ARTICULATION AGREEMENT
AMENDMENT

Hagerstown Community College
Associate of Science in Engineering Science

Frostburg State University
Bachelor of Science in Engineering

Entered into this _28th_____day of _September_____, 2020.
(date) (month)

Ronald Nowaczyk, Ph.D.
President
Frostburg State University

James Klauber, Ph.D.
President
Hagerstown Community College

Michael Mathias, Ph.D.
Interim Provost
Frostburg State University

C. David Warner, Ph.D.
Vice President of Academic Affairs and
Student Services
Hagerstown Community College

Thomas K. Hixson, Ph.D.
Dean, College of Liberal Arts and Sciences
Frostburg State University

Laurie Montgomery
Director, Mathematics and Science Division
Hagerstown Community College

Jamil Abdo, Ph.D.
Chair, Department of Physics and Engineering
Frostburg State University

This agreement will be reviewed annually.

ARTICULATION AGREEMENT

Hagerstown Community College, Associate of Science in Engineering Science and Frostburg State University, Bachelor of Science in Engineering.

RECITALS

Hagerstown Community College (hereafter referred to as "HCC"), a community college in Washington County, Maryland, and Frostburg State University ("FSU"), a comprehensive regional institution in Western Maryland and a constituent institution of the University System of Maryland, agree to offer an articulated program leading to the award of an Associate of Science (A.S.) in Engineering Science Degree and a Bachelor of Science (B.S.) in Engineering. The parties further agree that students from HCC, through this articulation agreement, will be permitted to transfer credits earned for the A.S. at HCC to FSU, leading to the award of the B.S. degree in Engineering at FSU.

I. Purpose

a. It is the intent that this articulation agreement will facilitate a smooth transition from HCC's Engineering Science program to the B.S. in Engineering at FSU. As a result of this articulation agreement, HCC graduates will understand how FSU transfers the credits earned at HCC, as well as the changes in requirements that may permit more flexible scheduling once the student has been admitted to and enrolled at FSU. This agreement provides a systematic plan for students to receive both the A.S. degree from HCC and the B.S. degree in Engineering from FSU.

b. This agreement sets forth a clear set of responsibilities and expectations for both institutions. The parties agree to work collaboratively to meet the needs of HCC graduates in facilitating transfer to FSU.

c. HCC encourages graduates to continue their educational pathway in engineering for both personal and professional development, as well as career advancement in the profession. This articulation agreement for completion of the B.S. in Engineering facilitates students' successful achievement of credentials in the field.

II. Requirements of the Program

a. The program is designed for graduates of the A.S. degree in Engineering Science at HCC. Students must complete the A.S. degree at HCC in order to participate in the transfer program. A maximum of seventy (70) credit hours from HCC will be allowed toward fulfillment of the one hundred twenty (120) credit hours required for completion of the B.S. degree.

b. After completion of the A.S., and upon admittance by FSU, the student may commence the B.S. in Engineering.

c. Engineering students from HCC will have their coursework evaluated by FSU to determine which FSU general education requirements and discipline requirements have been met. HCC courses shall be evaluated by FSU for transferability, and FSU shall accept courses for transfer at its sole discretion. By taking full advantage of the HCC-FSU course agreements described below, the transfer student will matriculate at FSU with junior standing.

d. In accordance with Code of Maryland Regulations (COMAR), all courses meeting general education requirements at HCC will transfer to FSU as general education courses.

e. Students must maintain a 2.0 cumulative grade point average at HCC in order to transfer to the FSU B.S. in Engineering Program.

f. The maximum number of credits that will be accepted by FSU toward degree requirements from non-direct classroom instruction (including CLEP, AP, and other nationally recognized standardized examination scores) is thirty (30) credits. Tech Prep credits will transfer if recorded on HCC's transcript. Credit awarded for experiential learning ("life experience") is recognized by, and is transferable to, FSU if recorded on HCC's transcript.

g. HCC students who have completed the A.S. in Engineering Science degree will be given every consideration for financial assistance and will be eligible to compete for academic scholarships at FSU.

h. This agreement becomes effective on the date set forth on the first page of this document. HCC and FSU agree to publicize this program. The parties further agree to monitor the performance of the program and to make revisions as may be mutually agreed upon as necessary. Changes or amendments to this agreement must be made in writing and appended to this agreement.

i. This agreement may be terminated by either party with one year written notice to the other. The parties agree that termination shall include an agreement that students currently enrolled in the program at the time of termination shall be permitted to complete the program as described herein.

III. A.S. in Engineering-B.S. in Engineering Transfer Courses

The following indicates the transfer of course agreement between the HCC and FSU:

a. General Education Requirements to be completed at HCC

HCC GEP Requirements	**HCC**	**Transfers to FSU as:**
ENGLISH (6cr.)	ENG 101 and one other course from among ENG 102, 201, 202, 203, 204, 205, or 206	ENGL 101 and Satisfies 3 cr. of FSU Humanities requirements
ARTS/HUMANITIES (6cr.)	PHL 101 or Foreign Language course to satisfy remaining 3 cr. of FSU Humanities requirements and One other course to satisfy Fine and Performing Arts requirement (3 cr.)	Group A (Fine and Performing Arts) and Group B (Humanities)
SOCIAL SCIENCES (6cr.)	Any approved General Education course in Behavioral/Social Sciences except HIS courses	Group D (Social and Behavioral Sciences) – Satisfies two courses required
MATHEMATICS (3-4cr.)	MAT 203 satisfies FSU GEP and Engineering requirements	GEP Core Skill in math and required in engineering degree program
NATURAL SCIENCE (8cr.)	PHY 203 and CHM 103 (9cr.)	Group C: PHYS 261 and CHEM 201 (Required under the Engineering B.S. program)
DIVERSITY (3cr.)	Any approved General Education course in the Diversity category	Satisfies FSU Identity and Difference course requirement

Total General Education Credits Taken at HCC = 34 credits

b. FSU Engineering Requirements to be completed at HCC

In addition to the general education requirements indicated in the preceding section of this articulation agreement, the B.S. degree with a major in Engineering at FSU requires students to successfully complete the following course work:

Frostburg State University			HCC Program Equivalent
Course Number	Course Title	Credit Hours	
PHYS 261	Principles of Physics I	(5.0)	PHY 203 (GEP)*
PHYS 262	Principles of Physics II	5.0	PHY 204*
PHYS 263	Principles of Physics III	1.0	PHY 205*
CHEM 201	General Chemistry I	(4.0)	CHM 103 (GEP)
MATH 236	Calculus I	(4.0)	MAT 203 (GEP)
MATH 237	Calculus II	4.0	MAT 204
MATH 238	Calculus III	4.0	MAT 205
MATH 432	Differential Equations	4.0	MAT 206
ENME 271	Numerical Methods in Engineering	3.0	MAT 209

*The block of PHY 203, 204, and 205 are equivalent to PHYS 261-263 at FSU.

Program Requirements Transferred = 21

c. Electrical Concentration Requirements to be completed at HCC

Frostburg State University			HCC Program Equivalent
Course Number	Course Title	Credit Hours	
ENEE 204	Basic Circuit Theory	4.0	EGR 208**
ENEE 206	Fund. Digital and Electric Circuits Lab	4.0	EGR 210**

**Count EGR 208/210 with labs as equivalent block

Electrical Concentration Requirements Transferred = 8

d. Materials Concentration Requirements to be completed at HCC

Frostburg State University			HCC Program Equivalent
Course Number	Course Title	Credit Hours	
ENES 102	Statics	3.0	EGR 108
ENES 220	Mechanics of Materials	3.0	EGR 203
ENES 221	Dynamics	3.0	EGR 204
ENME 232	Thermodynamics	3.0	EGR 206

Materials Concentration Requirements Transferred = 12

Total Transfer Credits – Electrical Concentration = 63 Total Transfer Credits – Materials Concentration = 67 Maximum Transfer Credits Allowed = 70

e. Additional General Education Requirements to be completed at FSU:

Additional FSU GEP Requirements	FSU	HCC Equivalent One additional course maximum
Advanced composition (3cr.)	See approved list. ENGL 338 or 339 preferred.	None. Must be 300-400-level completed at a four-year college
Group E: The FSU Colloquia (6cr.)	IDIS 150/151 or IDIS/SUST 155 and IDIS 350/351 or one additional Modes of Inquiry course from Groups A-D.	None

Total Additional FSU General Education Requirements = 9cr.
Total General Education Requirements at HCC and FSU = 43cr.

f. B.S. in Engineering Degree Requirements to be completed at FSU

Frostburg State University			Notes
Course Number	Course Title	Credit Hours	
ENME 272	Intro. to Computer-Aided Design	3.0	
ENES 401	Fundamentals of Energy Engineering	3.0	
Electrical Engineering Concentration			
ENEE 244	Digital Logic Design	3.0	
ENEE 303	Analog and Digital Electronics	3.0	
ENEE 307	Electronic Circuits Lab	2.0	
ENEE 322	Signal and System Theory	3.0	
ENEE 350	Computer Organization	3.0	
ENEE 380	Electromagnetic Theory	3.0	
ENES 310	Mechatronic and Robotic Design	3.0	
ENEE 408	Capstone Design Project	3.0	
ENEE 439	Topics in Signal Processing	3.0	
ENEE 445	Introduction to Communication Systems	3.0	
ENEE 475	Power Electronics	3.0	
ENEE 481	Project Development in Electrical Engineering	3.0	
	300-400 level Electives	6.0	Any 300-400 level ENEE, ENES, or ENME course or CHEM 304
Materials Engineering Concentration			
ENME 232	Thermodynamics	3.0	
ENME 331	Fluid Mechanics	3.0	
ENME 332	Transfer Processes	3.0	
ENME 350	Electronics and Instrumentation I	3.0	
ENME 351	Electronics and Instrumentation II	3.0	
ENME 381	Project Development in Materials Engineering	3.0	
ENME 382	Engineering Materials and Manufacturing	3.0	
ENME 405	Fundamentals of Materials Engineering	3.0	
ENME 410	Fundamentals for Design and Engineering of Material Properties	3.0	
ENME 425	Microfabrication	3.0	
	300-400 level Electives	6.0	Any 300-400 level ENEE, ENES, or ENME course or CHEM 304

	Electives (any)	1.0	
Total Credits Taken for Electrical Concentration = 51			
Total Credits Taken for Materials Concentration = 50			
TOTAL CREDITS REQUIRED FOR BACHELOR'S DEGREE = 120			

g. Course Sequencing

Engineering students transferring to the B.S. in Engineering Program at FSU shall be notified by HCC and FSU that the B.S. in Engineering curriculum is built upon a series of established course sequences. For students to progress through the program, they must have the appropriate pre-requisites, corequisites, and must maintain a minimum 2.0 GPA.

Students wishing to participate in the program should develop an education plan at HCC by contacting:

Ed Sigler
Assistant Professor, Engineering
240-500-2610
cesigler1@hagerstownccc.edu

HCC will direct students interested in participating in the A.S. in Engineering Science program to apply for admission to FSU, indicating Engineering as the intended major. Applications can be submitted online at: http://gobobcats.frostburg.edu/appentry.htm.