

**Academic Program Articulation Agreement Between
Carroll Community College
and
McDaniel College
Regarding Transfer from A.S.E. in Electrical Engineering
to B.A. in Physics with Engineering Specialization**

A. Purpose

This Academic Program Articulation Agreement ("Agreement") is entered into by and between Carroll Community College and McDaniel College (collectively, the "Institutions", and individually, "Carroll" and "McDaniel") to facilitate the transfer of academic credits from an Associate of Science in Engineering (A.S.E.) in Electrical Engineering, CIP code 14.1001 for the completion of a Bachelor of Arts (B.A.) in Physics, CIP code 40.0801 (the "Program").

This Agreement offers a transfer pathway with degree requirements for the completion of both degrees and seeks to ensure the maximum potential for student success.

This Agreement serves to clarify roles and responsibilities of the Institutions for the purpose of this partnership.

B. Qualifying Students

This Agreement pertains to the transfer of "Qualifying Students," i.e., those students who:

1. Have successfully completed an A.S.E. in Electrical Engineering at Carroll;
2. Are enrolled in Carroll, in good standing; and
3. Are accepted for admission to McDaniel, and
4. Have a GPA of 2.00 or higher both in the area of study and cumulative.

C. Responsibilities of the Institutions

The Institutions agree to implement the transfer of Qualifying Students in accordance with applicable law and the following requirements and protocols:

1. A Qualifying Student may transfer from Carroll into McDaniel for the completion of the Program.
2. A Qualifying Student will:
 - (a) Receive guaranteed admission to McDaniel.
 - (b) Be considered for transfer scholarships if they are eligible.
 - (c) Be able to register for classes in April to ensure they will be able to enroll in the classes necessary to complete their degree in a timely manner.
 - (d) Have access to a Physics advisor at McDaniel to ensure smooth transfer.
 - (e) Be eligible for additional scholarship consideration if they are members of Phi Theta Kappa (PTK).

To take advantage of this Agreement, a Qualifying Student will apply no later than January 15th and submit the deposit by March 15th.

3. If the Qualifying Student is using federal Title 38 VA Education Benefits (GI Bill® Education Benefits), the Institutions shall adhere to all applicable U.S. Department of Veterans Affairs' regulations, including the regulations governing the awarding prior credit, as regulated under Title 38, Code of Federal Regulations, Sections 21.4253(d)(3) and 21.4254(c)(4).
4. Each Institution shall adhere to all applicable transfer requirements set forth in the Annotated Code of Maryland and the Code of Maryland Regulations.

5. Each Institution shall advise students regarding transfer opportunities under this Agreement and shall advise students of financial aid opportunities and implications associated with the transfer.
6. Should either Institution make changes to program requirements, the institution will inform the partner institution immediately. This Agreement should be updated to reflect the changes and forwarded to the Maryland Higher Education Commission.
7. McDaniel shall designate, and shall provide to Carroll, the contact information for a staff person at McDaniel who is responsible for the oversight of the transfer of Qualifying Students. Carroll shall designate, and shall provide to McDaniel, the contact information for a staff person at Carroll who is responsible for the oversight of the transfer of Qualifying Students.

Contact information for person responsible for oversight:

	Carroll Community College	McDaniel College
Name:	Ms. Tricia Crossett	Dr. Stephanie Madsen
Title:	Program Director - Engineering	Associate Dean, Academic Life
Email address:	tcrossett@carrollcc.edu	smadsen@mcDaniel.edu
Telephone number:	(410) 386-8529	(410) 386-4674

Should the staff person or position change, the institution will promptly provide new contact information to the partner institution and inform the Maryland Higher Education Commission of the change.

Additional contact information:

	Carroll Community College	McDaniel College
Name:	Dr. April Herring	Ms. Sheila Deane
Title:	Director of Advising and Transfer	Associate Registrar for Transfer Evaluation
Email address:	aherring@carrollcc.edu	sdeane@mcDaniel.edu
Telephone number:	(410) 386-8444	(410) 857-2518

D. Ongoing Collaboration

To strengthen this Agreement:

1. Faculty representatives from the Institutions will meet regularly to engage in ongoing discussion to enhance and strengthen this collaboration.
2. McDaniel's Physics Department agrees to have faculty serve as a resource, as available, to Carroll students and faculty as guest lecturers, workshop/seminar facilitators and other program exchanges.
3. Carroll agrees to learn about McDaniel's Physics program to highlight opportunities at McDaniel to students, as well as to have faculty serve as a resource, as available, to Carroll students and faculty as guest lecturers, workshop/seminar facilitators and other program exchanges.
4. The Institutions agree to communicate program changes in a timely manner to avoid disruption to student progress toward degree completion.

E. Program Articulation Agreement

The following details a recommended course of study for students earning the A.S.E. in Electrical Engineering at Carroll transferring to McDaniel in pursuit of the B.A. degree with a major in Physics with Engineering Specialization. The course recommendations are designed to meet the general education requirements of both Institutions at optimal levels. In the spirit of the College Readiness and Completion Act of 2013, this Agreement encourages the completion of all associate degree requirements.

Students interested in this program must complete the McDaniel College application process and be admitted to the College before credit evaluations are completed at McDaniel. Only courses with a "C" or higher are eligible for transfer.

McDaniel requires students to have a minimum of 128 credit hours (credits) to graduate with a B.A. The Physics major with Engineering Specialization requires 65 credits. The remaining 63 credits (or more) come from electives and general education requirements.

Carroll requires students take 63 credits to get an A.S.E. in Electrical Engineering. The core program requirement is 51 credits of mathematics, physics, chemistry, computer science and electrical engineering courses. The remaining 12 credits come from general education requirements.

Carroll Community College			McDaniel College Comparable Course			
Course Number	Course Name	Credits	Course Number	Course Name	Credits	Applied to
Required courses for A.S.E. in Electrical Engineering		51				
PHYS-111	Physics 1 for Scientists & Engineers	4	PHY-1114, PHY-1014	General Physics I	4	SIL, Major
PHYS-212	Physics 2 for Scientists & Engineers	4	PHY-1115, PHY-1015	General Physics II	4	SIL, Major
PHYS-213	Physics 3 for Scientists & Engineers	4	PHY-SIL	Physics Elective	4	SIL
MATH-135	Calculus - Single Variable 1	4	MAT-1117	Calculus I	4	QR, Major
MATH-136	Calculus - Single Variable 2	4	MAT-1118	Calculus II	4	QR, Major
MATH-205	Multivariable Calculus	4	MAT-2219	Calculus III	4	QR, Major
MATH-215	Differential Equations	4	MAT-3304	Differential Equations	4	QR, Major
CHEM-105	Principles of General Chem 1	4	CHE-1103, CHE-1001	General Chemistry I	4	SIL
CIS-132	Principles of Programming	3	CSC 1106	The Art of Programming	3	QR, Major
ENGR-100	Introduction to Engineering	3	ENR 1101	Introduction to Engineering	3	SIE, Major
ENEE-205	Electrical Circuits	4	ENR 2201	Analog & Digital Circuits	4	SIL, Major
ENEE-222	Elements of Discrete Signal Analysis	4	PHY (SIL)	Physics Elective	4	SIL
ENEE-244	Digital Logic Design	3	PHY (SIL)	Physics Elective	3	SIL
ENEE-245	Digital Circuits Laboratory	2	PHY (SIL)	Physics Elective	2	SIL
English Composition and Literature (one course)		3				
ENGL-101	College Writing 1	3	ENG-1101	Introduction to College Writing	3	CW
Arts & Humanities (two courses)		6				
Recommended						
FPA-101	Introduction to the Arts	3	ART-ELEC	Art Elective	3	CE
MUSIC-104	World Music	3	MUL-1140	World Music Survey	3	CE, IN
HIST-101	Western Civilization 1	3	HIS-1105	History International Western	3	IW
PHIL-120	World Philosophy	3	PHI-2102	Philosophy Around the World	3	IN, SCH, TA
Social & Behavioral Science (one courses)		3				
ECON-102	Principles of Macroeconomics	3	ECO-1102	Economic Issues and Policy	3	SCH
Total		63	Total		63	

At Carroll, students take ten 4-credit courses, three 3-credit courses, and one 2-credit course for the A.S.E. in Electrical Engineering (51 credits total). Of these courses:

- Nine will count towards the Physics with Engineering major at McDaniel (highlighted red in the table). They are PHYS 111, PHYS 212, ENGR 100, ENEE 205, MATH 135, MATH 136, MATH 205, MATH 215, and CIS 132 (34 credits total).
- Five will count as electives towards McDaniel graduation (highlighted blue in the table). They are PHYS 213, CHEM 105, ENEE 222, ENEE 244, and ENEE 245 (17 credits total).

To complete the B.A. in Physics with Engineering Specialization at McDaniel, Carroll students will have to take the following physics courses (21 credits):

1. PHY 2201 - Math. Physics + PHY 2001 Lab (4 credits)
2. PHY 2202 - Intermediate Mechanics (4 credits)
3. PHY 2203 - Foundations of Modern Physics I (4 credits)
4. PHY 3200 - Advanced Physics Laboratory (4 credits, counts towards WID and not Physics)
5. PHY 4491 - Physics Seminar (1 credits)
6. ENR 2202 - Engineering Mechanics (4 credits)
7. ENR 4401 - Senior Engineering Laboratory (4 credits)

They also need to take two physics/engineering electives (8 credits). We recommend the following courses:

1. ENR 3301 - Mechanics of Solids (4 credits)
2. ENR 3302 - Fluid Mechanics (4 credits)
3. PHY 3301 - Intermediate Electricity and Magnetism (4 credits)
4. PHY 3311 - Thermodynamics (4 credits)

In summary, Carroll students will need to take 29 credits in physics/engineering. Adding this number to the 34 credits from Carroll gives 63 credits, which McDaniel considers as meeting the Physics with Engineering Specialization requirement.

Carroll students who follow the plan outlined will fulfill most of the Integrated Studies of the Liberal Arts portion of the McDaniel Plan as shown below.

The McDaniel Plan (Integrated Study in the Liberal Arts)		Carroll Course Equivalent
Required courses	Credits	
First-Year Seminar (FYS)	4	Waived
Intro to College Writing (CW)	4	ENGL 101
Multicultural in the U.S. (M)	4	DVTY/SOC-115
International Non-Western (IN)	4	MUSIC-104, PHIL-120, ANTH-101, SOC-101
International Western or Non-Western (IW or IN)	4	HIST-101, MUSIC-104, PHIL-120, ANTH-101, SOC-101
Second Language	0-8	
Departmental Writing Requirement (WID)	4	
Quantitative Reasoning (QR)	4	MATH-135, MATH-136, MATH-205
Scientific Inquiry with Lab or Embedded Lab (SIL or SIE)	4	PHYS-111, PHYS-212, PHYS-213, CHEM-105, CHEM-106
An additional SI, SIL, SIE, or QR course	4	PHYS-111, PHYS-212, PHYS-213, CHEM-105 CHEM-106, MATH-135, MATH-136, MATH-205
Textual Analysis (TA)	4	ENGL 102
Creative Expression (CE)	4	FPA-101, MUSIC-104
Social, Cultural, and Historical Understanding (SCH)	4	PHIL-120, ANTH-101, PSYC-101, ECON-102, SOC-101
Jan Term	2	
Physical Activity and Wellness (2 courses/activities)	1	
Total	51-59	

Upon completion of their A.S.E. degree, students will receive a waiver to the McDaniel Plan requirements of First Year Seminar. Students may also wish to achieve proficiency in a second language, as this is a requirement at McDaniel. The Departmental Writing Requirement (WID) will be fulfilled by taking PHY 3200 - Advanced Physics Laboratory at McDaniel.

The plan outlined results in 63 earned credits, which is considered sophomore class level at McDaniel (32-63.5 credits). Students can transfer a maximum of 64 credits.

Students should contact the Admissions Office to learn about scholarship and need-based financial aid opportunities that may be available.

F. Term and Termination

1. This Agreement shall be effective on the date that it is signed by the appropriate and authorized representatives of each Institution.
2. Either Institution may, at its sole discretion, terminate this Agreement upon delivering 180 days written notice to the other Institution and the Maryland Higher Education Commission. Such termination will not affect the participation in the articulated programs of those Carroll students who have been fully or conditionally admitted to McDaniel.
3. Both Institutions agree to meet once every 3 year(s) to review the terms of this agreement.

G. Amendment

1. This Agreement constitutes the entire understanding and agreement of the Institutions with respect to their rights and obligations in carrying out the terms of the Agreement and supersedes any prior or contemporaneous agreements or understandings.
2. This Agreement may be modified only by written amendment executed by both Institutions.
3. Minor adjustments to course titles and/or sequential numbering do not require mutual written consent.

H. Governing Law

This Agreement shall be governed by, and construed in accordance with, the laws of the State of Maryland.

I. Counterparts

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

J. Notice of Agreement

1. The Institutions agree to provide a copy of this Agreement, with any amendments, to the Maryland Higher Education Commission.
2. The Institutions agree to provide copies of this Agreement to all relevant individuals and departments of the Institutions, including but not limited to students, academic department chairs participating in the transfer, offices of the president, registrar's offices, and financial aid offices.

K. No Third-Party Beneficiaries

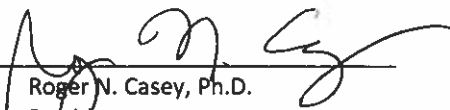
There are no third-party beneficiaries to this Agreement.

L. Representations and Warranties of the Parties

Both Institutions represent and warrant that the following shall be true and correct as of the Effective Date of this Agreement, and shall continue to be true and correct during the term of this Agreement:

1. The Institutions are and shall remain in compliance with all applicable federal, state, and local statutes, laws, ordinances, and regulations relating to this Agreement, as amended from time to time.
2. Each Institution has taken all action necessary for the approval and execution of this Agreement.

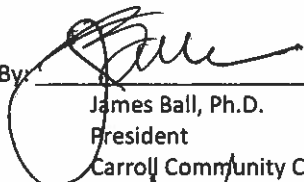
IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives.

By: 

Roger N. Casey, Ph.D.
President
McDaniel College

4.17.19

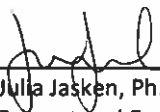
Date

By: 

James Ball, Ph.D.
President
Carroll Community College

4/24/19

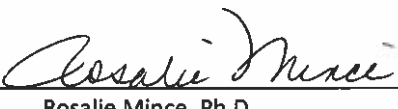
Date

By: 

Julia Jaska, Ph.D.
Provost and Executive Vice President
McDaniel College

4/17/19

Date

By: 

Rosalie Mince, Ph.D.
Vice President Academic
& Student Affairs
Carroll Community College

4/22/19

Date