ARTICULATION AGREEMENT

Montgomery College
Associate of Science in Mathematics

900 Hungerford Drive
Rockville, MD 20850

and

Shepherd University
Bachelor of Science in Mathematics

301 N King Street
Shepherdstown, WV 25443

Montgomery College (hereafter referred to as MC), a community college in Montgomery County, Maryland and Shepherd University (hereafter referred to as SU) a state higher education institution in Shepherdstown, West Virginia agree to offer an articulated program leading to the award of an associate's degree in Mathematics and a bachelor's degree in Mathematics. MC course agreements outlined below ensure that the transfer student will matriculate with junior standing.

I. PURPOSE

The purpose of this Articulation Agreement (the "Agreement") is to establish collaboration between SU and MC to facilitate the transfer and degree completion of students earning the Associate of Science Mathematics at MC to the Bachelor of Science in Mathematics at Shepherd University. This Agreement provides a systematic plan for students to continue their higher education beyond their Associate's Degree from MC. The following general principles guide the operation of this Agreement:

II. ADMISSIONS

Applicants successfully completing the articulated program with a 2.8 or better grade point average who have not matriculated at any other institution of higher education will be guaranteed transfer admission to SU upon completion of the SU admissions application process.

III. ACCEPTANCE OF CREDITS

A maximum of 72 credit hours from MC will be allowed toward fulfillment of the 120 credit hours required for baccalaureate completion.

A. General Education Credits:
All courses meeting general education requirements at MC will transfer to SU to satisfy lower-level general education requirements. A completed general education program shall transfer as indicated in Appendix A.

B. Credits Accepted from Other Institutions:
If courses from other institutions or other sources of academic credit are evaluated by MC and applied toward the Associate's Degree, the student must submit the score report to be evaluated by SU. Credit will be applied as determined by an SU evaluation.

C. Non-Direct Classroom Credits:
There is currently no maximum number of credits that will be accepted by SU toward degree requirements from non-direct classroom instruction (including CLEP, Co-op Education, AP, and other nationally recognized standardized examination scores). The policy on the transferring in of non-direct classroom credit can be found in SU's online catalog under "Miscellaneous Admission Information". Tech Prep credits will not transfer to SU. Credit awarded for experiential learning ("life experience") is not recognized by, and is not transferable to SU.

IV. SCHOLARSHIPS AND FINANCIAL AID

MC students who have completed an Associate's Degree will be given every consideration for financial assistance and will be eligible to compete for need and non-need based academic scholarships at SU.

V. BENEFITS TO STUDENTS

SU offers the following benefits for MC students who transfer under this Agreement:
Application fee waiver
Transfer Advising Access
Transfer Orientation
Guaranteed Admission with completed A.S. in Mathematics and a 2.8 GPA
Eligibility for T.O.P.S. program which could result in either a 25% or 35% tuition discount

VI. PROMOTION/OUTREACH

MC and SU agree to publicize this Agreement via, but not limited to marketing materials and information sessions. SU's logo and transfer pathway will be featured on MC's transfer agreements website. MC and SU agree to collaborate to ensure successful transfer day visits, and advising sessions. Any and all marketing promotional, or publication material developed pursuant to this Agreement prepared or developed by one party must be reviewed and approved in writing by the other party prior to use. Neither party shall use the name or mark of the other party without prior consent.

VII. REVIEW OF AGREEMENT

A. MC and SU agree to monitor the performance of this Agreement and to review biennially.

B. SU will establish a mechanism to provide information on the academic progress of the MC student enrolled as a result of this Agreement, including but not limited to statistical data of aggregated student performance. Specific student outcomes may only be reported in the event of a student consenting to such in writing, and Shepherd will not have any obligation to solicit students to agree to such release of their information.

C. MC and SU agree to communicate program changes in a timely manner to avoid disruption of student progress toward degree completion.

VIII. TERMINATION

The Agreement may be terminated by either party for due cause and after adequate notice in writing to all parties. Termination of the Agreement will not affect any students currently enrolled at MC in the major at the time of termination if they remain continuously enrolled to graduation and enroll at SU within 6 months of their graduation from MC, and they shall be able to transfer credits pursuant to this Agreement.

IX. APPENDICES

As part of this agreement, the following have been included:

A. Course-by-course articulations, including satisfaction of general education requirements at both MC and SU

B. A Suggested Transfer Pathway, showing an example of how students can complete an Associate's Degree from MC and a Bachelor's Degree from SU.

C. An academic advising sheet showing requirements for a completed associate's degree in Mathematics at MC. MC Students will follow this curriculum chart to ensure completion of their degree and a smooth transition into SU.

In witness thereof, the parties hereto have executed or approved this Agreement on the date entered below.

Entered into this third day of September, 2014.

For Shepherd University:

Suzanne Shipley, Ph.D.
President

Christopher Ames, Ph.D.
Vice President for Academic Affairs

Colleen Nolan, Ph.D.
Dean of the School of Natural Sciences and Math

For Montgomery College:

DeRionne P. Pollard, Ph.D.
President

Sanjay Rai, Ph.D.
Senior Vice President for Academic Affairs

Ben Nicholson, Ph.D.
Chair of Mathematics and Statistics

Appendix A, Course by Course Articulation Guide

Courses equivalencies listed below are part of an articulated program leading to the award of an associate's degree in **Mathematics** and a bachelor's degree in **Mathematics**

MC Course ID (fall 2014 ID)	*MC Course Title*	*MC Credit*	*Transfer Equivalent*	*Course Title at Transfer Institution*	*Credit*	*Notes (ex. Gen Ed, Major Req.)*
EC201 (ECON201)	Principles of Economics I	3	ECON205	Prin. of Macroeconomics	3	MC-BSSD SU-SS
MA181 (MATH181)	Calculus I	4	MATH207	Calculus I	4	
MA182 (MATH182)	Calculus II	4	MATH208	Calculus II	4	
MA280 (MATH280)	Multivariable Calculus	4	MATH309	Calculus III	4	
MA282 (MATH282)	Differential Equations	3	MATH310	Differential Equations	4	
MA284 (MATH284)	Linear Algebra	4	MATH307	Intro to Linear Algebra	3	
PH161 (PHYS161) PH262 (PHYS162) PH263 (PHYS263	Mechanics and Heat Electricity and Magnetism Waves, Optics and Modern Physics	3 4 4	PHYS221 PHYS222	General Physics I General Physics II	4 4	
ES102 (ENES102)	Statics	3	ENGR241	Engineering Statics	3	
ES221 (ENES221)	Dynamics	3	ENGR242	Engineering Dynamics	3	
ES100 (ENES100)	Intro to Engineering Design	3	ENGR101	Engineering I	3	Not required for AS degree
ES232 (ENES232)	Thermodynamics	3	ENGR301	Engineering Thermodynamics	3	Not required for AS degree
ES240 (ENES240)	Scientific and Engineering Computation	3	ENGR102	Engineering II	3	
EN101 (ENGL101)	Intro College Writing	3	ENGL101	Written English I	3	EN101 and EN102 required for SU
EN102 (ENGL102) or EN109 (ENGL103)	Critical Reading, Writing and Research Critical Reading, Writing and Research at Work	3	ENGL102	Writing and Literature	3	Core-Writing
HLTH	Health Foundation	1		Elective	1	
Arts Dist.	Arts Distribution	3	AR Core	Art Core	3	
Humanities	Humanities Distribution	3	HU Core	Humanities Core	3	
BSSD	Behavioral/Soc. Sci. Dist.	3	SSCore	Social Sci. Core	3	
SP108 (COMM108) or SP112 (COMM112)	Introduction to Communication or Business and Professional Speech Communication	3	COMM202	Fundamentals of Speech or Elective	3	
Total Credits		67			64	

Appendix B, Suggested Transfer Pathway

Montgomery College A.S. in Mathematics to Shepherd University B.S. in Mathematics

Year One – Montgomery College

Fall Semester	Cr
PHYS161 Mechanics and Heat	3
ENGL101 Intro to College Writing*	3
Arts Distribution**	3
MATH181 Calculus I	4
Behavioral and Social Sciences, not EC**	3
Total Credits	**16**

Spring Semester	Cr
Speech Foundation, SP108 or SP112	3
ENGL102 or ENGL103	3
MATH182 Calculus II	4
PHYS262 Electricity and Magnetism	4
ECON201 Principles of Economics I	3
Total Credits	**17**

Year Two – Montgomery College

Fall Semester	Cr
ENES102 Statics	3
Humanities Distribution**	3
MATH280 Multivariable Calculus	4
PHYS263 Waves, Optics & Modern Physics	4
Total Credits	**14**

Spring Semester	Cr
HLTH Foundation	1
ENES240 Scientific and Eng. Computation	3
MATH282 Differential Equations	3
ENES221 Dynamics	3
MATH284 Linear Algebra	4
Total Credits	**14**

Apply to graduate from Montgomery College with an Associate of Science in Mathematics
ENES100 Intro to Engineering Design and ENES232 Thermodynamics not required for A.S., but are required for B.S. and can be taken at MC prior to transfer.

*ENGL101 and ENGL102/ENGL103 required for Shepherd University
** Choose one art, humanities or social science that also meets the global and cultural requirement

Year Three – Shepherd University

Fall Semester	Cr
MATH 254 Discrete Mathematics	3
MATH 314 - Statistics	3
ENGR 221 - Intro to Electrical Engineering	3
MATH 312 - Intro to Abstract Algebra	3
MATH 424 - Foundations of Geometry	3
Total Credits	**15**

Spring Semester	Cr
MATH 318 Numerical Analysis	3
MATH 410 Advanced Calculus	3
MATH 354 Operations Research	3
Math/Engr electives	3
Core Curriculum	3
Total Credits	**15**

Year Four – Shepherd University

Fall Semester	Cr
MATH 329 Mathematical Modeling	3
MATH 409 – Intro to Complex Variables	3
MATH 489 Math Capstone Project I	1
MATH414 History & Development of Math	3
Core Curriculum	3
GSPE 210 Wellness	3
Total Credits	**16**

Spring Semester	Cr
MATH 321 Probability/Statistics	3
MATH 490 Math Capstone Proj II	2
Math/Engr electives	3
Math/Engr electives	3
Core Curriculum	3
Core Curriculum	3
Total Credits	**17**

Notes: The courses in blue and an additional 9 credits of Mathematics and engineering electives are required for the Traditional Mathematics major; for Industrial Mathematics Concentration, complete 12 credits of additional ENGR coursework of ENGR 200 or above and 6 credits of MATH courses 300 or above.

Contact:

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(304) 876-5368

Appendix C, Montgomery College Academic Advising Sheet

A.S. in Mathematics to B.S. in Mathematics

Name:	Date:	ID#	
Foundation Courses	**COURSE**	**HRS**	**GRADE**
English Foundation (ENGL102 or ENGL103)	ENGL102	3	
Math Foundation, Calculus I	MATH181	4	
Health Foundation (1-credit HLTH course)	HLTH	1	
Speech Foundation (COMM108 or COMM112)	COMM	3	
Distribution Courses	**COURSE**	**HRS**	**GRADE**
Arts Distribution**			
Humanities Distribution**			
Behavioral and Social Sciences Distribution, Principles of Econ I	ECON201	3	
Behavioral and Social Sciences Distribution, select non-ECON**			
Natural Sciences Lab Distribution, Electricity and Magnetism	PHYS262	4	
Natural Sciences Lab Distribution, Waves, Optics and Modern Physics	PHYS263	4	
Program Requirements and Electives	**COURSE**	**HRS**	**GRADE**
Mechanics and Heat	PHYS161	3	
Calculus II	MATH182	4	
Multivariable Calculus	MATH280	4	
Differential Equations	MATH282	3	
Linear Algebra	MATH284	4	
Elective, Statics	ENES102	3	
Elective, Dynamics	ENES221	3	
Elective, Scientific and Engineering Computation	ENES240	3	
Introduction to College Writing	ENGL101*	3	
Introduction to Engineering Design (not required for the A.S.)	ENES100†	3	
ENEE or ENES Elective, Thermodynamics (not required for the A.S.)	ENES232†	3	

Global & Cultural Perspectives Requirement:**

Apply to graduate from Montgomery College with an Associate of Science in Mathematics
†ENES100 Intro to Engineering Design and ENES232 Thermodynamics not required for A.S., but are required for B.S. and can be taken at MC prior to transfer.

*ENGL101 and ENGL103 required for Shepherd University

** Choose one arts, humanities or social science that also meets the global and cultural requirement

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