

**ARTICULATION AGREEMENT
BETWEEN
THE METROPOLITAN COMMUNITY COLLEGES
AND
UNIVERSITY OF MISSOURI**

OVERVIEW:

This formal program articulation agreement is made and entered into by the University of Missouri, hereinafter referred to as MU, and the Junior College District of Metropolitan Kansas City, Missouri, hereinafter referred to as MCC. By this agreement MCC and MU express a shared commitment to increasing opportunities for student access to and success in higher education. By clarifying transfer policies and procedures which assure articulation between programs, the institutions seek to assist students in making a seamless transfer from the associate to the baccalaureate degree.

PURPOSE:

This agreement provides students who have earned an **Associate in Arts** the opportunity to complete a **Bachelor of Science in Soil, Environmental and Atmospheric Sciences with an emphasis in Environmental Science** at MU. Any Metropolitan Community College student who has earned an Associate in Arts is guaranteed that MU will accept designated freshman and sophomore elective credits and all general education credits and will apply such to the Bachelor of Science in Soil, Environmental and Atmospheric Sciences degree in a manner consistent with the treatment of native students.

CONDITIONS OF TRANSFER:

Section I: Admissions and Matriculation

MCC students maintaining continuous enrollment under this agreement will be afforded the same treatment and protection as MU native students enrolled under a specific catalog.

Criteria for acceptance into MU for transfer students is based upon their past academic performance and the admissions requirements for the Bachelor of Science degree in Soil, Environmental and Atmospheric Sciences.

MCC, upon request of students, will provide verification of completed courses to MU through its Office of Admissions.

The transcripts of students transferring from MCC will be evaluated by the MU Office of Admissions.

Transfer students from MCC will have access to financial aid and student services on the same basis as native students.

Minimum grade standards for academic progress and graduation from MCC will be subject to no further review by MU.

MU will apply the same academic progress and graduation standards to MCC transfer students as those applicable to native students at MU.

Section II: Transfer of Credit

A maximum of 89 credit hours will be accepted from MCC to be applied to the Bachelor of Science in Soil, Environmental and Atmospheric Sciences. A minimum of 52 hours must be completed at MU.

Thirty of the last 36 semester hours of credit must be completed at MU (residency requirement)

Transfer students with an AA degree from MCC, upon acceptance into the Environmental Science emphasis area at MU, will have junior standing at MU.

Section III: Program Plan

Students falling under this program articulation agreement will be responsible for successfully completing the following requirements for the Bachelor of Science in Soil, Environmental, and Atmospheric Science with an emphasis in Environmental Science.

MCC Coursework

American Institutions - 6 credits

Complete two courses from the following: (One must be HIST.)

HIST 120 United States History to 1865 (3)

HIST 121 United States History Since 1865 (3)

POLS 135 Introduction to Political Science (3)

POLS 136 Introduction to American National Politics (3)

POLS 137 Introduction to State and Local Politics (3)

Communications - 9 credits

ENGL 101 Composition and Reading I (3)

ENGL 102 Composition and Reading II (3)

SPDR 100 Fundamentals of Speech (3)

Humanities - 9 credits

Complete one 3-credit course in each of any three different areas. One of the courses must be in literature or philosophy.

Art History - any course

Literature - any course

Humanities - any course

MUSI 108 Music Appreciation (3)

MUSI 116 Evolution of Jazz (3)

MUSI 160 Music of the World's Cultures (3)

Philosophy - any course

SPDR 106 Theater Appreciation (3)

SPDR 112 Oral Interpretation of Literature (3)

SPDR 114 Theater and Western World (3)

SPDR 128 Introduction to Film (3)

SPDR 228 African Film (3)

Mathematics - 3 credits

MATH 120 College Algebra (3)

Sciences - 10 credits

BIOL 101 General Biology (5)

CHEM 111 General College Chemistry I (5)

Social Sciences - 6 credits

ECON 210 Macroeconomics (3) or ECON 211 Microeconomics (3)

SOC 160 Sociology (3)

Computer - 3 credits

CSIS 110 Technology and Information Management (3) or higher-numbered CSIS course

Electives - 16 – 43 credits

Complete at least 16 credits of electives to total a minimum of 62 hours required for the AA degree. A maximum of 89 hours may be taken at MCC for the BS in Soil, Environmental, and Atmospheric Science with an Emphasis in Environmental Science.

Complete the following. *These courses must be completed at either MCC or MU.*

<u>MCC Course</u>	<u>MU Requirement</u>
SOCI 16 Social Problems (3)	RU SOC 2010 Leadership in Today's World (3) or RU SOC 2225 Science, Technology, & Society (3)
MATH 115 Statistics (3)	STAT 2530 Statistical Methods in Natural Resources (3)
MATH 180 Analytic Geometry & Calculus I (5)	MATH 1500 Analytic Geometry and Calculus I (5) or MATH 1400 Calculus for Social and Natural Sciences (3)
BIOL 104 General Botany (5)	BIO SC 1200 General Botany with Lab (5)
CHEM 112 General College Chemistry II (5)	CHEM 1330 General Chemistry III w/Lab (3)
GEOL 101 Physical Geology (5) or GEOL 103 Environmental Geology (5)	GEOL 1100 Principles of Geology w/Lab (4) or GEOL 1200 Environmental Geology w/Lab (4)
PHYS 130 General Physics I (5) or PHY 220 Engineering Physics I (5)	PHYSCS 1210 College Physics I (4) or PHYSCS 2750 University Physics I (5) or ENV SC 4305 Environmental Soil Physics (3) and ENV SC 4306 Environmental Soil Physics Lab (2)
GEOG 110 Meteorology (4)	ATM SC 1050 Introductory Meteorology (3)
GEOG 120 Intro to Geographic Information Systems (3) or GEOG 220 GIS Database and Design (3)	AGRIC 1111 Comp.& Information Systems (3) or GEOG 4840 Geographic Information Systems I (3) or CMP SC 1040 Intro to Problem Solving and Prog. (3) or CMP SC 1050 Algorithm Design and Prog. I (3) or NAT R 4325 Introduction to GIS (3)
BIOL 102 Environmental Science (5)	ENV SC 1100 Introduction to Environ. Science (3)

Minimum total credits required for the A.A. degree - 62 credits

MU Coursework

BIO SC 3650 General Ecology (5) (WI) or FOREST 4320 Forest Ecology (5)
NAT R 4353 Natural Resource Policy/Administration (3)
SOIL 2100 Introduction to Soils (3)
SOIL 2106 Soil Science Laboratory (2)
ENV SC 3290 Soils and the Environment (3) (WI)
ENV SC 3500 Pollutant Fate and Transport (3)
ENV SC 4320 Hydrologic and Water Quality Modeling (3)
NAT R 4970 Natural Resources Practicum (3) or ATM SC 4990 Daily Analysis and Forecast Interpretation (3)

Water Quality Track

F&W 3400 - Water Quality & Natural Resource Management (3) Sp

ENV SC 4940 - Environmental Science Internship (3) FSpS

Select 5 classes from the following list (must take courses from at least two departments) (15)

AGSM 4420 Surface Water Management FSp	FOREST 4390 - Watershed Mgmt & Water Qual F
ATM SC 3600 Climates of the World Sp	GEOG 4630 - Fluvial Geomorphology
ATM SC 4400 Micrometeorology F	GEOG 4830 - Remote Sensing F
BIO EN 4150 Soil and Water Conservation Engr F	GEOG 4840 – Geographic Info Systems I FSp
CV ENG 3702 Hydrology FSp	GEOG 4940 - Geographic Info Systems II Sp
CV ENG 4200 Remote Sensing of the Environmt	GEOL 4100 – Ground Hydrogeology F
ENV SC 3330 – Land Use Management Sp	GEOL 4110 - Karst Hydrology
ENV SC 4305 - Environmental Soil Physics F	GEOL 4300 - Intro to Low-Temp Geochem Sp
ENV SC 4312 - Environmental Soil Microbiol Sp	NAT R 4325 - Introduction to GIS Sp
ENV SC 4318 – Environmental Soil Chemistry Sp	PLNT S 4720 - Aquatic Entomology
F&W 4100 - Limnology (3-4 credits) F	SOIL 4308 - Soil Conservation Sp
F&W 4800 - Environmental Toxicology Sp	SOIL 4313 - Soil Fertility and Plant Nutrition Sp
FOREST 4360 - Forest Information Systems F	SOIL 4320 - Genesis of Soil Landscapes (4 cr) F

Land Management Track

ENV SC 3330 – Land Use Management (3) Sp

ENV SC 4940 - Environmental Science Internship (3) FSpS

Select 5 classes from the following list (must take courses from at least two departments) (15)

AGSM 4360 - Precision Ag Science and Tech Sp	FOREST 4390 - Watershed Mgmt & Water Qual F
AGSM 4420 - Surface Water Management FSp	GEOG 3610 - Physical Geography of the US FSp
ATM SC 3600 - Climates of the World Sp	GEOG 3630 - Process Geomorphology F
ATM SC 4400 - Micrometeorology F	GEOG 4710 - Spatial Analysis in Geography F
BIO EN 4150 - Soil and Water Cons Engr F	GEOG 4830 - Remote Sensing F
CV ENG 4200 - Remote Sensing of the Environ	GEOG 4840 – Geographic Info Systems I FSp
ENV SC 4305 - Environmental Soil Physics F	GEOG 4940 - Geographic Information Systems II
ENV SC 4312 - Environmental Soil Microbiology Sp	SpNAT R 4325 - Introduction to GIS Sp
ENV SC 4318 – Environmental Soil Chemistry Sp	PLNT S 3270 - Forage Crops F
F&W 4800 - Environmental Toxicology Sp	PLNT S 3275 - Grain Crops F
FOREST 3207 - Forest Fire Control & Use (2 cr) F	RU SOC 4341 - Building Communities from the Grassroots FSp
FOREST 4330 - Practice of Silviculture Sp	SOIL 4308 - Soil Conservation Sp
FOREST 4370 - Wildland Fire Management Sp	SOIL 4313 - Soil Fertility and Plant Nutrition Sp
FOREST 4360 - Forest Information Systems F	SOIL 4320 - Genesis of Soil Landscapes (4 cr) F

Air Quality Track

ATM SC 2720 - Weather Briefing (1) Sp
ATM SC 4550 - Atmospheric Physics (3) F
ATM SC 4949 - Internship in Meteorology (3) FSpS

Select 5 classes from the following list (must take courses from at least two departments) (15)

ATM SC 3600 - Climates of the World Sp	CHEM 4280 - Environmental Chemistry
ATM SC 4400 - Micrometeorology F	CV ENG 3200 - Fund of Environl Engr (4 cr) FSp
ATM SC 4500 – Advanced Meteorological Observation & Instrumentation F	CV ENG 3702 - Hydrology (4 credits) FSp
ATM SC 4310 - Atmospheric Thermodyn (4 cr) F	CV ENG 4200 - Remote Sensing of the Environ
ATM SC 4650 - Long Range Forecasting Sp	GEOG 4830 - Remote Sensing
ATM SC 4710 - Synoptic Meteorology I (4 cr) F	GEOG 4840 - Geographic Info Systems I FSp
BIO EN 4150 - Soil & Water Conservation Engr F	GEOG 4940 - Geographic Info Systems II Sp
CH ENG 4311 - Chemodynamics Sp	NAT R 4325 - Intro to GIS Sp
CH ENG 4312 - Air Pollution Control F	

Total Hours for BS in Soil, Atmospheric, and Environmental Science with an Emphasis in Environmental Science – 128-135

NOTE: *Some MCC courses receive more credit hours than equivalent MU courses; therefore, the total number of hours required for graduation may exceed 128 hours. A minimum of 52 credit hours must be taken at MU.*

TERMS OF AGREEMENT:

This agreement is made and entered into in the academic year 2010-2011 and remains in force unless changed in writing by mutual agreement of both parties. The agreement may be amended at any time with the approval of both parties and is subject to regular review to assure currency with the respective degree requirements. Should either party desire to discontinue this agreement, advance notification of two years will be required.

SIGNATURES:

The Junior College District of Metropolitan Kansas City, Missouri (MCC) and University of Missouri Columbia enter into this program articulation agreement leading from the Associate in Arts to the Bachelor of Science in Soil, Environmental and Atmospheric Sciences with an emphasis in Environmental Science by the affixing of signatures of the chief executive officers of both institutions.

Mark James
Chancellor
The Jr. College District of Metropolitan
Kansas City, Missouri

Date

Brady J. Deaton, Ph.D.
Chancellor
University of Missouri

Date

Thomas Payne
Dean, College of Agriculture, Food, and Natural Resources
University of Missouri

Date

ADDENDUM

Transfer Guide for a Bachelor of Science in Soil, Environmental, and Atmospheric Science with an Emphasis in Environmental Science

University of Missouri		Metropolitan Community College	
Course	Credits	Course	Credits
1. University Requirements (35 credits)			
ENGLISH 1000 Exposition and Argumentation FSpS	3	ENGL 102 Composition and Reading II	3
Course to fulfill State Law Requirement (History 1100, 1200, or 1400 or Political Science 1100 or 1700)	3	HIST 120 US History to 1865 or HIST 121 US History Since 1865 or POLS 136 Intro to American National Politics	3
AG EC 1041 Applied Microeconomics FSp or AG EC 2070 - Environmental Economics & Policy (WI) Sp	3	ECON 211 Microeconomics or ECON 210 Macroeconomics	3
RU SOC 1000 - Rural Sociology FSp or RU SOC 1120 - Population and Ecology FSp	3	SOCI 160 Sociology	3
RU SOC 2010 - Leadership in Today's World FSp or RU SOC 2225 – Science, Technology, & Society Sp	3	SOC 163 Social Problems	3
COMMUN 1200 – Public Speaking FSpS or AG ED 2220 - Verbal Communication in Agriculture, Food & Natural Res. FSp	3	SPDR 100 Fundamentals of Speech	3
Humanistic Studies and Fine Arts electives	6	Choose 2 courses. One must be in literature or philosophy. Art History - any course Literature - any course Humanities - any course MUSI 108 Music Appreciation MUSI 116 Evolution of Jazz MUSI 160 Music of the World's Cultures Philosophy - any course SPDR 106 Theater Appreciation SPDR 112 Oral Interpretation of Literature SPDR 128 Introduction to Film SPDR 228 African Film	6
MATH 1100 - College Algebra FSpS	3	MATH 120 College Algebra	3
STAT 2530 - Statistical Methods in Natural Resources Sp	3	MATH 115 Statistics	3
CHEM 1310 - General Chemistry I FSpS and CHEM 1320 - General Chemistry II w/Lab FSpS	5	CHEM 111 General College Chemistry I	5
2. Departmental Quantitative Skills (3 credits)			
MATH 1500 – Analytical Geometry and Calculus I FSpS or MATH 1400 - Calculus for Social and Natural Sciences I FSpS	3-5	MATH 180 Analytic Geometry and Calculus I	5
<i>Recommended elective for Air Quality Track - MATH 1700 – Calculus II FSp</i>			
3. Departmental Sciences (29-30 credits)			
<u>Biological Science</u> (15 credits)			
BIO SC 1200 - General Botany w/Lab F	5	BIOL 104 General Botany	5
BIO SC 1500 - Introduction to Biological Systems w/Lab FSpS	5	BIOL 101 General Biology	5
BIO SC 3650 - General Ecology (WI) F or FOREST 4320 - Forest Ecology (WI) F	5	To be completed at MU	5
<u>Chemistry</u> (3 credits)			
CHEM 1330 - General Chemistry III w/Lab (3 credits) FSpS	3	CHEM 112 General College Chemistry II	5
<i>Recommended electives -</i> CHEM 2050 - Introduction to Organic Chemistry w/Lab) F or CHEM 2100 - Organic Chemistry I FSpS and CHEM 2110 - Organic Chemistry II FSpS and CHEM 2130 - Organic Chemistry Lab I FSp			
<u>Geology</u> (4 credits)			
GEOL 1100 - Principles of Geology w/Lab FSpS or GEOL 1200 - Environmental Geology w/Lab FSp	4	GEOL 101 Physical Geology GEOL 103 Environmental Geology	5
<u>Physics</u> (4 or 5 credits)			
PHYSICS 1210 - College Physics I FSpS or or PHYSICS 2750 - University Physics I FSpS or ENV SC 4305 – Environmental Soil Physics F and ENV SC 4306 – Environmental Soil Physics Laboratory F	4-5	PHYS 130 General Physics I or PHYS 220 Engineering Physics I	5

University of Missouri		Metropolitan Community College	
Course	Credits	Course	Credits
<i>Recommended elective for Air Quality Track -</i> PHYSICS 2760 - University Physics II FSp			
<u>Social Sciences (3 credits)</u>			
AG EC 4356 - Environmental Law & Policy F <u>or</u> NAT R 4353 - Natural Resource Policy/Administration Sp <u>or</u> P R & TR 3231 - Principles of Interpretative Outdoor Recreation (3 credits) Sp	3	To be completed at MU	3
4. Departmental Requirements (26 credits)			
<u>Atmospheric Science/Soil Science (8 credits)</u>			
ATM SC 1050 - Introduction to Meteorology FSp	3	GEOG 110 Meteorology	4
SOIL 2100 - Introduction to Soils FSp	3	To be completed at MU	3
SOIL 2106 - Soil Science Laboratory FSp	2	To be completed at MU	2
<u>Computer Science (3 credits)</u>			
AGRIC 1111 - Computing and Information Systems I FSp <u>or</u> GEOG 4840 - Geographic Information Systems I FSp <u>or</u> CMP SC 1040 - Intro to Problem Solving and Programming FSpS <u>or</u> CMP SC 1050 - Algorithm Design and Programming I FSpS <u>or</u> NAT R 4325 - Introduction to GIS (3 credits) Sp	3	GEOG 120 Intro to Geographic Information Systems <u>or</u> GEOG 220 GIS Database and Design	3
<u>Environmental Science Emphasis Area Requirements (12 credits)</u>			
ENV SC 1100 - Introduction to Environmental Science F	3	BIOL 102 Environmental Science	5
ENV SC 3290 - Soils and the Environment (WI) F	3	To be completed at MU	3
ENV SC 3500 – Pollutant Fate and Transport Sp	3	To be completed at MU	3
ENV SC 4320 - Hydrologic and Water Quality Modeling Sp	3	To be completed at MU	3
<u>Capstone Experience (3 credits)</u>			
NAT R 4970 - Natural Resources Practicum Sp <u>or</u> ATM SC 4990 – Daily Analysis and Forecast Interpretation Sp	3	--	--
5. Concentration Specific (21-22 credits) Students can choose one of three tracks – water quality, land management, or air quality.			
<u>Water Quality Track</u>			
F&W 3400 - Water Quality & Natural Resource Management (3 credits) Sp	3	To be completed at MU	3
ENV SC 4940 - Environmental Science Internship (3 credits) FSpS	3	To be completed at MU	3
Select 5 classes from the following list (must take courses from at least two departments)	15	To be completed at MU	3
AGSM 4420 Surface Water Management FSp ATM SC 3600 Climates of the World Sp ATM SC 4400 Micrometeorology F BIO EN 4150 Soil and Water Conservation Engr F CV ENG 3702 Hydrology FSp CV ENG 4200 Remote Sensing of the Environmt ENV SC 3330 – Land Use Management Sp ENV SC 4305 - Environmental Soil Physics F ENV SC 4312 - Environmental Soil Microbiol Sp	ENV SC 4318 – Environmental Soil Chemistry Sp F&W 4100 - Limnology (3-4 credits) F F&W 4800 - Environmental Toxicology Sp FOREST 4360 - Forest Information Systems F FOREST 4390 - Watershed Mgmt & Water Qual F GEOG 4630 - Fluvial Geomorphology GEOG 4830 - Remote Sensing F GEOG 4840 – Geographic Info Systems I FSp GEOG 4940 - Geographic Info Systems II Sp	GEOG 4100 – Ground Hydrogeology F GEOG 4110 - Karst Hydrology GEOG 4300 - Intro to Low-Temp Geochem Sp NAT R 4325 - Introduction to GIS Sp PLNT S 4720 - Aquatic Entomology SOIL 4308 - Soil Conservation Sp SOIL 4313 - Soil Fertility and Plant Nutrition Sp SOIL 4320 - Genesis of Soil Landscapes (4 cr) F	
<u>Land Management Track</u>			
ENV SC 3330 – Land Use Management Sp	3	To be completed at MU	3
ENV SC 4940 - Environmental Science Internship FSpS	3	To be completed at MU	3
Select 5 classes from the following list (must take courses from at least two departments)	15	To be completed at MU	15
AGSM 4360 - Precision Ag Science and Tech Sp AGSM 4420 - Surface Water Management FSp ATM SC 3600 - Climates of the World Sp ATM SC 4400 - Micrometeorology F BIO EN 4150 - Soil and Water Cons Engr F CV ENG 4200 - Remote Sensing of the Environ ENV SC 4305 - Environmental Soil Physics F ENV SC 4312 - Environmental Soil Microbiology Sp ENV SC 4318 – Environmental Soil Chemistry Sp F&W 4800 - Environmental Toxicology Sp	FOREST 3207 - Forest Fire Control & Use (2 cr) F FOREST 4330 - Practice of Silviculture Sp FOREST 4370 - Wildland Fire Management Sp FOREST 4360 - Forest Information Systems F FOREST 4390 - Watershed Mgmt & Water Qual F GEOG 3610 - Physical Geography of the US FSp GEOG 3630 - Process Geomorphology F GEOG 4710 - Spatial Analysis in Geography F GEOG 4830 - Remote Sensing F	GEOG 4840 – Geographic Info Systems I FSp GEOG 4940 - Geographic Information Systems II Sp NAT R 4325 - Introduction to GIS Sp PLNT S 3270 - Forage Crops F PLNT S 3275 - Grain Crops F RU SOC 4341 - Building Communities from the Grassroots FSp SOIL 4308 - Soil Conservation Sp SOIL 4313 - Soil Fertility and Plant Nutrition Sp SOIL 4320 - Genesis of Soil Landscapes (4 cr) F	

University of Missouri		Metropolitan Community College	
Course	Credits	Course	Credits
Air Quality Track			
ATM SC 2720 - Weather Briefing (1 credit) Sp	1	To be completed at MU	1
ATM SC 4550 - Atmospheric Physics (3 credits) F	3	To be completed at MU	3
ATM SC 4949 - Internship in Meteorology (3 credits) FSpS	3	To be completed at MU	3
Select 5 classes from the following list (must take courses from at least two departments)	15	To be completed at MU	15
ATM SC 3600 - Climates of the World Sp ATM SC 4400 - Micrometeorology F ATM SC 4500 – Advanced Meteorological Observation & Instrumentation F ATM SC 4310 - Atmospheric Thermodyn (4 cr) F ATM SC 4650 - Long Range Forecasting Sp ATM SC 4710 - Synoptic Meteorology I (4 cr) F	BIO EN 4150 - Soil & Water Conservation Engr F CH ENG 4311 - Chemodynamics Sp CH ENG 4312 - Air Pollution Control F CHEM 4280 - Environmental Chemistry CV ENG 3200 - Fund of Environl Engr (4 cr) FSp CV ENG 3702 - Hydrology (4 credits) FSp	CV ENG 4200 - Remote Sensing of the Environ GEOG 4830 - Remote Sensing GEOG 4840 - Geographic Info Systems I FSp GEOG 4940 - Geographic Info Systems II Sp NAT R 4325 - Intro to GIS Sp	
6. Electives (12-14 credits) Additional hours required for the AA degree and remaining hours from university, quantitative, science, and department to complete 128 credit hours total requirement.			
Elective	3	American Institutions (required for AA degree) HIST 120 United States History to 1865 HIST 121 United States History Since 1865 POLS 135 Introduction to Political Science POLS 136 Introduction to American National Politics POLS 137 Introduction to State and Local Politics	3
Elective	3	Communication (required for AA degree) ENGL 101 - Composition and Reading I	3
Elective	3	Humanity (required for AA degree): Art History - any course Literature - any course Humanities - any course MUSI 108 Music Appreciation MUSI 116 Evolution of Jazz MUSI 160 Music of the World's Cultures Philosophy - any course SPDR 106 Theater Appreciation SPDR 112 Oral Interpretation of Literature SPDR 128 Introduction to Film SPDR 228 African Film	3
Elective	3	Computer (required for AA degree) CSIS 110 - Technology and Information Management or higher numbered CSIS course	3
Minimum Total Hours for BS in Soil, Atmospheric, and Environmental Science with an Emphasis in Environmental Science	128	NOTE: Some MCC courses receive more credit hours than equivalent MU courses; therefore, the total number of hours required for graduation may exceed 128 hours. A minimum of 52 credit hours must be taken at MU.	