

## ARTICULATION AGREEMENT

between

*Anne Arundel Community College*  
Associate of Sciences in Engineering Technologies

and

*The Catholic University of America*  
School of Engineering

**Bachelor of Science with Majors in:**

**Biomedical Engineering | Civil Engineering | Mechanical Engineering  
Electrical Engineering & Computer Science**

Entered into this 11<sup>th</sup> day of August, 2009.  
(date) (month)

\_\_\_\_\_  
Charles C. Nguyen, D.Sc., Dean  
School of Engineering, Catholic University

\_\_\_\_\_  
Martha A. Smith, Ph.D., President  
Anne Arundel Community College

\_\_\_\_\_  
Binh Q. Tran, Ph.D., Assistant Dean  
Chair, Dept of Biomedical Engineering

\_\_\_\_\_  
Andrew L. Meyer Ed.D., Vice President  
for Learning  
Anne Arundel Community College

\_\_\_\_\_  
Poul Lade, Ph.D.  
Chair, Dept of Civil Engineering

\_\_\_\_\_  
Kelly Koermer, J.D., Dean  
School of Business, Computing & Technical Studies  
Anne Arundel Community College

\_\_\_\_\_  
Phillip Regalia, Ph.D.  
Chair, Dept of Electrical Engr & Computer Science

\_\_\_\_\_  
Sen Nieh, Ph.D.  
Chair, Dept of Civil Engineering

This agreement is effective with new The Catholic University of America admits Fall 2009.  
This agreement will be reviewed biennially

## **ARTICULATION AGREEMENT**

Anne Arundel Community College (AACC), a community college in Anne Arundel County, Maryland, and The Catholic University of America (CUA), located in Washington D.C., recognize the need and importance of facilitating the transfer of students from AACC's Associate of Science degree in Engineering to CUA's School of Engineering as these students pursue their educational goals. To enhance this transition, a formal articulation agreement between AACC and CUA is being established. It is based on a thorough review of the General Education Core Curriculum as well as prerequisite courses for engineering at AACC and corresponding courses at CUA in parallel programs.

Both AACC and CUA agree to offer an articulated program leading to the award of a Associate of Sciences (A.S.) Degree in Engineering and a Bachelor of Science (B.S.) Degree in one of five areas of engineering specialization. These include biomedical engineering, civil engineering, computer science, electrical engineering or mechanical engineering. CUA further agrees that students from AACC, through this articulation policy, will be allowed to transfer credits earned for the Associate of Science Degree in Engineering at AACC to CUA, and leading to the award of the Bachelor of Science Degree at The Catholic University of America.

### **PURPOSE OF AGREEMENT**

This agreement is entered into to serve the instructional needs of AACC students and graduates. The general purpose of this agreement is to make clear the terms of this articulation agreement.

There are three specific goals under this agreement. First, it is the intent that this articulation agreement will facilitate a smooth transition from AACC's engineering program to the B.S. in engineering at CUA as efficiently as possible. AACC graduates will understand how CUA transfers the credits they earn at AACC, as well as the changes in requirements that may permit more flexible scheduling once the student has been admitted to and enrolled at CUA. This agreement provides a systematic plan for students to continue their higher education beyond the A.S. degree from AACC.

Second, this agreement is a publication of a clear set of understandings and expectations for both institutions and programs. Making our expectations clear to students and between institutions not only contributes to the first goal, but also allows institutions to work collaboratively to meet the needs of AACC graduates. Like any policy agreement, this articulation agreement will need to be updated, revised and refined as instructional programs are revised.

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

## ACADEMIC AGREEMENTS

The following general principles guide the operation of this Agreement:

1. The program is designed for graduates of the A.S. degree in engineering at AACC. A maximum of 60 credit hours from AACC will be allowed toward completion of the requirements for the baccalaureate degree in engineering.
2. CUA requires nine general education (i.e. liberal studies) courses to satisfy graduation requirements. At minimum, three of these (two religion courses and one engineering ethics) must be taken at CUA. Another required course is English Composition (i.e. ENG 111). The remaining General education courses are met by selection of courses from the pre-approved list of courses provided by CUA's School of Engineering.
3. Students must maintain a 3.0 cumulative grade point average in order to transfer.
4. CUA does not place a maximum on the number of credits that will be accepted toward degree requirements from Advanced Placement (A.P) courses provided the student receives a score of 4 or 5 on the AP examination. No other non-direct classroom instruction will be transferred. Tech Prep credits will transfer where appropriate. Credit awarded for experiential learning ("life experience") is not recognized by, and is not transferable to, CUA.
5. Once the A.S. Degree is completed and the student has been admitted to CUA, the student may commence the engineering program in which s/he has been admitted. Selection of and registration for appropriate courses should be done in consultation with the Chair of the department to which the student has been accepted.
6. While AACC and CUA do not presently have a dual enrollment program. Should one be agreed to, this agreement will not preclude students from participation and students may apply for and receive the benefits of dual enrollment. Those students would then be subject to the policies of said program should they apply.
7. This agreement becomes effective on the date set forth on the first page of this document. AACC and CUA agree to publicize this program. They further agree to monitor the performance of this agreement and to revise it as necessary. The agreement may be terminated by either party for due cause and after adequate notice to the other. Termination of the agreement will not affect any students currently enrolled at AACC in the engineering program at the time of termination, and they shall be able *to* transfer credits pursuant to this agreement.
8. CUA will establish a mechanism to provide information on the academic progress of the AACC student enrolled as a result of this agreement.

## STUDENT SERVICES

1. AACC students who participate in this agreement will be identified for the following services if students meet the admissions requirements for The Catholic University of America:
  - a. Student housing located on The Catholic University of America campus.
  - b. Application fee waiver.
2. The Catholic University of America staff will provide information and assistance to students interested in matriculating at The Catholic University of America.
3. CUA will establish a mechanism to provide information on the academic progress of the AACC student enrolled as a result of this agreement.

## SCHOLARSHIPS

Students transferring from AACC to CUA, who have earned an Associate of Science degree, meet application and registration deadlines, academic and financial qualifications that apply to all students will be given every consideration for financial assistance and will be eligible to compete for academic scholarships at CUA.

---

The following sections describe the specifics of the agreement.

### **A.S. in Engineering-B.S. in Engineering Transfer Agreements**

The engineering degree at AACC is considered a transfer program. Therefore, engineering students who transfer to CUA will have their coursework evaluated on a course-by-course basis to determine which of CUA general education requirements and discipline requirements have been met. By taking full advantage of the AACC-CUA course agreements outlined below, the transfer student will matriculate at junior standing. Further, this agreement allows the student who has obtained an A.S. Degree in engineering from AACC and who has enrolled in engineering at CUA to apply up to 60 transfer credits to required components of the major.

The following indicates the transfer of course agreement between the A.S. in engineering at AACC and the B.S. in engineering at CUA.

### **Lower Division CUA requirements for Engineering Programs**

#### **Core Transfer Courses:**

<b>Non-Technical Courses</b>	
<b>AACC Course</b>	<b>CUA Equivalent</b>
ENG 111: Language & Rhetoric (3 cr)	ENG 101: Rhetoric & Composition (3 cr)
<b>Notes:</b> Usually CUA students complete 3-4 additional general education courses by completion of the 2 <sup>nd</sup> year. This can be selected from AACC's humanities, behavioral, and/or social science distribution categories. Courses in AACC's Arts Distribution category also apply if at the 200-level.	

<b>Technical Courses</b>	
<b>AACC Course</b>	<b>CUA Equivalent</b>
CHE 111: General Chemistry (4 cr)	CHEM 103: General Chemistry I (3 cr)
MAT 191: Calculus I (4 cr)	MATH 121: Calculus I (4 cr)
MAT 192: Calculus II (4 cr)	MATH 122: Calculus II (4 cr)
MAT 201: Calculus III (4 cr)	MATH 221: Calculus III (4 cr)
MA 212: Differential Equations (3 cr)	ENGR 222: Engineering Mathematics (4 cr)
PHY 211: General Physics I (4 cr)	PHYS 215: University Physics I (4 cr)
PHY 212: General Physics II (4 cr)	PHYS 216: University Physics II (4 cr)

<b>Engineering Courses:</b>	
<b>AACC Course</b>	<b>CUA Equivalent</b>
EGR 120: Intro Engineering Design (3 cr)	ENGR 102: Engr Design & Professionalism
	ENGR 104: Intro Engineering Lab (1 cr)
ENT 241: Computer-Aided Drafting (3 cr)	ENGR 106: Computer Aided Engineering (2 cr)
EGR 209: Statics (3 cr)	ENGR 201: Engineering Mechanics I (3 cr)
EGR 222: Dynamics (3 cr)	ENGR 202: Engineering Mechanics II (3 cr)
EGR 221: Thermodynamics (3 cr)	ENGR 211: Thermodynamics (3 cr)
EGR 235: Circuits Theory (3 cr)	ENGR 212: Electronic Networks (3 cr)
EGR 141: Programming in C for Engr. (3 cr)	CSC 113: Computer Programming (3 cr)

#### **Additional Electives for Select Engineering Programs at CUA:**

<b>Electives for Biomedical Engr:</b>	
BIO 101: Fund. of Biology (4 cr)	BIOL 105: Mechanisms of Life (4 cr)
CHE 112: Gen. Chem II (4 cr)	CH 102/104: General Chem II (3 cr)

<b>Electives for Civil/Mechanical Engr:</b>	
EGR 211: Mechanics of Materials (3 cr)	ENGR 301: Solid Mechanics (3 cr)

<b>Electives for Electrical Engr:</b>	
EGR 244: Digital Logic Design (3 cr)	EE: Switching Circuits & Logic Design (3 cr)

### **Upper Division CUA Requirements for Engineering Programs**

All AACC transfer students with an A.S. in engineering will be required to take a minimum of 60 credits of upper division coursework at CUA and varies by engineering program to which the student is accepted. Students can find engineering program specific upper division course requirements at <http://engineering.cua.edu>.

Engineering students transferring to the engineering programs (i.e. biomedical, civil, computer science, electrical, or mechanical) at CUA should be aware that the 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, co-requisites, and must also achieve sufficient GPA levels. While at CUA, students are required to maintain semester and cumulative G.P.A. levels above a 2.0 to remain in good academic standing.

### **SUMMARY**

For students following this agreement, the steps are as follows:

Step 1: Complete the engineering at AACC.

Step 2: Apply for admission to CUA, indicating the specific engineering discipline (i.e. biomedical, civil, computer science, electrical, or mechanical) as the intended major. Students can apply online at <http://admissions.cua.edu>.

Step 3: Once admitted, students should directly contact the Chair of the engineering department. The Chair will the work with the student to develop a course of action and timetable for completion of the Bachelor of Science Degree at CUA.