

CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS CERTIFICATE

Total Credits: 21

Catalog Edition: 2025-2026

Program Description

(R): 184

Training in cartography and geographic information systems enables the student to develop, construct, and use maps and other imagery to solve problems relating to the earth, its resources, and its development. These skills are used by professionals employed in federal mapping and related agencies in the Washington metropolitan region.

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For more information, please visit <https://www.montgomerycollege.edu/academics/programs/applied-geography/cartography-gis-certificate.html>

Program Outcomes

Upon completion of this program, a student will be able to:

- Use various mapping software packages.
- Apply their enhanced cartographic skills.
- Use maps as tools.
- Conduct research and be familiar with the various research resources available, i.e., county, city, and federal government; the private sector; and online data.
- Have gained an appreciation of the various job opportunities available through attending trips to various cartographic facilities.
- Integrate other software as appropriate into their mapping projects, e.g., Adobe Illustrator, Photoshop, and other graphics packages.
- Use various techniques that improve their cartographic, GIS, and spatial analytic skills.
- Create portfolios and PowerPoint presentations and give presentations that strengthen their communication, interpersonal, and articulation skills.
- Present and explain their work at map design competitions and at poster presentations at conferences.

Program Advisors

Rockville

2025-2026

Program Advising Guide

An Academic Reference Tool for Students

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Program Requirements

A suggested course sequence for full-time students follows. All students should review this advising guide and consult an advisor.

Program Requirements

GEOG 101 - Introduction to Geography *3 semester hours*

GEOG 240 - Introduction to Cartography *3 semester hours*

GEOG 250 - Interpretation of Geographic Imagery: Use and
Analysis *3 semester hours*

GEOG 251 - Principles of Map Design *3 semester hours*

GEOG 255 - Introduction to Computer Mapping *3 semester
hours*

GEOG 260 - Introduction to Geographic Information
Systems *3 semester hours*

GEOG 270 - Advanced Geographic Information Systems *3
semester hours*

Total Credit Hours: 21

Transfer Opportunities

Montgomery College has partnerships with multiple four-year institutions and the tools to help you transfer. To learn more, please visit <https://www.montgomerycollege.edu/transfer> or <http://artsys.usmd.edu>.

Get Involved at MC!

Employers and Transfer Institutions are looking for experience outside the classroom.

MC Student Clubs and Organizations: <https://www.montgomerycollege.edu/life-at-mc/student-life/>

Related Careers

Some require a Bachelor's degree.

Map Making, Charting, Geographic Information Systems, Remote Sensing, Interpretation and Analysis, Statistical and Spatial Analysis, Research and Analysis, Field Work, Resource Management and Conservation, Land and Water Resource Planning, Space Exploration, Market Site Research, Teaching, Computer Graphics and Multi-media Graphics, City Planning and Urban Land Use, Consulting.

Career Services

Montgomery College offers a range of services to students and alumni to support the career planning process. To learn more, please visit <https://www.montgomerycollege.edu/career>

Career Coach

A valuable online search tool that will give you the opportunity to explore hundreds of potential careers or job possibilities in Maryland and the Washington D.C. metropolitan area. Get started today on your road to a new future and give it a try. For more information, please visit <https://montgomerycollege.emsicc.com>

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