



Department of Geography and Geology
GEOGRAPHY GEOLOGY METEOROLOGY GIS

Master's Degree in Geoscience

Program Application Instructions:

Program Application Deadlines:

February 1st for Fall admission (note: No Spring admissions permitted).

Program Admission Requirements:

**** Applicants must submit the following materials as part of the application process:**

- Focused description of research interests, including potential research topics with an identified theme, defined problem, and/or potential questions that demonstrate knowledge of his or her field of interest within the Geosciences and how these intersect with current faculty expertise within the Department.
- A resume or CV.
- TOEFL result (requirement only for international applicants whose first language is not English).
- GRE scores (minimum of 4.0 on writing component).
- Overall 3.0 GPA.
- Official transcripts from all previous institutions.
- Written evidence (e-mail acceptance is OK) of an agreement from a graduate faculty member in the Department of Geography and Geology willing to supervise the applicant's thesis research project.
- Separate application for Graduate Assistantship funding submitted directly to the Department (if requesting funding).
- Passing grades (C or higher) in appropriate undergraduate coursework to support the thesis research program. Students should take preparatory courses before joining the Geoscience program if they have not previously taken these courses. If taken as a graduate student, a grade of "B" or better is required. Students should consult with their proposed thesis advisor on appropriate preparation coursework before full admission is granted. Note that GEOS 520 (Spring semester), a required course, anticipates students will have statistical and GIS competency.

WKU Application forms online :

https://acsapps.wku.edu/pls/prod/bwskalogs.P DispLoginNon?app_level=GR&qtype=GR

Graduate Assistantship Application

- Students applying for a graduate assistantship must have written support from a research faculty member in the department prior to submitting an application.
- Assistantship Applications for the academic year must be received by February 1st of the Spring Semester.
- Assistantship Funds are traditionally awarded on an academic year basis only. There are typically no funding opportunities for Spring semester only.
- Renewal Applications for Second Year GA funding should be received by the Department's graduate committee by February 1st of the Spring Semester.

JUMP Program Application

- Students can apply after the completion of a minimum of 45 hours of undergraduate credit.

Graduate Instructors

“If you would like to teach a course in your second year, Graduate Instructors (GI) may be available for second-year graduate students. Applicants for GI designation are required to: (a) complete a GEOS 595 Teaching Practicum in the Spring semester of the first year by shadowing a faculty member in a course the student wishes to teach; (b) complete a required sequence of GATI training opportunities during the Spring semester of the first year (refer to the current policy requirements on the Graduate School website at http://www.wku.edu/graduate/aid/ga/grad_assistant_instructor.php) and for GATI specifics at (<http://www.wku.edu/cfd/gati.php>); and (c) complete a minimum of 18 graduate hours before the teaching assignment begins. In the event that GEOS 595 cannot fit into the student's regular schedule of 9 hours in the Spring semester of the first year, the student may satisfy the practicum requirement by working closely with a graduate faculty instructor of record, developing course content, and giving lectures during the semester in the content to be taught that are evaluated and documented by the supervising faculty member, and submitted to the Department Chair for approval. In addition, the Department will follow Graduate School guidelines for regular evaluation of the GI during the teaching semester(s), as detailed in WKU Policy 1.1130 (<https://www.wku.edu/policies/docs/21.pdf>) and in WKU Policy 1.3070 (<https://www.wku.edu/policies/docs/39.pdf>).”

M.S. Program Research Concentrations:

The M.S. Geoscience program requires a minimum of 30 semester hours, including 24 hours of coursework and a 6-hour research thesis.

Program Core

(15 hours):

| | |
|---|---|
| GEOS 500 Geoscience Research Methods | 3 hours |
| GEOS 520 Geoscience Statistics | 3 hours |
| GEOS 502 Field Research Methods | 3 hours (or other appropriate methods) |
| GEOS 599 Research Thesis | 6 hours |

Program Electives (15 hours):**

At least 15 hours of graduate coursework in an appropriate **Research Concentration** approved by the thesis director and selected from the following electives:

Electives in Physical Science:

| | |
|---------------------------------|---|
| GEOS 502 Field Research Methods | 3 |
| GEOS 510 Research Topics | 3 |
| GEOS 515 Remote Sensing | 3 |
| GEOS 521 Geomorphology | 3 |
| GEOS 559 Hydrological Fluid | 3 |
| GEOS 566 Karst Geoscience | 3 |
| GEOS 595 Geoscience Practicum | 3 |
| GEOS 5xx Any Geology course | 3 |

Electives in Cultural Science:

| | |
|---------------------------------|---|
| GEOS 501 Geoscience Development | 3 |
| GEOS 507 Geography for Teachers | 3 |
| GEOS 510 Research Topics | 3 |
| GEOS 525 Political Geography | 3 |
| GEOS 534 Historic Preservation | 3 |
| GEOS 540 Regional Geography | 3 |
| GEOS 550 Economic Geography | 3 |
| GEOS 580 Urban Geography | 3 |
| GEOS 585 Population Geography | 3 |
| GEOS 595 Geoscience Practicum | 3 |
| GEOG 451G Geography Kentucky | 3 |

Electives in Geographical Information Science:

| | |
|----------------------------------|---|
| GEOS 510 Research Topics | 3 |
| GEOS 515 Remote Sensing | 3 |
| GEOS 517 Spatial Databases | 3 |
| GEOS 523 Urban GIS Applications | 3 |
| GEOS 575 GIS Analysis & Modeling | 3 |
| GEOS 576 GIS Programming | 3 |
| GEOS 577 Special Topics GIS | 3 |
| GEOS 584 Applied Env Planning | 3 |
| GEOS 590 Experimental Design | 3 |
| GEOS 595 GIS Practicum | 3 |

Electives in Environmental Science:

| | |
|--------------------------------|---|
| GEOS 505 Biogeography | 3 |
| GEOS 506 Environment Seminar | 3 |
| GEOS 510 Research Topics | 3 |
| GEOS 515 Remote Sensing | 3 |
| GEOS 543 Env Science Concepts | 3 |
| GEOS 544 Environmental Ethics | 3 |
| GEOS 571 Applied Nat. Resource | 3 |
| GEOS 584 Applied Env. Planning | 3 |
| GEOS 587 Environmental Law | 3 |
| GEOS 595 Geoscience Practicum | 3 |
| GEOS 560 Environmental Geology | 3 |

| | |
|--|----------|
| Electives in Climate Science: | |
| GEOS 510 Research Topics | 3 |
| GEOS 515 Remote Sensing | 3 |
| GEOS 522 Physical Climatology | 3 |
| GEOS 531 Dynamic Meteorology I | 3 |
| GEOS 533 Synoptic Meteorology | 3 |
| GEOS 535 Dynamic Meteorology II | 3 |
| GEOS 537 Mesoscale Meteorology | 3 |
| GEOS 538 Physical Meteorology | 3 |
| GEOS 539 Atmospheric Modeling | 3 |
| GEOS 595 Geoscience Practicum | 3 |

**** A maximum of six hours of advisor-approved electives that are consistent with the student's Research Concentration interests may be selected from other departments or from other Geoscience concentrations.**

A suggested semester-by-semester sequence of courses is provided below – use this to schedule your 2-year program.

*Welcome to the Geography and Geology Department at Western Kentucky University
M.S. Geoscience Program*

Semester-by-Semester Checklist for the M.S. Geoscience Program - Effective Fall 2019

Physical Geoscience Research Focus

| Course | Credits | Faculty | Course | Credit | Faculty |
|-----------------------------|----------|---------|-------------------------------|----------|---------|
| Fall Semester Year 1 | | | Spring Semester Year 1 | | |
| GEOS 500 Research Methods | 3 | | GEOS 527 Water Resources | 3 | |
| GEOL 415G Env. Geology | 3 | | GEOS 502 Field Tech | 3 | |
| GEOS 566 Karst Geoscience | 3 | | GEOS 520 Spatial Tech | 3 | |
| | | | | | |
| HOURS | 9 | | | 9 | |
| Fall Semester Year 2 | | | Spring Semester Year 2 | | |
| GEOS 555 Climate Change | 3 | | GEOS 599 Thesis Research | 3 | |
| GEOS 521 Geomorphology | 3 | | | | |
| GEOS 599 Thesis Research | 3 | | | | |
| | | | | | |
| | | | | | |
| HOURS | 9 | | | 3 | |

- Required courses are GEOS 500 (3), 520 (3), 502 (3), and 599 (6) = 15 hours
- Elective courses are advisor-approved graduate courses in the research area = 15 hours
- GEOS 595 Teaching Practicum can be substitute in Year 1 Spring semester if the student wishes to teach as a GTA in the following academic year.

Cultural Geoscience Research Focus

| Course | Credits | Faculty | Course | Credit | Faculty |
|-----------------------------|----------|---------|-------------------------------|----------|---------|
| Fall Semester Year 1 | | | Spring Semester Year 1 | | |
| GEOS 500 Research Methods | 3 | | GEOS 525 Political Geog | 3 | |
| GEOS 580 Urban Analysis | 3 | | GEOS 502 Field Tech | 3 | |
| GEOG 540 Regional Geog | 3 | | GEOS 520 Spatial Tech | 3 | |
| | | | | | |
| HOURS | 9 | | | 9 | |
| Fall Semester Year 2 | | | Spring Semester Year 2 | | |
| GEOG 452G Kentucky | 3 | | GEOS 599 Thesis Research | 3 | |
| GEOS 523 Urban GIS Apps | 3 | | | | |
| GEOS 599 Thesis Research | 3 | | | | |
| | | | | | |
| | | | | | |
| HOURS | 9 | | | 3 | |

- Required courses are GEOS 500 (3), 520 (3), 502 (3), and 599 (6) = 15 hours
- Elective courses are advisor-approved graduate courses in the research area = 15 hours
- GEOS 595 Teaching Practicum can be substitute in Year 1 Spring semester if the student wishes to teach as a GTA in the following academic year.

Geographic Information Science Research Focus

| Course | Credits | Faculty | Course | Credit | Faculty |
|-----------------------------|----------|---------|-------------------------------|----------|---------|
| Fall Semester Year 1 | | | Spring Semester Year 1 | | |
| GEOS 500 Research Methods | 3 | | GEOS 576 GIS Programs | 3 | |
| GEOS 575 GIS Analysis | 3 | | GEOS 502 Field Tech | 3 | |
| GEOS 523 Urban GIS App | 3 | | GEOS 520 Spatial Tech | 3 | |
| | | | | | |
| HOURS | 9 | | | 9 | |
| Fall Semester Year 2 | | | Spring Semester Year 2 | | |
| GEOS 577 GIS Topics | 3 | | GEOS 599 Thesis Research | 3 | |
| GEOS 515 Remote Sensing | 3 | | | | |
| GEOS 599 Thesis Research | 3 | | | | |
| | | | | | |
| | | | | | |
| HOURS | 9 | | | 3 | |

- Required courses are GEOS 500 (3), 520 (3), 502 (3), and 599 (6) = 15 hours
- Elective courses are advisor-approved graduate courses in the research area = 15 hours
- GEOS 595 Teaching Practicum can be substitute in Year 1 Spring semester if the student wishes to teach as a GTA in the following academic year.

Environmental Geoscience Research Focus

| Course | Credits | Faculty | Course | Credit | Faculty |
|-----------------------------|----------|---------|-------------------------------|----------|---------|
| Fall Semester Year 1 | | | Spring Semester Year 1 | | |
| GEOS 500 Research Methods | 3 | | GEOS 527 Water Resources | 3 | |
| GEOS 566 Karst Geoscience | 3 | | GEOS 502 Field Tech | 3 | |
| GEOL 415G Env. Geology | 3 | | GEOS 520 Spatial Tech | 3 | |
| | | | | | |
| HOURS | 9 | | | 9 | |
| Fall Semester Year 2 | | | Spring Semester Year 2 | | |
| GEOS 555 Climate Change | 3 | | GEOS 599 Thesis Research | 3 | |
| GEOS 571 App Nat Resrce | 3 | | | | |
| GEOS 599 Thesis Research | 3 | | | | |
| | | | | | |
| | | | | | |
| HOURS | 9 | | | 3 | |

- Required courses are GEOS 500 (3), 520 (3), 502 (3), and 599 (6) = 15 hours
- Elective courses are advisor-approved graduate courses in the research area = 15 hours
- GEOS 595 Teaching Practicum can be substitute in Year 1 Spring semester if the student wishes to teach as GTA in the following academic year.

Climate Geoscience Research Focus

| Course | Credits | Faculty | Course | Credit | Faculty |
|--|----------|---------|-------------------------------|----------|---------|
| Fall Semester Year 1 | | | Spring Semester Year 1 | | |
| GEOS 500 Research Methods | 3 | | GEOS 537 Mesoscale | 3 | |
| GEOS 539 Atmos Models | 3 | | GEOS 502 Field Tech | 3 | |
| GEOS 515 Remote Sensing or Climate Course | 3 | | GEOS 520 Spatial Tech | 3 | |
| HOURS | 9 | | | 9 | |
| Fall Semester Year 2 | | | Spring Semester Year 2 | | |
| GEOS 531 Dynamic I | 3 | | GEOS 535 Dynamic II | 3 | |
| GEOS 522 Phys Clim | 3 | | GEOS 599 Thesis Research | 3 | |
| GEOS 599 Thesis Research | 3 | | | | |
| | | | | | |
| | | | | | |
| HOURS | 9 | | | 6 | |

- Required courses are GEOS 500 (3), 520 (3), 502 (3), and 599 (6) = 15 hours
- Elective courses are advisor-approved graduate courses in the research area = 15 hours
- GEOS 595 Teaching Practicum can be substitute in Year 1 Spring semester if the student wishes to teach as GTA in the following academic year.
- Students with a B.S. Meteorology degree have more flexibility and each will have a different program of study, while those seeking NWS certification without a Meteorology B.S. will need to take all of the METR courses in sequence and will end up with more than 30 hours.

**Effective for M.S. Geoscience students beginning the program in Fall 2019.
Last updated: January 18, 2019.**