

Mathematics Pathway

This pathway in Mathematics is aligned with the [VCCS Mathematics Common Curriculum](https://www.transfervirginia.org/content/vccs-mathematics-common-curriculum) (<https://www.transfervirginia.org/content/vccs-mathematics-common-curriculum>). It provides a recommended semester-by-semester sequence for completing this curriculum in preparation for transferring to a four-year institution to major in Mathematics. Mathematics falls under the Associate of Science in Science, and students completing this curriculum will be awarded a Science A.S.

Before you begin...

You'll see in the sequencing below that there are spots where you'll need to make choices. These choices should be based on the recommendations that your intended transfer institution has published. You can search the [Transfer VA Resource Center](https://www.transfervirginia.org/resources/) (<https://www.transfervirginia.org/resources/>) for your school's guide. If they have not posted one there, look on both the BRCC transfer advising pages and your school's website to see if additional information is posted there. Make sure you know the answers to the following:

- All math majors complete the Calculus sequence (MTH 263/264/265) but there is some variation in what **additional math major courses** your school wants. Of MTH 266, MTH 267, and MTH 288, two of the three should always appear. Look closely to see which two, or maybe even all three.
- Because of the Calculus sequence, you should **make an appointment with an Academic Advisor to determine your math placement**. It is possible to place directly into Calculus I (MTH 263) on the basis of your high school coursework.
- If you need to start in Precalculus, we recommend **starting in MTH 167** if you are prepared for it. But if you want to take things at a slower pace, you can also complete the MTH 161+162 Precalculus sequence.
- Does your transfer school have a **language** requirement? Some colleges want you to complete through the second year of a world language, some want one year, some don't require it at all. Sometimes it's better to hold off on your language until after you transfer. What does your guide say?
- Finally, look closely at your school's transfer information for **additional requirements**. They may want you to take more math courses, an additional science course, or maybe a programming course. There should be enough free elective space in the degree to accommodate those requirements, just make sure everything is accounted for!

In the table on the next page, "UCGS" stands for Uniform Certificate of General Studies. The UCGS forms the General Education core of all the transfer degrees. Here is the [list of UCGS courses in the current catalog](https://catalog.brcc.edu/programs-study/ucgselectives/index.html) (<https://catalog.brcc.edu/programs-study/ucgselectives/index.html>).

If you would like some help figuring it all out, make an appointment with an Academic Advisor!

What do our local partners want?

We're checking in with our local partners and making notes. This section will be updated as more information becomes available!

James Madison University (JMU)

- JMU has posted Transfer VA guides for both [Mathematics](https://www.transfervirginia.org/content/jmu-mathematics-transfer-guide) (https://www.transfervirginia.org/content/jmu-mathematics-transfer-guide) and [Statistics](https://www.transfervirginia.org/content/jmu-bs-statistics-transfer-guide) (https://www.transfervirginia.org/content/jmu-bs-statistics-transfer-guide).
- Wants MTH 266 and MTH 267 but does not recommend MTH 288.
- If you are planning on completing a B.S. (Bachelor of Science) at JMU, there is no language requirement. If you are planning on completing a B.A. (Bachelor of Arts), there is, and you should work with Advising to decide if it makes sense to complete your language here or wait until after you transfer.
- Statistics courses: MTH 245 + MTH 283 together. Talk to an advisor about MTH 283; we don't currently offer it at BRCC but can bring it in through shared distance learning (SSDL). MTH 246 (SSDL) is also an elective option for the Statistics major if you have room.
- No second science or programming requirement.
- Students who want to teach high school math should use free elective spaces for Education coursework (PSY 230, EDU 200, EDU 204).

SSDL (Shared Services Distance Learning) and course offering information

BRCC supports most general education and introductory major classes year-round – if you need a History course or even Calculus I, you'll find sections running in the fall, spring, and summer. But as you get into courses that are more specialized for your major, you might see them scheduled only in the fall, or only in the spring. We may also use Shared Services Distance Learning (SSDL) to bring in online courses from other colleges. If you need a course that is tagged with "SSDL" you'll need to work with Academic Advising during registration to request that course.

- All the courses written into the sequences below are available at BRCC. However, MTH 265 is taught only in the fall semester, and MTH 266 / MTH 267 / MTH 288 are spring only. If you get out of sequence and need these courses in a different semester from when they're offered, you'll need to make an SSDL request.
- The MTH 246 and MTH 283 electives are only available through SSDL.

Sequenced curriculum - MTH 263 start

First semester

Course number	Course title	Credits	If there is a choice, what does your school require?
ENG 111	College Composition I	3	
SDV (101 for STEM preferred)	Orientation for STEM transfer	1	
MTH 263	Calculus I	4	
UCGS History		3	
CST 100 or 110	Principles of Public Speaking or Introduction to Human Communication	3	
Total credits		14	

Second semester

Course number	Course title	Credits	If there is a choice, what does your school require?
ENG 112	College Composition II	3	
MTH 264	Calculus II	4	
UCGS Lit/Humanities/Arts		3	
UCGS Social and Behavioral Science		3	
Additional requirements or free A.S. Science electives as needed		3	
Total credits		16	

Third semester

Course number	Course title	Credits	If there is a choice, what does your school require?
MTH 265	Calculus III	4	
UCGS Natural Science		4	
UCGS Lit/Humanities/Arts		3	
Additional requirements or free A.S. Science electives as needed		4	
Total credits		15	

Fourth semester

Course number	Course title	Credits	If there is a choice, what does your school require?
Two courses from MTH 266, MTH 267, MTH 288	Linear Algebra, Differential Equations, Discrete Math	6	
Additional requirements or free A.S. Science electives as needed		9	
Total credits		15	

The above plan shows 60 total credits. A minimum of 60 credits is needed to complete the A.S. Science program. If you already have credit for Precalculus (MTH 161+162 or MTH 167) those credits will count towards your electives total, and you'll have less to take at the end.

Sequenced curriculum - MTH 167 start

Students with a Precalculus placement can still complete the Mathematics requirements in two years if they are starting in MTH 167 in the fall and can use the summer between their first and second year to complete MTH 264 (Calculus II).

First semester

Course number	Course title	Credits	If there is a choice, what does your school require?
ENG 111	College Composition I	3	
SDV (101 for STEM preferred)	Orientation for STEM transfer	1	
MTH 167	Precalculus with Trigonometry	5	
UCGS History		3	
CST 100 or 110	Principles of Public Speaking or Introduction to Human Communication	3	
Total credits		15	

Second semester

Course number	Course title	Credits	If there is a choice, what does your school require?
ENG 112	College Composition II	3	
MTH 263	Calculus I	4	
UCGS Lit/Humanities/Arts		3	
UCGS Social and Behavioral Science		3	
Additional requirements or free A.S. Science electives as needed		3	
Total credits		16	

Summer catch-up

Course number	Course title	Credits	If there is a choice, what does your school require?
MTH 264	Calculus II	4	
Total credits		4	

Third semester

Course number	Course title	Credits	If there is a choice, what does your school require?
MTH 265	Calculus III	4	
UCGS Natural Science		4	
UCGS Lit/Humanities/Arts		3	
Additional requirements or free A.S. Science electives as needed		3	
Total credits		14	

Fourth semester

Course number	Course title	Credits	If there is a choice, what does your school require?
<i>Two courses from MTH 266, MTH 267, MTH 288</i>	Linear Algebra, Differential Equations, Discrete Math	6	
Additional requirements or free A.S. Science electives as needed		6	
Total credits		12	

The above plan shows 61 total credits. A minimum of 60 credits is needed to complete the A.S. Science program.

Sequenced curriculum - MTH 161 start

Students with a Precalculus placement who start in MTH 161 will generally need three years to complete the Mathematics requirements. This is a good option if you want to move at a slower pace and have a lighter course load each semester.

First semester

Course number	Course title	Credits	If there is a choice, what does your school require?
ENG 111	College Composition I	3	
SDV (101 for STEM preferred)	Orientation for STEM transfer	1	
MTH 161	Precalculus I	3	
CST 100 or 110	Principles of Public Speaking or Introduction to Human Communication	3	
Total credits		10	

Second semester

Course number	Course title	Credits	If there is a choice, what does your school require?
ENG 112	College Composition II	3	
MTH 162	Precalculus II	4	
UCGS History		3	
Total credits		10	

Third semester

Course number	Course title	Credits	If there is a choice, what does your school require?
MTH 263	Calculus I	4	
UCGS Natural Science		4	
UCGS Lit/Humanities/Arts		3	
Total credits		11	

Fourth semester

Course number	Course title	Credits	If there is a choice, what does your school require?
MTH 264	Calculus II	4	
UCGS Lit/Humanities/Arts		3	
Additional requirements or free A.S. Science electives as needed		3	
Total credits		10	

Fifth semester

Course number	Course title	Credits	If there is a choice, what does your school require?
MTH 265	Calculus III	4	
UCGS Social and Behavioral Science		3	
Additional requirements or free A.S. Science electives as needed		3	
Total credits		10	

Sixth semester

Course number	Course title	Credits	If there is a choice, what does your school require?
<i>Two courses from MTH 266, MTH 267, MTH 288</i>	Linear Algebra, Differential Equations, Discrete Math	6	
Additional requirements or free A.S. Science electives as needed		3	
Total credits		9	

The above plan shows 60 total credits. A minimum of 60 credits is needed to complete the A.S. Science program.