

**Articulation Agreement for
Blue Ridge Community College
Associate of Science Degree – Engineering Specialization
and
James Madison University
Bachelor of Science of Engineering**

1. Introduction

James Madison University and Blue Ridge Community College recognize the need and importance of facilitating the transfer of students from one institution to the other as they pursue their educational goals. Therefore, James Madison University (JMU) and Blue Ridge Community College (BRCC) enter into this agreement for the purpose of articulating policies and procedures governing the matriculation of BRCC graduates holding the Associate of Science Degree with Engineering Specialization into the School of Engineering Bachelor of Science in Engineering degree program at JMU.

The faculty members of the School of Engineering at JMU have developed a program that is notable for its multi-disciplinary approach, hands-on learning component, and design practice. This represents a non-traditional approach that will require some adjustment for the transfer student. In order to ease transition, transfer students will be required to take a bridging course in their first semester at JMU. This course, ENGR 3xx, will include lectures and laboratory experiences designed to introduce transfer students to the JMU engineering program. Although the faculty feel it necessary that transfer students take this course upon arrival at JMU, they also recognize that this course in combination with the other required courses will constitute a significant academic load and incoming transfer students should be prepared for a challenging semester.

There are several interdependencies between courses in the JMU engineering curriculum. Students who wish to complete their degree with two additional years at JMU should be aware that most courses are only offered once per year. Failure to complete any course per the schedule shown on page 6 may delay graduation by a full year.

2. Student Eligibility and Admission Requirements

- 2.1 A student who has met the criteria for the BRCC-JMU Agreement, has completed the A.S. degree with Engineering Specialization as outlined in the BRCC-JMU Agreement, and has met the requirements listed in sections 2.1.1–2.1.2 below qualifies for conditional admission into the School of Engineering at JMU as an Engineering major with junior standing.
 - 2.1.1 The student has earned a minimum curriculum grade point average of 3.0 on a 4.0 scale.
 - 2.1.2 The student has earned a grade of C or better in all required engineering (EGR), math (MTH), physics (PHY), and chemistry (CHM) courses and technical electives.

- 2.2 A student who follows the curriculum stated in the current BRCC-JMU Agreement will qualify to meet graduation requirements for the B.S. in Engineering degree. In particular, students must meet the following JMU requirements:
 - 2.2.1 The student must complete the minimum number of semester hours for a B.S. degree and the minimum number of hours required at a four year institution.
 - 2.2.2 The student must meet grade point average and progression standard requirements.
 - 2.2.3 The student must satisfy remaining competency requirements, such as the Honor Code test.
 - 2.2.4 The student must meet the residence requirement.

3. Student Status and Course Credit

- 3.1 Qualifying students will be conditionally granted admission to the School of Engineering at JMU as Engineering majors with junior standing.
 - 3.1.1 Admission is conditional based on availability of seats in the School of Engineering
- 3.2 Students entering the Engineering major under the conditions of this agreement as stated in section 2 will have the following JMU requirements satisfied:
 - 3.2.1 JMU General Education requirements will be satisfied.
 - 3.2.2 The JMU Bachelor of Science degree quantitative and scientific literacy requirements will be satisfied.
 - 3.2.3 Students will be not be required to take ENGR 112, ENGR 212, ENGR 231, or ENGR 232 provided they have completed the A.S. degree with engineering specialization as listed in section 2 and have completed EGR 110, EGR 120, EGR 126, EGR 140, EGR 206, and EGR 245. ENGR 3xx and ENGR 221 must be taken in the first semester at JMU as preparation for further classes. This may restrict transfers to enter during the fall semester.
 - 3.2.3.1 ENGR 3xx is a bridging course which contains material considered unique to the JMU Engineering program. The bridging course will also act as a program orientation and introduction to JMU School of Engineering facilities and tools.
- 3.3 Students who have obtained an Associate of Science degree but do not meet the Engineering admission requirements as stated in section 2 may declare the Engineering major at JMU with permission of the Director of the School of Engineering. These students will not enter with junior standing in Engineering and may not be able to complete degree requirements in four semesters.
- 3.4 Students admitted to JMU from BRCC will be eligible for merit scholarships based upon academic performance, as well as other forms of financial aid.

4. Responsibilities of the Parties

During the period of this agreement, JMU agrees to do the following tasks.

- 4.1 Publish annually a transfer guide and a guide to course requirements for BRCC students to use in planning their programs of study.
- 4.2 Provide annually to BRCC data about the academic performance of students who transfer under this agreement as compared to the academic performance of JMU native Engineering students.

During the period of this agreement, BRCC agrees to do the following tasks.

- 4.3 Publicize this agreement to its students, faculty and administration.
- 4.4 Review the data provided from section 4.2 and consider making adjustments to the BRCC curriculum as appropriate.

5. Institutional Cooperation

During the period of this agreement, both institutions agree to do the following tasks.

- 5.1 Monitor the academic performance of students enrolling under this agreement, identify problems, and work cooperatively to adjust details of course sequence and content so that students can transfer without academic interruptions.
- 5.2 Notify each other concerning any contemplated curricular changes that would affect the status of this agreement.
- 5.3 Jointly develop and publish an annual four year plan modeled on the attached 2009-2010 four year plan. Each four year plan will be based on the current JMU and BRCC catalogs and detail the course requirements for completing the Associate's Degree and Bachelor's Degree programs at BRCC and JMU respectively.

6. Period of Application of the Agreement

- 6.1 The terms of this articulation agreement shall be effective ____, 2009 and shall continue in effect unless terminated as stipulated in the following paragraph.
- 6.2 Either party to this agreement may withdraw from this agreement by providing written notice to the appropriate parties. The following persons must be notified one year in advance of their intention to withdraw: Director of the School of Engineering at JMU and the President of BRCC.

Agreed by the parties on the 20th day of August 2009.

Blue Ridge Community College Signatories

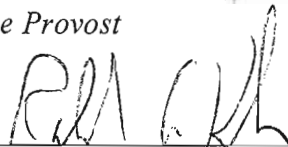


~~Dr. John Downey~~ *HARA CHARLIER*
Interim Vice President of Instruction and
Student Services

James Madison University Signatories



Dr. Teresa Gonzalez
Vice Provost



Dr. Ronald Kander
Director of the School of Engineering

JAMES MADISON UNIVERSITY ADVISING GUIDE

BRCC College/University Transfer Advising Guide for Associate of Science Degree (Engineering Specialization) Transfer

For Students Pursuing Engineering Major at James Madison University. Consult the BRCC-JMU Engineering articulation agreement at

<http://www.jmu.edu/engineering/documents/BRCC%20Associate%20of%20Science%20Degree.pdf>.

Curriculum

Course No.	Title	Credits
First Semester		
MTH 173	Calculus with Analytic Geometry I	5
CHM 111	College Chemistry I	4
EGR 120	Introduction to Engineering	2
ENG 111	College Composition I	3
SDV	Student Development	1
	History Elective ^a	<u>3</u>
		18
Second Semester		
MTH 174	Calculus with Analytic Geometry II	5
CHM 112	College Chemistry II	4
EGR 140	Engineering Mechanics - Statics	3
	Social/Behavioral Science Elective ^a	3
ENG 112	College Composition II	<u>3</u>
		18
Third Semester		
MTH 277	Vector Calculus	4
PHY 241	University Physics I	4
	Engineering Elective (EGR 115 or EGR 126 or EGR 206) ^b	3
	Health/Physical Education ^c	1
	Humanities/Fine Arts Elective ^a	3
	Literature ^b	<u>3</u>
		18
Fourth Semester		
MTH 291	Ordinary Differential Equations	3
MTH 177	Linear Algebra	2
PHY 242	University Physics II	4
	Engineering Elective (EGR 115 or EGR 126 or EGR 206) ^b	3
	Engineering Elective (EGR 115 or EGR 126 or EGR 206) ^b	3
EGR 245	Engineering Mechanics - Dynamics	<u>3</u>
		18
Total credit required		72

^a A list of approved electives can be found on pages 55-56 of the BRCC catalog.

^b Students who satisfactorily complete EGR 115, 120, 126, 140, 206 & 245 will not have to take ENGR 112, 212, 231 or 232 at JMU.

^d Total of one credit of HLT/PED required in the program. (Excluding HLT 143-144.)

Notes:

1. Admission is conditional based on availability of seats in the School of Engineering.
2. Students must earn a minimum of 60 credits at JMU in order to graduate. This means that in addition to the courses shown, an additional 10 credits of free electives from JMU will be required.
3. In order to maintain full time status, students are required to take a minimum of 12 credits per semester.
4. ABET requires that a minimum of 25% of required credits are in Math and Basic Sciences, and that a minimum of 37.5% of required credits are in Engineering Topics (ABET Self-Study Table 5-1). Assuming that all of the required Engineering courses shown above are completed, and that an additional 10 credits of free electives (not shown in the JMU schedule) are taken, the following two extreme scenarios could take place.
 - a. If ALL of the Technical Electives at JMU are taken as Math and Basic Sciences, the percentage of required courses are:
 - i. 33% Math and Basic Sciences
 - ii. 44% Engineering Topics
 - b. If ALL of the Technical Electives at JMU are taken as Engineering Topics, the percentage of required courses are:
 - i. 26% Math and Basic Sciences
 - ii. 50% Engineering Topics

Either of the extreme cases shown above will fulfill the ABET requirement.

Remaining University requirements

Honor Code Test

At least 120 total credit hours with a cumulative GPA of at least 2.0

Meet JMU School of Engineering progression standard for junior/senior level courses

Enrollment at JMU in the semester that degree requirements are satisfied.