APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the *Guide and Format for Curriculum Proposals* published by the UCCC. Both cover sheet and proposal should be submitted to UCCC Mail Stop 9702 (281 Garner Hall), Phone: 325-9410.

College Arts & Sciences **Department:** Geosciences

Contact Person: Andrew Mercer **Mail Stop:** _____ **E-mail:** aem35@msstate.edu

Nature of Change: Addition of Distance **Date Initiated:** _____

Current Degree Program Name: Bachelor of Science

Current Major: Geosciences

Current Concentration(s): Broadcast Meteorology

Current Campus(es): Starkville

New Degree Program Name: Bachelor of Science **Effective Date:** 08/15/20

Semester Fall **Year** 2024

Proposed Major: Geosciences

Proposed Concentration(s): Broadcast Meteorology

Proposed Campus(es): Starkville

Summary of Proposed Changes:

Technical Change: Remove GR 4623 from the Broadcast Meteorology curriculum and add 3 hours of specified electives to ensure 124 hour requirement. This was missed on a previous submission and is a correction so it should be processed as a technical change.

Approved:	Date:
John Rodgers, Professor and Head — Digitally signed by John Rodgers, Professor and Head, Date: 2024.07.02 15:15:12 -05'00'	07/02/2024
Department Head	
Director of Academic Quality	
Chair, College or School Curriculum Committee	
Dean of College or School	07/09/2024
Digitally signed by Andy Perkins, Date: 2024.07.19 15:48:36 -05'00'	7/19/24
Chair, University Committee on Courses and Curricula	
Chair, Graduate Council (if applicable)	
Chair, Deans Council	August 2nd, 2024

2. Degree Modification Outline Form

CURRENT Degree Description	PROPOSED Degree Description
Degree: Bachelor of Science Major: Geosciences	No change
B.S. and M.S. degrees in Geoscience and a PhD in Earth and Atmospheric Sciences are offered with emphasis in sub-disciplines described below. Minors are offered at both B.S. and M.S. levels in Geoscience. The Department of Geosciences strives for an integrated, interdisciplinary study of the whole Earth from the bachelor's through the Ph.D. levels. Course offerings are grouped into six areas of emphasis: 1. Professional Geology - physical, biological, and chemical aspects of the Earth; 2. Geography - distribution of physical features and human interaction with the Earth; 3. Environmental Geoscience - conservation and management of Earth resources and remediation of natural and human hazards; 4. Broadcast Meteorology/Climatology - radio/television weathercasting; 5. Professional Meteorology/Climatology - atmospheric processes and climatic variability; and 6. Geographic Information Systems - spatial analysis and topological relationships of geographic data. Within the six areas of emphasis outlined above, a student may further focus interests in a variety of areas including: water resources, hydrogeology and environmental clean-up and monitoring, petroleum exploration and services, construction and urbanization involving geological applications, geophysics and geochemistry, sedimentary geology and paleontology, Quaternary geology and karst processes, Geographic Information Systems, human or physical geography, or analysis and prediction of weather and climate. A minimum of 40 credit hours in geoscience courses is required for the geoscience degree. A grade of C or higher is required on all departmental courses to satisfy graduation requirements. Students in the professional geology concentration are required to take the Association of State Board of Geologists Fundamentals of Geology (ASBOG-FG) exam. A minor in geoscience consists of a minimum of 14 credit hours in courses numbered 2000 and above, in addition to the first year courses. The following are examples of variations within a geoscience minor. A minor with a Geology emphasis should include physical (GG 1113/GG 1111) and historical geology (GG 1123/GG 1121) plus 14 hours 2000 and above for a total of 22 hours; for an Environmental Geoscience	No change.

emphasis, physical and historical geology with laboratory plus introduction to environmental geology (GG 3133) and other course work 2000 and above for a total of 22 hours; for emphasis in Geography, cultural geography (GR 2013), world geography (GR 1123) and other course work 2000 and above; and Broadcast Meteorology/climatology, physical geography (GR 1113/GR 1111) and either introduction to environmental geology (GG 3133) or conservation of natural resources (GR 3113) and other course work 2000 and above for a total of 21 hours. Minors in Geoscience are also available at the M.S. level.

Three educational enhancement awards and eight scholarships are available to students majoring in Geoscience, namely the F.F. Mellen, Forrest W. Pace, and Summer Geology Educational Enhancement awards, and the George W. Bishop, the Paul H. Dunn Memorial, the Ronald Greeley Memorial, the Gordon W. Gulmon, the Sistrunk Endowed, the Mark Worthey Endowed, the Alex Herbst Memorial, and the Dr. Charles Wax Endowed Scholarship. The three Educational Enhancement Awards provide financial assistance to those enrolled in field geology camp during the summer. The eight scholarships are awarded to students for academic excellence. All are restricted to students at junior or senior rank, with the exception of the Sistrunk Endowed, the Worthey Endowed, and the Greeley Memorial Scholarships. The Dr. Charles Wax Endowed Scholarship is only for graduate students.

The Department of Geosciences encourages involvement in Sigma Gamma Epsilon, a nationally recognized honorary Earth Science society and Gamma Theta Upsilon, international honor society in geography. Requirements for acceptance in Sigma Gamma Upsilon include a grade-point average of at least 3.00 in 12 or more hours of geoscience and a cumulative average of 2.67. Requirements for Gamma Theta Upsilon are a grade-point average of at least 3.3 overall as well as in at least 9 hours of "GR" courses.

The Department of Geosciences participates with the National Weather Association (NWA) and the American Meteorological Society (AMS) in training individuals for the respective “Weathercaster Seals of Approval”. The Office of the State Climatologist and the MSU Climatology Laboratory are housed in the Department and are strongly involved in programs for all students with interests in professional and broadcast meteorology and climatology.

Distance Learning Programs
The Department of Geosciences offers four distance learning programs listed below that can lead to a degree in Geosciences. Each program utilizes recorded lectures and

the Internet for course instruction. Broadcast and Operational Meteorology Program. A three-year, 17 course, 53 credit hour program of study that can lead to a B.S. degree in Geosciences. Primarily for individuals in television weather. Applied Meteorology Program. A two-year, 12 course 36 credit hour program of study that leads to a M.S. degree in Geosciences. Primarily for individuals with meteorological, environmental, or hazards-related careers. Environmental Geoscience Program. A 30-credit hour, non-thesis program that leads to a M.S. degree in Geosciences. It is designed for students interested in graduate study of a broad cross-section of the geosciences and is offered both on-campus and through distance education.			
PROPOSED CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
English Composition: EN 1103 English Composition I or EN 1104 Expanded English Composition I EN 1113 English Composition II or EN 1173 Accelerated Composition II	 3 3	English Composition: EN 1103 English Composition I or EN 1104 Expanded English Composition I EN 1113 English Composition II or EN 1173 Accelerated Composition II	 3 3
Foreign Language: Foreign Language I Foreign Language II	 3 3	Foreign Language: Foreign Language I Foreign Language II	 3 3
Humanities: Literature– A&S core History– A&S core	 3 3	Humanities: Literature– A&S core History– A&S core	 3 3
Mathematics: Specified in each concentration area		Mathematics: Specified in each concentration area	
Fine Arts: A&S core Note: CO 1503 required for Broadcast Meteorology concentration.	 3	Fine Arts: A&S core Note: CO 1503 required for Broadcast Meteorology concentration.	 3
Natural Sciences: Specified in each concentration area		Natural Sciences: Specified in each concentration area	
Social Sciences: GR 1123 Introduction to World Geography A&S core [1] Note: CO 1403 required for Broadcast Meteorology concentration.	 3 3	Social Sciences: GR 1123 Introduction to World Geography A&S core [1] Note: CO 1403 required for Broadcast Meteorology concentration.	 3 3

Major Core		Major Core	
Introductory Course with lab:		Introductory Course with lab:	
GG 1113 Survey of Earth Sciences I and GG 1111 Earth Sciences Laboratory I or GR 1113 Physical Geography and GR 1111 Physical Geography Laboratory	4	GG 1113 Survey of Earth Sciences I and GG 1111 Earth Sciences Laboratory I or GR 1113 Physical Geography and GR 1111 Physical Geography Laboratory	4
Oral Communication: CO 1003 Fundamentals of Public Speaking or CO 1013 Introduction to Communication	3	Oral Communication: CO 1003 Fundamentals of Public Speaking or CO 1013 Introduction to Communication	3
Choose one of the following concentrations:		Choose one of the following concentrations:	
Professional Geology Concentration (GEOL)		Professional Geology Concentration (GEOL)	
The Professional Geology concentration is designed to prepare students for entry-level employment in the environmental consulting industry; state and federal government agencies; as well as energy and extraction industries, such as oil, gas, and coal. The Professional Geology degree also prepares students for application to a graduate program.		The Professional Geology concentration is designed to prepare students for entry-level employment in the environmental consulting industry; state and federal government agencies; as well as energy and extraction industries, such as oil, gas, and coal. The Professional Geology degree also prepares students for application to a graduate program.	
Mathematics		Mathematics	
MA 1713 Calculus I	3	MA 1713 Calculus I	3
MA 1723 Calculus II	3	MA 1723 Calculus II	3
Natural Sciences		Natural Sciences	
CH 1213 Chemistry I	3	CH 1213 Chemistry I	3
CH 1211 Investigations in Chemistry I	1	CH 1211 Investigations in Chemistry I	1
CH 1223 Chemistry II	3	CH 1223 Chemistry II	3
CH 1221 Investigations in Chemistry II	1	CH 1221 Investigations in Chemistry II	1
PH 1113 General Physics I	3	PH 1113 General Physics I	3
PH 1123 General Physics II	3	PH 1123 General Physics II	3
PH 1133 General Physics III or GG 4233 Applied Geophysics or GG 4633 Introduction to Geochemistry	3	PH 1133 General Physics III or GG 4233 Applied Geophysics or GG 4633 Introduction to Geochemistry	3
Concentration Requirements		Concentration Requirements	
GG 1121 Earth Sciences II Laboratory	1	GG 1121 Earth Sciences II Laboratory	1
GG 1123 Survey of Earth Sciences II	3	GG 1123 Survey of Earth Sciences II	3
GG 3133 Introduction to Environmental Geology	3	GG 3133 Introduction to Environmental Geology	3
GG 3613 Water Resources	3	GG 3613 Water Resources	3
GG 4114 Mineralogy	4	GG 4114 Mineralogy	4
GG 4124 Petrology	4	GG 4124 Petrology	4
GG 4201 Practicum on Paleontology	1	GG 4201 Practicum on Paleontology	1
GG 4304 Principles of Sedimentary Deposits I	4	GG 4304 Principles of Sedimentary Deposits I	4
GG 4333 Geowriting [2]	3	GG 4333 Geowriting [2]	3
GG 4414 Structural Geology	4	GG 4414 Structural Geology	4
GG 4443 Principles of Sedimentary Deposits II	3	GG 4443 Principles of Sedimentary Deposits II	3
GG 4503 Geomorphology	3	GG 4503 Geomorphology	3
		GR 4303 Principles of GIS	3

GR 4303 Principles of GIS GR 4633 Statistical Climatology or ST 2113 Introduction to Statistics or ST 3123 Introduction to Statistical Inference	3	GR 4633 Statistical Climatology or ST 2113 Introduction to Statistics or ST 3123 Introduction to Statistical Inference	3
GG 4446 Summer Geology Field Camp [3]	6	GG 4446 Summer Geology Field Camp [3]	6
Choose one of the following: GG 4133 Principles of Paleoecology GG 4203 Principles of Paleobiology GG 4113 Micropaleontology	3	Choose one of the following: GG 4133 Principles of Paleoecology GG 4203 Principles of Paleobiology GG 4113 Micropaleontology	3
Choose one of the following: GG 1113 Planetary Geology GG 3603 Introduction to Oceanography GG 4523 Coastal Environments GR 1133 Weather and Climate	3	Choose one of the following: GG 1113 Planetary Geology GG 3603 Introduction to Oceanography GG 4523 Coastal Environments GR 1133 Weather and Climate	3
Choose three additional courses from the following lists: Environmental Professional Emphasis GG 4153 Engineering Geology GG 4613 Physical Hydrogeology GG 4633 Introduction to Geochemistry Petroleum Professional Emphasis GG 4063 Earth and Atmospheric Energy Resources GG 4233 Applied Geophysics GG 4433 Subsurface Methods Geospatial Professional Emphasis GR 4313 Advanced GIS GR 4333 Remote Sensing of the Physical Environment GR 4343 Advanced Remote Sensing in Geosciences GR 4363 Geographic Information Systems Programming	9	Choose three additional courses from the following lists: Environmental Professional Emphasis GG 4153 Engineering Geology GG 4613 Physical Hydrogeology GG 4633 Introduction to Geochemistry Petroleum Professional Emphasis GG 4063 Earth and Atmospheric Energy Resources GG 4233 Applied Geophysics GG 4433 Subsurface Methods Geospatial Professional Emphasis GR 4313 Advanced GIS GR 4333 Remote Sensing of the Physical Environment GR 4343 Advanced Remote Sensing in Geosciences GR 4363 Geographic Information Systems Programming	9
Total Hours	120	Total Hours	120
Environmental Science Concentration (ENGS) The Environmental Geoscience concentration is designed to be a flexible degree that provides a broad cross-section of the geosciences with emphasis on environmental stewardship. The degree can be molded with the assistance of an academic adviser to suit individual goals of		Environmental Science Concentration (ENGS) The Environmental Geoscience concentration is designed to be a flexible degree that provides a broad cross-section of the geosciences with emphasis on environmental stewardship. The degree can be molded with the assistance of an academic adviser to suit individual goals of students that do not readily	

students that do not readily align with other geosciences curricula. The degree prepares students to work as a geoscientist or prepares students for graduate school in the geosciences or other related fields.		align with other geosciences curricula. The degree prepares students to work as a geoscientist or prepares students for graduate school in the geosciences or other related fields.	
Mathematics MA 1323 Trigonometry	3	Mathematics MA 1323 Trigonometry	3
Natural Sciences A&S core science with lab A&S core science – lab not required	6-8 3	Natural Sciences A&S core science with lab A&S core science – lab not required	6-8 3
Concentration Requirements GG 3603 Introduction to Oceanography GG 3133 Introduction to Environmental Geology or GR 3113 Conservation of Natural Resources GG 3613 Water Resources GG 4333 Geowriting [2] GR 1133 Weather and Climate GR 1131 Weather and Climate Laboratory GR 4303 Principles of GIS ST 2113 Introduction to Statistics	3 3 3 3 3 1 3 3	Concentration Requirements GG 3603 Introduction to Oceanography GG 3133 Introduction to Environmental Geology or GR 3113 Conservation of Natural Resources GG 3613 Water Resources GG 4333 Geowriting [2] GR 1133 Weather and Climate GR 1131 Weather and Climate Laboratory GR 4303 Principles of GIS ST 2113 Introduction to Statistics	3 3 3 3 3 1 3 3
GG/GR 4000+ electives	18	GG/GR 4000+ electives	18
Choose one of the following: GG 1113 Planetary Geology GG 3133 Introduction to Environmental Geology or GR 3113 Conservation of Natural Resources (if not taken as a Concentration course) GG 4523 Coastal Environments GG 4543 Community Engagement in Geosciences GR 2313 Maps and Remote Sensing GR 4113 Political Ecology GR 4813 Natural Hazards and Processes	3	Choose one of the following: GG 1113 Planetary Geology GG 3133 Introduction to Environmental Geology or GR 3113 Conservation of Natural Resources (if not taken as a Concentration course) GG 4523 Coastal Environments GG 4543 Community Engagement in Geosciences GR 2313 Maps and Remote Sensing GR 4113 Political Ecology GR 4813 Natural Hazards and Processes	3
General Electives Consult advisor	33-35	General Electives Consult advisor	33-35
Total Hours	124	Total Hours	124
Geography Concentration (GPHY) This program prepares students to work in a variety of fields across the social and natural sciences. A geography degree can provide the multidisciplinary foundation necessary for careers in government, environmental management,		Geography Concentration (GPHY) This program prepares students to work in a variety of fields across the social and natural sciences. A geography degree can provide the multidisciplinary foundation necessary for careers in government, environmental management, education, planning,	

education, planning, and development. People with geography degrees have found employment with: the US Census Bureau, National Parks Service, the National Forest Service, and other federal government agencies, non-profit organizations focusing on community and international development, the environmental assessment industry, the GIS/geospatial industry, environmental and historical interpretation, and urban and regional planning. Our students also receive a strong foundation for further graduate studies in geography and related disciplines.		and development. People with geography degrees have found employment with: the US Census Bureau, National Parks Service, the National Forest Service, and other federal government agencies, non-profit organizations focusing on community and international development, the environmental assessment industry, the GIS/geospatial industry, environmental and historical interpretation, and urban and regional planning. Our students also receive a strong foundation for further graduate studies in geography and related disciplines.	
		Mathematics	
Mathematics	3	MA 1323 Trigonometry	3
MA 1323 Trigonometry			
		Natural Sciences	
Natural Sciences	6-8	A&S core science with lab	6-8
A&S core science with lab	3	A&S core science – lab not required	3
A&S core science – lab not required			
		Concentration Requirements	
Concentration Requirements	3	GG 4333 Geowriting [2]	3
GG 4333 Geowriting [2]	3	GR 1133 Weather and Climate	3
GR 1133 Weather and Climate	1	GR 1131 Weather and Climate Laboratory	1
GR 1131 Weather and Climate Laboratory	3	GR 2013 Human Geography	3
GR 2013 Human Geography	3	GR 2313 Maps and Remote Sensing	3
GR 2313 Maps and Remote Sensing	3	GR 4203 Geography of North America	3
GR 4203 Geography of North America	3	GR 4303 Principles of GIS	3
GR 4303 Principles of GIS	3	ST 2113 Introduction to Statistics	3
ST 2113 Introduction to Statistics			
	15	GG/GR 4000+ electives	15
GG/GR 4000+ electives			
	12	Choose four of the following:	12
Choose four of the following:		GG 3133 Introduction to Environmental Geology	
GG 3133 Introduction to Environmental Geology		GG 3603 Introduction to Oceanography	
GG 3603 Introduction to Oceanography		GG 3613 Water Resources	
GG 3613 Water Resources		GG 4523 Coastal Environments	
GG 4523 Coastal Environments		GR 3113 Conservation of Natural Resources	
GR 3113 Conservation of Natural Resources		GR 4113 Political Ecology	
GR 4113 Political Ecology		GR 4813 Natural Hazards and Processes	
GR 4813 Natural Hazards and Processes			
	12	Choose four of the following:	12
Choose four of the following:		GR 4123 Urban Geography	
GR 4123 Urban Geography		GR 4213 Geography of Latin America	
GR 4213 Geography of Latin America		GR 4223 Geography of Europe	
GR 4223 Geography of Europe		GR 4233 Geography of Asia	
GR 4233 Geography of Asia		GR 4243 Geography of Russia and the Former Soviet Republics	
GR 4243 Geography of Russia and the Former Soviet Republics		GR 4253 Geography of Africa	
GR 4253 Geography of Africa		GR 4263 Geography of the South	
GR 4263 Geography of the South		GR 4283 Geography of the Islamic World	
GR 4283 Geography of the Islamic World			
	15-17	General Electives	15-17
General Electives		Consult Advisor	
Consult Advisor			

Total Hours	124	Total Hours	124
Broadcast Meteorology (BMP) This program focuses on preparing students for a career in radio/television weathercasting. The coursework does not meet the requirements for the American Meteorological Society's Certified Broadcast Meteorological Seal of Approval because it lacks some of the math and physics requirements. Individuals can, however, be qualified to earn the National Weather Association Seal of Approval after working in the industry for three years.		Broadcast Meteorology (BMP) This program focuses on preparing students for a career in radio/television weathercasting. The coursework does not meet the requirements for the American Meteorological Society's Certified Broadcast Meteorological Seal of Approval because it lacks some of the math and physics requirements. Individuals can, however, be qualified to earn the National Weather Association Seal of Approval after working in the industry for three years.	
Mathematics	3	Mathematics	
MA 1713 Calculus I	3	MA 1713 Calculus I	3
MA 1723 Calculus II		MA 1723 Calculus II	3
Natural Sciences	3	Natural Sciences	
CH 1043 Survey of Chemistry I	3	CH 1043 Survey of Chemistry I	3
PH 1113 General Physics I (w/ lab)	3	PH 1113 General Physics I (w/ lab)	3
PH 1123 General Physics II (w/ lab)		PH 1123 General Physics II (w/ lab)	3
Concentration Requirements	3	Concentration Requirements	
GR 1133 Weather and Climate	1	GR 1133 Weather and Climate	3
GR 1131 Weather and Climate Laboratory	1	GR 1131 Weather and Climate Laboratory	1
GR 3011 Weather Analysis	3	GR 3011 Weather Analysis	1
GR 4423 Weather Forecasting I	3	GR 4423 Weather Forecasting I	3
GR 4433 Weather Forecasting II	3	GR 4433 Weather Forecasting II	3
GR 4623 Physical Meteorology	*3*	GR 4633 Statistical Climatology	3
GR 4633 Statistical Climatology		or ST 3123 Introduction to Statistical Inference	
or ST 3123 Introduction to Statistical Inference	3	GR 4643 Physical Meteorology and Climatology I	3
GR 4643 Physical Meteorology and Climatology I	3	GR 4693 Physical Meteorology and Climatology II	3
GR 4693 Physical Meteorology and Climatology		GR 4733 Synoptic Meteorology	
II	3	GR 4783 Satellite Meteorology	3
GR 4733 Synoptic Meteorology	3	or GR 4883 Radar Meteorology	3
GR 4783 Satellite Meteorology		GR 4823 Dynamic Meteorology I	
or GR 4883 Radar Meteorology	3	GR 4963 Mesoscale Meteorology	3
GR 4823 Dynamic Meteorology I	3	GR 4502 Practicum in Broadcast Meteorology I	3
GR 4963 Mesoscale Meteorology	2	GR 4512 Practicum in Broadcast Meteorology II	2
GR 4502 Practicum in Broadcast Meteorology I	2	GR 4522 Practicum in Broadcast Meteorology III	2
GR 4512 Practicum in Broadcast Meteorology II	2	GR 4532 Practicum in Broadcast Meteorology IV	2
GR 4522 Practicum in Broadcast Meteorology III	2	CO 2413 Intro to News Writing	2
GR 4532 Practicum in Broadcast Meteorology IV	3	CO 3313 News Writing for the Electronic Media [2]	3
CO 2413 Intro to News Writing	3	CO 2333 Television Production	3
CO 3313 News Writing for the Electronic Media [2]	3	CO 3333 Advanced Television Production	3
CO 2333 Television Production	3		3
CO 3333 Advanced Television Production		Choose three of the following:	9
	9	GG 3603 Introduction to Oceanography	
		GG 3613 Water Resources	
Choose three of the following:		GG 4523 Coastal Environments	
GG 3603 Introduction to Oceanography		GR 3113 Conservation of Natural Resources	

GG 3613 Water Resources		GR 4203 Geography of North America	
GG 4523 Coastal Environments		GR 4303 Principles of GIS	
GR 3113 Conservation of Natural Resources		GR 4553 Computer Methods in Meteorology	
GR 4203 Geography of North America		GR 4563 Aviation Meteorology	
GR 4303 Principles of GIS		GR 4613 Applied Climatology	
GR 4553 Computer Methods in Meteorology		GR 4813 Natural Hazards and Processes	
GR 4563 Aviation Meteorology		GR 4783 Satellite Meteorology	
GR 4613 Applied Climatology		or GR 4883 Radar Meteorology (if not taken as a Concentration course)	
GR 4813 Natural Hazards and Processes		GR 4933 Dynamic Meteorology II	
GR 4783 Satellite Meteorology		GR 4943 Tropical Meteorology	
or GR 4883 Radar Meteorology (if not taken as a Concentration course)			
GR 4933 Dynamic Meteorology II		General Electives	
GR 4943 Tropical Meteorology		Consult advisor	**14**
General Electives	*11*	Total Hours	124
Consult advisor			
Total Hours	124		

Professional Meteorology (PMET)		Professional Meteorology (PMET)	
This program focuses on the study of atmospheric processes and climatic variability. Upon completion of the program (operational emphasis), students will have met the coursework requirements for the National Weather Service, the private meteorology sector, or continue their education in graduate school. Students choosing the program with the broadcast emphasis can also work for the National Weather Service and also earn the American Meteorological Society's Certified Broadcast Meteorologist Seal of Approval.		This program focuses on the study of atmospheric processes and climatic variability. Upon completion of the program (operational emphasis), students will have met the coursework requirements for the National Weather Service, the private meteorology sector, or continue their education in graduate school. Students choosing the program with the broadcast emphasis can also work for the National Weather Service and also earn the American Meteorological Society's Certified Broadcast Meteorologist Seal of Approval.	
		Mathematics	
Mathematics	3	MA 1713 Calculus I	3
MA 1713 Calculus I	3	MA 1723 Calculus II	3
MA 1723 Calculus II	3	MA 2733 Calculus III	3
MA 2733 Calculus III	3	MA 2743 Calculus IV	3
MA 2743 Calculus IV	3	MA 3253 Differential Equations I	3
MA 3253 Differential Equations I			
		Natural Sciences	
Natural Sciences	3	CH 1213 Chemistry I	3
CH 1213 Chemistry I	1	CH 1211 Investigations in Chemistry I	1
CH 1211 Investigations in Chemistry I	3	PH 2213 Physics I	3
PH 2213 Physics I	3	PH 2223 Physics II	3
PH 2223 Physics II			
		Concentration Requirements	
Concentration Requirements	3	GG 4333 Geowriting [2, 4]	3
GG 4333 Geowriting [2, 4]		or CO 3313 News Writing for the Electronic Media	
or CO 3313 News Writing for the Electronic Media	3	GR 1133 Weather and Climate	3
GR 1133 Weather and Climate	1	GR 1131 Weather and Climate Laboratory	1
GR 1131 Weather and Climate Laboratory	1	GR 3011 Weather Analysis	1

GR 3011 Weather Analysis	3	GR 4423 Weather Forecasting I	3
GR 4423 Weather Forecasting I	3	GR 4433 Weather Forecasting II	3
GR 4433 Weather Forecasting II	3	GR 4633 Statistical Climatology	3
GR 4633 Statistical Climatology		or ST 3123 Introduction to Statistical Inference	
or ST 3123 Introduction to Statistical Inference	3	GR 4643 Physical Meteorology and Climatology I	3
GR 4643 Physical Meteorology and Climatology I	3	GR 4693 Physical Meteorology and Climatology II	3
GR 4693 Physical Meteorology and Climatology		GR 4733 Synoptic Meteorology	
II	3	GR 4783 Satellite Meteorology	3
GR 4733 Synoptic Meteorology	3	or GR 4883 Radar Meteorology	3
GR 4783 Satellite Meteorology		GR 4823 Dynamic Meteorology I	
or GR 4883 Radar Meteorology	3	GR 4933 Dynamic Meteorology II	3
GR 4823 Dynamic Meteorology I	3	GR 4963 Mesoscale Meteorology	3
GR 4933 Dynamic Meteorology II	3		3
GR 4963 Mesoscale Meteorology		Choose three of the following:	
	9	GG 3603 Introduction to Oceanography	9
Choose three of the following:		GG 3613 Water Resources	
GG 3603 Introduction to Oceanography		GR 4363 Geographic Information Systems	
GG 3613 Water Resources		Programming [2]	
GR 4363 Geographic Information Systems		GG 4523 Coastal Environments	
Programming [2]		GR 3113 Conservation of Natural Resources	
GG 4523 Coastal Environments		GR 4203 Geography of North America	
GR 3113 Conservation of Natural Resources		GR 4303 Principles of GIS	
GR 4203 Geography of North America		GR 4553 Computer Methods in Meteorology	
GR 4303 Principles of GIS		GR 4563 Aviation Meteorology	
GR 4553 Computer Methods in Meteorology		GR 4613 Applied Climatology	
GR 4563 Aviation Meteorology		GR 4813 Natural Hazards and Processes	
GR 4613 Applied Climatology		GR 4783 Satellite Meteorology	
GR 4813 Natural Hazards and Processes		or GR 4883 Radar Meteorology (if not taken as	
GR 4783 Satellite Meteorology		a Concentration course)	
or GR 4883 Radar Meteorology (if not taken as		GR 4943 Tropical Meteorology	
a Concentration course)			
GR 4943 Tropical Meteorology		Specified Electives	
		Consult advisor	
Specified Electives	18		18
Consult advisor		Total Hours	
	124		124
Total Hours			
Geographic Information Systems (GIS)		Geographic Information Systems (GIS)	
This program provides a fundamental background in the geospatial sciences, including geographic information systems, remote sensing, spatial analysis, database management, geospatial modeling, and spatial programming. The geospatial sciences are applicable to many different fields and will prepare students for careers in: government agencies, urban and regional planning, environmental management, intelligence, natural areas management, local government, transportation planning and many others. This program also prepares students for further graduate studies in geospatial disciplines.		This program provides a fundamental background in the geospatial sciences, including geographic information systems, remote sensing, spatial analysis, database management, geospatial modeling, and spatial programming. The geospatial sciences are applicable to many different fields and will prepare students for careers in: government agencies, urban and regional planning, environmental management, intelligence, natural areas management, local government, transportation planning and many others. This program also prepares students for further graduate studies in geospatial disciplines. Mathematics	

Mathematics MA 1323 Trigonometry	3	MA 1323 Trigonometry	3
Natural Sciences	6-8	Natural Sciences A&S core science with lab	6-8
A&S core science with lab A&S core science – lab not required	3	A&S core science – lab not required	3
Concentration Requirements	3	Concentration Requirements GR 1133 Weather and Climate	3
GR 1133 Weather and Climate	1	GR 1131 Weather and Climate Laboratory	1
GR 1131 Weather and Climate Laboratory	3	GR 2313 Maps and Remote Sensing	3
GR 2313 Maps and Remote Sensing	3	GR 3303 Survey of Geospatial Technologies	3
GR 3303 Survey of Geospatial Technologies	3	GR 3113 Conservation of Natural Resources	3
GR 3113 Conservation of Natural Resources	3	GR 4303 Principles of GIS	3
GR 4303 Principles of GIS	3	GR 4313 Advanced GIS	3
GR 4313 Advanced GIS	3	GR 4323 Cartographic Sciences	3
GR 4323 Cartographic Sciences	3	GR 4333 Remote Sensing of the Physical Environment	3
GR 4333 Remote Sensing of the Physical Environment	3	GR 4343 Advanced Remote Sensing in Geosciences	3
GR 4343 Advanced Remote Sensing in Geosciences	3	GR 4353 Geodatabase Design	3
GR 4353 Geodatabase Design	3	GR 4363 Geographic Information Systems Programming	3
GR 4363 Geographic Information Systems Programming	3	GR 4373 Web GIS	3
GR 4373 Web GIS	1	GR 4411 Remote Sensing Seminar	1
GR 4411 Remote Sensing Seminar	3	GG 4333 Geowriting [2]	3
GG 4333 Geowriting [2]	4	CSE 1284 Introduction to Computer Programming	4
CSE 1284 Introduction to Computer Programming	3	ST 3123 Introduction to Statistical Inference or GR 4633 Statistical Climatology	3
ST 3123 Introduction to Statistical Inference or GR 4633 Statistical Climatology	6	Choose two of the following: GG 3133 Introduction to Environmental Geology GG 3603 Introduction to Oceanography GG 3613 Water Resources GG 4523 Coastal Environments GR 4813 Natural Hazards and Processes	6
Choose two of the following: GG 3133 Introduction to Environmental Geology GG 3603 Introduction to Oceanography GG 3613 Water Resources GG 4523 Coastal Environments GR 4813 Natural Hazards and Processes			
GR/GG 4000+ Electives	12	GR/GG 4000+ Electives	12
General Electives Consult advisor	10-12	General Electives Consult advisor	10-12
Total Hours	124	Total Hours	124
Broadcast Meteorology (Distance Learning only)		Broadcast Meteorology (Distance Learning only)	
Mathematics Math– A&S core	3	Mathematics Math– A&S core	3
Natural Sciences A&S core science with lab	6-8	Natural Sciences A&S core science with lab	6-8
A&S core science – lab not required	3	A&S core science – lab not required	3
Concentration Requirements GR 1133 Weather and Climate	3	Concentration Requirements GR 1133 Weather and Climate	3
GR 1131 Weather and Climate Laboratory	1	GR 1131 Weather and Climate Laboratory	1
GR 4443 Weather Prediction I	3	GR 4443 Weather Prediction I	3

GR 4453 Weather Prediction II	3	GR 4453 Weather Prediction II	3
GR 4473 Numerical Weather Prediction	3	GR 4473 Numerical Weather Prediction	3
GR 4613 Applied Climatology	3	GR 4613 Applied Climatology	3
GR 4623 Physical Meteorology	3	GR 4623 Physical Meteorology	3
GR 4633 Statistical Climatology	3	GR 4633 Statistical Climatology	3
GR 4643 Physical Meteorology and Climatology I	3	GR 4643 Physical Meteorology and Climatology I	3
GR 4713 Synoptic Meteorology I or GR 4733 Synoptic Meteorology	3	GR 4713 Synoptic Meteorology I or GR 4733 Synoptic Meteorology	3
GR 4753 Satellite and Radar Meteorology	3	GR 4753 Satellite and Radar Meteorology	3
GR 4813 Natural Hazards and Processes	3	GR 4813 Natural Hazards and Processes	3
GR 4913 Thermodynamic Meteorology or GR 4823 Dynamic Meteorology I	3	GR 4913 Thermodynamic Meteorology or GR 4823 Dynamic Meteorology I	3
GR 4923 Severe Weather or GR 4963 Mesoscale Meteorology	3	GR 4923 Severe Weather or GR 4963 Mesoscale Meteorology	3
GG 3603 Introduction to Oceanography	3	GG 3603 Introduction to Oceanography	3
GG 3613 Water Resources	3	GG 3613 Water Resources	3
GG 4333 Geowriting [2] or CO 3313 News Writing for the Electronic Media	3	GG 4333 Geowriting [2] or CO 3313 News Writing for the Electronic Media	3
General Electives	27-29	General Electives	27-29
Total Hours	124	Total Hours	124
Note: Students must complete 31 upper division hours in A&S in residence at MSU. [1] Social Science courses must cover two disciplines and come from A&S core. [2] Satisfies Jr/Sr Writing requirement [3] From an approved university. Consult advisor. [4] CO 3313 must be taken for the Broadcast Meteorology concentration.		Note: Students must complete 31 upper division hours in A&S in residence at MSU. [1] Social Science courses must cover two disciplines and come from A&S core. [2] Satisfies Jr/Sr Writing requirement [3] From an approved university. Consult advisor. [4] CO 3313 must be taken for the Broadcast Meteorology concentration.	

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July 8, 2024

College of Arts and Sciences and the University Courses and Curriculum Committees

Mississippi State University

RE: Department of Geosciences – Technical Change – Undergraduate BOMP Curriculum Correction

Dear Curriculum Committee,

The Department of Geosciences Curriculum Committee has reviewed and supports the proposed technical changes to the Geosciences Broadcast and Operational Meteorology Program (BOMP) undergraduate curriculum. These corrections will update the curriculum information outlined below:

- Delete GR 4623 Physical Meteorology from the broadcast meteorology curriculum requirements
- Add 3 hours to specified electives (11 up to 14) to make up the 3 hours

We fully support these technical changes to correct the Geosciences BOMP undergraduate curriculum.

If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully,

Sarah Lalk, PhD — Digitally signed by Sarah Lalk, PhD Date: 2024.07.08 21:16:04 -04'00'

Sarah Lalk (Committee Chair)

Andrew Mercer — Digitally signed by Andrew Mercer Date: 2024.07.09 13:34:46 -05'00'

Andrew Mercer (Committee Member)

Boniface O Fosu — Digitally signed by Boniface O Fosu Date: 2024.07.09 06:03:29 -05'00'

Boniface Fosu (Committee Member)

Varun Paul — Digitally signed by Varun Paul Date: 2024.07.09 11:13:57 -05'00'

Varun Paul (Committee Member)

Brian Williams — Digitally signed by Brian Williams Date: 2024.07.09 12:29:58 -05'00'

Brian Williams (Committee Member)

Kelsey Crane — Digitally signed by Kelsey Crane Date: 2024.07.09 09:39:35 -05'00'

Kelsey Crane (Committee Member)

Cc: Dr. John C. Rodgers, Department Head of Geosciences