

# Virginia Commonwealth University Bachelor of Science in Mathematical Sciences with a concentration in Operations Research

Associate Transfer Degree Plan in Mathematics

TRANSFER GUIDE

Catalog Years: 2023-2025

## COURSE REQUIREMENTS

Complete at VCCS					Complete at		
BACHELOR'S DEGREE REQUIREMENT		SATISFIED BY			BACHELOR'S DEGREE REQUIREMENT		
Course	Credits	Gen ED*	CC Course	Notes	Course	Credits	Notes
UNIV 101	1-2		SDV 100 College Success Skills or 101 Orientation		Foreign language 101-102 (by course or placement)	0-6	This requirement can be waived if students completed 3 or more years of a foreign language at high school.
UNIV 111-112	3	PUA	ENG 111 College Comp I	UNIV 111 is waived and students receive 3 credits for UNIV 112.	MATH 310	3	Take at VCU unless MTH 266 is taken at CC.
UNIV 200	3	UA	ENG 112 College Comp II		MATH 300	3	Take at VCU unless MTH 288 is taken at CC.
General Education	3	PUA	Any UCGS Art or Humanities	These two courses must come from two different disciplines.	SSOR 480	3	
General Education	3	UA	Any UCGS Art, Humanities, or Literature		SSOR 485	1	
General Education	3	PUA	Any UCGS Social & Behavioral Science	Cannot be a history course.	STAT 309	3	
General Education	3	PUA	Any UCGS History		Select from MATH 401, MATH 407, or MATH 409	3	
BIOL/Z 151 Or CHEM/Z 101	4	PUA	BIO 101 or CHM 111	Select first class in two-semester sequence.	OPER 327	3	
MATH 200	4	PUA	MTH 263 Calc I	A minimum score of 3 on the AP Calculus AB or BC exam will result in credit for MATH 200.	OPER 427	3	
BIOL/Z 152 Or CHEM/Z 102	4	UA	BIO 102 or CHM 112	Select second class in two-semester sequence.	OPER 428	3	
General Education	3-4	UA	Any UCGS course		STAT 403	3	

MATH 201	4		MTH 264 Calc II		Select one of the following computing sequences: CMSC 245-246, CMSC 255-256, or EGRE 245-246	6-7	
MATH 307	4		MTH 265 Calc III		Concentration electives	9-12	
MATH 310 Or MATH 301 Or MATH 300	3		MTH 266 Linear Alg, or MTH 267 Diff Equations, or MTH 288 Discrete Math	Math 310 and MATH 300 are required for the bachelor's degree; MATH 301 is not required and will transfer as an elective	Electives	7-17	
MATH 310 Or MATH 301 Or MATH 300	3		MTH 266 Linear Alg, or MTH 267 Diff Equations, or MTH 288 Discrete Math	Math 310 and MATH 300 are required for the bachelor's degree; MATH 301 is not required and will transfer as an elective			
STAT 212	3		MTH 245 Statistics				
PHYS 201 or PHYS 207	4		PHY 201 or PHY 241	Fulfills natural science elective requirement.			
VCU equivalents	5-6		Math prerequisites (MTH 161 PreCalculus I / MTH 162 PreCalculus II, MTH 167 PreCalculus with Trigonometry)	Or electives if student places into MTH 263 Calculus I.			
			Additional transfer electives, if needed to meet 60 credits.				

**CREDITS PRE-TRANSFER: 60**

**CREDITS POST-TRANSFER: 60**

\* **A** = Completion of the Associate Degree satisfies this General Education Requirement. **U** = This course satisfies a Uniform Certificate of General Studies requirement.  
**P** = This course satisfies a Passport requirement.

## TRANSFER GUIDANCE

**This degree program is covered by VCU's Guaranteed Admission Agreement.**

**By meeting the following criteria, you are guaranteed admission to the BS in Mathematical Sciences:**

- Earn a transfer associate degree.
- Earn a minimum GPA of 2.5 for your associate degree.

- Earn grades of "C" or higher in all community college courses. VCU will accept credit for repeated courses for "D" or "F" grades.

### IMPORTANT LINKS & DATES:

- **University Transfer Center:** <https://transfer.vcu.edu/>.

- **Admission Application:** By March 15 for fall admission and November 1 for spring at <https://www.vcu.edu/admissions/apply/>.
- **Financial Aid:** <https://semss.vcu.edu/our-services/financial-resources-and-guidance/>.
- **FAFSA - Free Application for Federal Student Aid:** March 1 for fall semester at <https://studentaid.gov/h/apply-for-aid/fafsa>.

#### WHAT SHOULD I CONSIDER WHEN SELECTING COURSES?

- Complete your English courses and start your math sequence in your first year.
- Create a schedule for all required courses, pay attention to prerequisites and when courses are offered. For help, see Transfer Steps and Resource Center at [www.TransferVirginia.org](http://www.TransferVirginia.org).
- Connect with an advisor at your community college and the VCU Transfer Center (<https://transfer.vcu.edu/>) in your first semester.

#### IS THIS DEGREE RIGHT FOR ME?

- Statistics can be found in almost every sector of the world of work. Students majoring in math should consider if they want to use math skills directly or indirectly in the workplace. This may determine the types of experiences and further education necessary to prepare for an area of interest.
- People with math backgrounds may work in jobs with titles such as analyst, research associate, technical consultant, computer scientist, or systems engineer to name a few.
- While classical applied mathematics uses mathematical techniques to solve physical science problems, the areas of applications of operations research are diverse, ranging from business and industry to federal and military operations. Operations research is the mathematical discipline devoted to the study of complex systems through the creation and analysis of mathematical models. By developing and exploring the properties of such models, operations research analysts increase our understanding of both the actual behavior of the system of interest under present conditions and how this behavior could change when circumstances are altered.

#### WHAT IS THE IMPACT ON MY DEGREE OF WORK I HAVE ALREADY COMPLETED?

- **Associate Transfer Degree Completion:** The completion of a transfer associate degree results in all lower-division general education requirements being met when you transfer to VCU.
- **Dual Enrollment – Completion of Associate Degree in HS:** The completion of an associate degree concurrent with high school results in 60 credits of coursework applied towards your degree and VCU's general education courses will be satisfied. High school students must apply to VCU as freshman applicants for orientation and engagement purposes.
- **Credit for Prior Learning:** VCU accepts AP, IB, Cambridge, CLEP, DANTES, and military credits.
- **Catalog Year:** VCU will honor the degree requirements of the VCU Undergraduate Bulletin in effect at the time of the student's first post-high school enrollment into an appropriate associate degree at the two-year institution. Students must stay enrolled at their community college and take no more than four years to complete their associate degree. Students must also enroll at VCU within one year of completing their associate degree.

#### IS THIS COLLEGE RIGHT FOR ME?

- Located in downtown Richmond, within two hours of the beach, the mountains and Washington DC, VCU provides top-ranked academic programs, research opportunities and an urban setting so students can live and learn in the real world.

- VCU is a large, public research institution dedicated to the success and well-being of students and the Richmond community.
- Diversity, inclusion and equity are deeply ingrained core values at VCU. If you are looking to connect with a broad range of people, come join us!

Learn more about our college at [www.TransferVirginia.org](http://www.TransferVirginia.org).

#### DID YOU KNOW THAT...

- Completing your associate transfer degree satisfies all lower division general education requirements and increases the likelihood you will complete your bachelor's degree?
- Exceeding 3 years or 90 credits at your community college could exhaust your financial aid there and reduce your future financial aid at VCU?

#### WHAT CAN I DO WITH THIS DEGREE?

Explore possible careers, salaries, and job outlook at [www.TransferVirginia.org](http://www.TransferVirginia.org).

#### PROGRAM SUCCESSES & HIGHLIGHTS

When you graduate, you will be prepared for a variety of technologically oriented jobs such as data analyst, research associate or technical consultant, to name a few, that span a wide array of professional areas. You will also be prepared to continue on to graduate studies to become an actuary, secondary school teacher, college professor or other STEM-focused professional in business, government or industry.

#### WHAT ARE MY CHANCES FOR GETTING ACCEPTED?

If you apply through general application instead of through the Guaranteed Admission Agreement, you will be considered for admission with all other transfer applicants.

Learn more about applying at [www.TransferVirginia.org](http://www.TransferVirginia.org).

#### DO MORE WITH YOUR DEGREE!

In the Department of Statistical Sciences and Operations Research, you can pursue the Bachelor of Science in mathematical science, with a concentration in one of two areas: statistics or operations research. The Department of Mathematics offers an accelerated B.S. and M.S. program that allows qualified students to earn both a bachelor's degree and a master's degree in mathematical sciences in five years.

#### OTHER THAN CLASSES, ARE THERE OTHER PROGRAM REQUIREMENTS?

All students must complete at least one VCU "REAL" experiential learning activity in order to graduate from VCU. Examples of REAL activities include: internships, research, and service learning. This requirement may be satisfied by completing a 300-level (or higher) REAL course or through an approved REAL co-curricular experience.

Learn more at <https://real.vcu.edu/>.

