

July 25, 2024

Vice Provost for Academic Programs
Council on Academic Affairs
Office of Academic Affairs

Dear Dr. Smith,

The Department of Geography would like to submit revisions to the following two graduate programs, effective Spring 2025:

Geographic Information Science and Technology Graduate Certificate (GIST-CR)

- Add GEOG 5101 (GIS Professionalism and Ethics) to the program as an elective
- Change GEOG 5226 to GEOG 6226

Master of Geographic Information Science and Technology (MGIST)

- Change GEOG 6222 to GEOG 5223

Rationale

These changes are necessary due to a series of significant curriculum revisions made to our geographic information science and technology undergraduate and graduate programs over the past three years.

The MGIST program was established in 2022. During the process of developing this new program, we proposed a set of new courses, including GEOG 5101 (GIST Professionalism and Ethics), to address gaps in our GIST curriculum. GEOG 5101 was approved in Spring 2021 and first taught in Spring 2024. We also changed two 5000 level courses to 6000 level because they cover advanced topics that are suitable for professional master's students. These include changing GEOG 5223 (Design and Implementation of GIS) to GEOG 6222, and GEOG 5226 (Spatial Simulation and Modeling in GIS) to GEOG 6226. These changes were approved in Spring 2022.

The MGIST program was formally approved in December 2022. We admitted our first MGIST student in Spring 2024.

In the meantime, we started in Spring 2022 to revise the Bachelor of Science in Geographic Information Science (BS-GIS) program. The goal was to create a better scaffolded curriculum that covers both fundamental and advanced topics, while allowing students to broaden their portfolio to encompass a wide range of applications that will benefit their future career in GIST. In the revised curriculum, GEOG 5101 is one of the five required courses.

We also decided to keep GEOG 5223 at its 5000 level (more on this below) and to include it as an elective in the revised BS-GIS. The revision proposal was submitted in Spring 2023 and approved in Autumn 2023, effective Spring 2024.

In the two-year gap between Spring 2022 (when MGIST was approved) and 2024 (when the BS-GIS revision was approved), GEOG 5223 and 5226 were needed for legacy undergraduate students in the BS-GIS to complete their degree. This is especially the case for 5223 since it was a required course in the previous major curriculum. For this reason, we requested the two classes to be changed back to the 5000 level. This led us to rethink our plans for 5223, and to keep it as a 5000 level course. GEOG 5223 has a long history in the department. Our undergraduate major does not have a capstone project, but this has been considered an unofficial capstone course since we started to teach it in the 1990s. The course covers a range of advanced topics such as software development, project management, and programming. Students typically take this as the last class before they complete the degree requirements. This course helps students prepare for the job market that increasingly requires their experience and knowledge in project management in a setting of GIS tool and software development. We believe by keeping this class in the 5000 level, it will be a great benefit for our undergraduate students, as well as graduate students, to have this class on their professional resume.

GEOG 5226 was an elective course in our previous undergraduate curriculum and had seen declining enrollments, as explained the BS-GIS revision proposal. It is now changed to 6226 and will be taught in the new number in Autumn 2024.

Implementation plans

- Students enrolled in the GIST-CR program before Spring 2025 will be allowed to either opt-in the revised requirements or continue with the current requirements.
- Regarding the change to the MGIST program, all students enrolled or incoming in Autumn 2024 have yet to take GEOG 5223, which will be offered in Spring 2025. The change therefore will not affect them.
- These changes have no impact on the undergraduate students.

Attached please find the original advising sheets for both program and the revised advising sheets with track changes:

- *GIST advising sheet 11-20-2019.doc* – GIST-CR current advising sheet
- *GIST advising sheet 07-25-2024.doc* – GIST-CR revised advising sheet with track changes
- *MGIST_advising_sheet.docx* – MGIST current advising sheet
- *MGIST_advising_sheet 07-25-2024.docx* – MGIST revised advising sheet with tract changes. Please this revised advising sheet now includes the course titles that are not included in the current version.

If you need any additional information, please feel free to contact me.

Sincerely,



Ningchuan Xiao
Professor and Director of MGIST

Geographic Information Science and Technology Graduate Certificate—Type 3A

Department of Geography
1036 Derby Hall
154 N Oval Mall
Columbus, OH 43210
Tel: (614) 292-2514
Ningchuan Xiao, Professor
Email: xiao.37@osu.edu
Department website: <http://www.geography.osu.edu/>

Overview

This graduate certificate program provides students in various disciplines with training in geographic information science and technology (GIS&T). By completing this program, students will develop their methodological and technical skills in mapping, spatial analysis, remote sensing, and geospatial data analytics that will help them advance their research and career.

Certificate Requirements

Required: 12 hours

Introductory Courses

Required course

GEOG 5210 "Fundamentals of GIS" (3)

Elective courses

Choose no more than two of the following courses

GEOG 5103 "Intermediate Spatial Data Analysis" (3)

(prereq: GEOG 4103 or program coordinator permission)

GEOG 5200 "Cartography and Map Design" (3)

GEOG 5225 "Geographic Applications of Remote Sensing" (3)

Specialty Courses

Choose at least one from the following courses

GEOG 5201 "GeoVisualization" (3) (prereq: GEOG 5200)

GEOG 5212 "Spatial Database Design for GIS" (3)

(prereq: GEOG 5210 & CSE 1114 or GEOG 5210 & program coordinator permission)

GEOG 5222 "GIS Algorithms and Programming" (3) (prereq: GEOG 5212)

GEOG 5223 "Design and Implementation of GIS" (3) (prereq: GEOG 5222)

GEOG 5226 "Spatial Simulation and Modeling in GIS" (3)

Geographic Information Science and Technology Graduate Certificate program guidelines

Credit hours required: A minimum of 12 credit hours. Credit hours must be at the 5000-level or above. All courses applied toward the certificate must be completed at Ohio State.

Overlap with courses in a degree

- The certificate must be in a different subject than the major program.
- Max 50% overlap with courses in a degree program (i.e. major, minor, or other certificate)
- Course work graded Pass/Non-Pass cannot be applied to the certificate.

X193 credits: Not permitted.

Grades required

- Minimum C- for a course to be listed on the certificate.
- Minimum of 3.00 cumulative GPA for all certificate course work.

Certificate approval: The certificate must be approved by the academic unit.

Consult with advisor:

For filing deadlines

For changes or exceptions to a certificate plan

College of Arts and Sciences
Curriculum and Assessment Services
306 Dulles Hall, 230 Annie & John Glenn Ave.
<http://artsandsciences.osu.edu>

Appr CAA 11-20-2019

The Ohio State University
College of Arts and Sciences

Geographic Information Science and Technology Graduate Certificate—Type 3A

Department of Geography
1036 Derby Hall
154 N Oval Mall
Columbus, OH 43210
Tel: (614) 292-2514
Ningchuan Xiao, Professor
Email: xiao.37@osu.edu
Department website: <http://www.geography.osu.edu/>

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Certificate Requirements

Required: 12 hours

Introductory Courses

Required course
GEOG 5210 "Fundamentals of GIS" (3)

Elective courses

Choose no more than two of the following courses
[GEOG 5101 "GIS Professionalism and Ethics" \(3\)](#)
GEOG 5103 "Intermediate Spatial Data Analysis" (3)
(prereq: GEOG 4103 or program coordinator permission)
GEOG 5200 "Cartography and Map Design" (3)
GEOG 5225 "Geographic Applications of Remote Sensing" (3)

Specialty Courses

Choose at least one from the following courses
GEOG 5201 "GeoVisualization" (3) (prereq: GEOG 5200)
GEOG 5212 "Spatial Database Design for GIS" (3)
(prereq: GEOG 5210 & CSE 1114 or GEOG 5210 & program coordinator permission)
GEOG 5222 "GIS Algorithms and Programming" (3) (prereq: GEOG 5212)
GEOG 5223 "Design and Implementation of GIS" (3) (prereq: GEOG 5222)
GEOG ~~5226~~ "Spatial Simulation and Modeling in GIS" (3)

Geographic Information Science and Technology Graduate Certificate program guidelines

Credit hours required: A minimum of 12 credit hours. Credit hours must be at the 5000-level or above. All courses applied toward the certificate must be completed at Ohio State.

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College of Arts and Sciences
Curriculum and Assessment Services
306 Dulles Hall, 230 Annie & John Glenn Ave.
<http://artsandsciences.osu.edu>

Appr CAA 11-20-2019

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COLLEGE OF ARTS AND SCIENCES

MASTER OF GEOGRAPHIC INFORMATION SCIENCE AND TECHNOLOGY
33 CREDIT HOURS

STUDENT NAME: _____

STUDENT OSU EMAIL: _____

PROGRAM ADVISOR NAME: _____

REQUIRED CORE COURSE (4)

Course (Hours)	Use for Degree	Course Grade	Term/Year Completed
GEOG 5101 (3)	YES		
GEOG 5200 (3)	YES		
GEOG 5210 (3)	YES		
GEOG 5225 (3)	YES		

INTERMEDIATE ELECTIVE COURSES (CHECK 3 COURSES IN THE "USE FOR DEGREE" COLUMN)

Course (Hours)	Use for Degree	Course Grade	Term/Year Completed
GEOG 5103 (3)			
GEOG 5201 (3)			
GEOG 5212 (3)			
GEOG 5222 (3)			
GEOG 5229 (3)			

ADVANCED ELECTIVE COURSES (CHECK 3 COURSES IN THE "USE FOR DEGREE" COLUMN)

Course (Hours)	Use for Degree	Course Grade	Term/Year Completed
GEOG 6222 (3)			
GEOG 6223 (3)			
GEOG 6226 (3)			
GEOG 6286 (3)			
PUBAFRS 7555 (3)			

CAPSTONE PROJECT (1)

Course (Hours)	Use for Degree	Course Grade	Term/Year Completed
GEOG 6299 (3)	YES		

SUBSTITUTIONS APPROVED: _____

PROGRAM ADVISOR SIGNATURE _____

DATE _____

COLLEGE OF ARTS AND SCIENCES
MASTER OF GEOGRAPHIC INFORMATION SCIENCE AND TECHNOLOGY
33 CREDIT HOURS

STUDENT NAME: _____

STUDENT OSU EMAIL: _____

PROGRAM ADVISOR NAME: _____

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REQUIRED CORE COURSE (4)

Course Number and Title (Hours)	For Degree	Grade	Term Completed
GEOG 5101 GIS Professionalism and Ethics (3)	YES		
GEOG 5200 Cartography and Map Design (3)	YES		
GEOG 5210 Fundamentals of GIS (3)	YES		
GEOG 5225 Geographic Application of Remote Sensing (3)	YES		

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INTERMEDIATE ELECTIVE COURSES (CHECK 3 COURSES IN THE "FOR DEGREE" COLUMN)

Course Number and Title (Hours)	For Degree	Grade	Term Completed
GEOG 5103 Intermediate Spatial Data Analysis (3)			
GEOG 5201 GeoVisualization (3)			
GEOG 5212 Geospatial Databases for GIS (3)			
GEOG 5222 GIS Algorithms and Programming (3)			
GEOG 5229 Emerging Topics in GIS (3)			

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ADVANCED ELECTIVE COURSES (CHECK 3 COURSES IN THE "FOR DEGREE" COLUMN)

Course Number and Title (Hours)	For Degree	Grade	Term Completed
GEOG 5223 Design and Implementation of GIS (3)			
GEOG 6223 Web GIS Development (3)			
GEOG 6226 Spatial Simulation and Modeling in GIS (3)			
GEOG 6286 Geodemography: GIS in Social Science and Business Research (3)			
PUBAFRS 7555 Project Management in the Public Sector (3)			

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CAPSTONE PROJECT (1)

Course Number and Title (Hours)	For Degree	Grade	Term Completed
GEOG 6299 GIS Capstone Project (3)	YES		

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PROGRAM ADVISOR SIGNATURE _____

DATE _____

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