of Student Life - Student Clubs (www.smc.edu/icc)**

See clubs available at Santa Monica College and learn how to join or start your own club.



Campus Resources

- **Geography**
 - **Website:**
 - <http://webdev.smc.edu/academics/areas-of-interest/people-and-society/earth-sciences/geography.php>
 - **Contact Information:**
Phone: (310) 434-4767
- **STEM Program**
 - **Website:** <http://smc.edu/stem>
 - **Contact Information:**
Phone: (310) 434-43988



Campus Resources

- **Career Services Center**
 - **Website:** <http://smc.edu/careercenter>
 - **Contact Information:**
Email: careerservices@smc.edu
Phone: (310) 434-4337



Geology



About the Geology Program

Geology encompasses all studies of earth processes and is one of the cornerstone programs within the Earth Sciences Department. Students majoring in Geology will gain a scientific understanding of geologic processes that shape the earth's surface, oceans and atmosphere.



Degrees and Certificates

Degrees and Certificates

Transfer Preparation Courses

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Potential Career Options

Job Title	Typical Education	Median Wage
Environmental Engineers	Master's Degree	\$101,504
Environmental Scientists and Specialists	Bachelor's Degree	\$71, 873
Gem & Diamond Workers	Bachelor's Degree	\$31, 372
Geological Sample Test Technician	Bachelor's Degree	\$37,100

Many colleges/universities offer bachelor's degrees in this field. Students planning to transfer to a four-year college or university should complete the lower-division major requirements and the general education pattern for the specific transfer institution. SMC has agreements with the many UC and CSU campuses, as well as several private and out-of-state institutions.



Starter Class

GEOL 4, PHYSICAL GEOLOGY WITH LAB

This course presents an introduction to geologic processes that have shaped the Earth. Lecture topics include formation of the Earth, plate tectonics, rocks, minerals, earthquakes, geologic structures, geologic time, coastal processes, and groundwater. Laboratory exercises expand this information by dealing with rock and mineral identification, topographic and geologic map interpretation, and the interpretation aerial photographs. Upon completion of this course, the student will have a good understanding of the processes that form major features on Earth.



Student Clubs

Office of Student Life - Student Clubs (www.smc.edu/icc)

See clubs available at Santa Monica College and learn how to join or start your own club.

Geology Club

Faculty Advisor: Christyanne Melendez

WiSTEM Club (Women in STEM)

Faculty Advisor: Lisa Collins

IG @WISTEM_SMC

EMAIL:WISTEM.SMC@GMAIL.COM



Program Highlights

- **GLOBAL 35: Global Citizenship Field Study**
In this course students often go on field trips to Catalina Island.





Campus Resources

- **Geology** (Department Blog: [Earth Science Department Blog — Geology Posts](#))
 - **Website:** <http://www.smc.edu/geology>
 - **Contact Info:**
Phone: (310) 434-4767
Email: earthscience@smc.edu
- **STEM Program**
 - **Website:** <http://smc.edu/stem>
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STEM Resources



STEM Resources

- **STEM Program**

Academic support program designed to help traditionally underrepresented students, interested in STEM careers successfully complete their studies at SMC, transfer to a 4-year research-oriented baccalaureate program, and enter the STEM workforce. Programs also has STEM Program reserved courses. For more information and for application deadlines, visit <http://smc.edu/stem>

- **STEM Lab Tutoring**

Free tutoring in select STEM courses. For the tutoring schedule visit <http://smc.edu/student-support/academic-support/counseling/special-support-programs/stem/stem-tutoring.php>

- **Science Learning Resource Center**

Learning facility for Earth, Life, and Physical Sciences students. Students come to do their required Lab Hours in Anatomy, Physiology and Chemistry 10. <http://smc.edu/student-support/academic-support/tutoring-centers/science-lrc.php>



STEM Resources

- **Peer Mentor Support**
Collaborative involvement with fellow students and the STEM/SRI program team
<http://smc.edu/student-support/academic-support/counseling/special-support-programs/stem/peer-mentor-program.php>
- **STEMinars (workshops)**
Workshops designed specifically for STEM students
- **Supplemental Instruction (SI)**
Participate in free sessions involving interactive group activities to help understand course concepts, prepare for exams, and learn effective study skills.
<http://smc.edu/student-support/academic-support/supplemental-instruction/index.php>
- **STEM Counseling**
STEM counselors are available to help you plan your academic goals.
<http://smc.edu/student-support/academic-support/counseling/contact.php>




STEM Program Applying as a New Incoming SMC Student

- **Incoming SMC Student STEM Program Application Requirements**
 - Complete SMC Application and interest in one of the STEM fields
 - Minimum of 2 years of high school science
 - Math 20-ready (Intermediate Algebra or higher)
 - Recommended 2.50 High School GPA
- **Incoming SMC Student STEM Program Dates and Deadlines**
 - The application is typically available in May and the deadline to apply is in May
 - <http://smc.edu/student-support/academic-support/counseling/special-support-programs/stem/sri-application-information.php>
- **STEM Program Mailing/Interest Card**
 - <http://smc.edu/student-support/academic-support/counseling/special-support-programs/stem/science-research-initiative.php>



STEM Program Applying as a Current SMC Student

- **Currently Enrolled SMC Student STEM Program Application Requirements**
 - Math 20-ready (Intermediate Algebra or higher)
 - 2 years of Science Research Initiative (SRI) program commitment
 - Interest in one of the STEM fields
 - Planned enrollment in Math and Science courses
- **Currently Enrolled SMC Student STEM Program Dates and Deadlines**
 - Application typically available in May and the deadline to apply is in May
 - <http://smc.edu/student-support/academic-support/counseling/special-support-programs/stem/sri-application-information.php>
- **STEM Program Mailing/Interest Card**
 - <http://smc.edu/student-support/academic-support/counseling/special-support-programs/stem/science-research-initiative.php>



Don't forget to explore the additional videos on Programs and Careers in STEM

- **Math**
- **Physics**
- **Engineering**
- **Automotive Technology**
- **Environmental Science**
- **Sustainable Technologies**
- **Chemistry**
- **Biological Science**
- **General Science**
- **Computer Science**
- **Computer Programming**
- **Cyber Security, Networking**
- **Cloud Computing, Web and Mobile Development**