

**VIRGINIA COMMONWEALTH UNIVERSITY
GRADUATION WORKSHEET**

**BACHELOR OF SCIENCE IN
MATHEMATICAL SCIENCES
(Mathematics and Applied Mathematics)
COLLEGE OF HUMANITIES AND SCIENCES**

Name _____

Date _____

Questions about transfer credit evaluation should be directed to
Coordinator of Academic Advising, 205 Hibbs, 828-1673.

SS # _____

VCU COURSES ACCEPTED TRANSFER COURSES SEMESTER CREDITS

**GRADE LOWER UPPER QUALITY
 LEVEL LEVEL POINTS**

GENERAL REQUIREMENTS

WRITING: ENGL 101-200 (with a minimum grade of C in each) Students must complete 24 credits before enrolling in ENGL 200.

ENGL 101	_____	_____	_____	_____	_____
ENGL 200	_____	_____	_____	_____	_____

AND Two writing intensive (WI) courses, at least one of which must be in the student's major (See Approved List A and Schedule of Classes each semester)

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

MATHEMATICS AND STATISTICAL REASONING: MATH 151 (by course or placement) Completion of Mathematical Sciences major courses fulfills requirement. No more than 4 credits in 100 level mathematics (MATH) courses may be applied toward degree requirements.

MATH 151	_____	_____	_____	_____	_____
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_____ If checked, student must take the mathematics placement test. To receive the maximum of 4 credits of transfer credit at the 100 level in mathematical sciences, student must place at the MATH 200 Calculus level on the mathematics placement test.

ETHICAL PRINCIPLES: (3 credits) Either within the major or from another department. (See Approved List C).

_____	_____	_____	_____	_____	_____
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VISUAL AND PERFORMING ARTS. (2-4 credits). One course in the visual or performing arts. (See Approved List E)

_____	_____	_____	_____	_____	_____
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LITERATURE : (3 credits) One literature course. (See Approved List F)

_____	_____	_____	_____	_____	_____
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URBAN ENVIRONMENT: (3 credits) Coursework or internship, within the major or through general education, dealing with aspects of modern urban life. (See Approved List K)

_____	_____	_____	_____	_____	_____
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VCU COURSES

ACCEPTED TRANSFER COURSES

	<u>SEMESTER CREDITS</u>		
<u>GRADE</u>	<u>LOWER LEVEL</u>	<u>UPPER LEVEL</u>	<u>QUALITY POINTS</u>

NATURAL SCIENCES: (A) Complete one of the following sequences:

BIOL 151-152, BIOZ 151L-152L **OR** PHYS 207-208 or PHYS 201-202 **OR** CHEM 101-102, CHEZ 101L-102L

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

B) Complete another course, including laboratory, in the natural sciences from List D. This course must be in the biological sciences if the CHEM or PHYS sequence was selected in (A) above; it must be in the physical sciences if the BIOL sequence was selected in (A).

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

(C) Complete one other course in the natural sciences **OR** complete a minor or second major offered outside the Department of Mathematical Sciences.

(Students in the Extended Teacher Preparation program are considered to have a second major outside the Department of Mathematical Sciences.)

If second major or minor is to be used, SPECIFY: _____

CIVILIZATION: (8-9 credits) Students must take one course (3 credits) from **EACH** of the following areas (9 credits total) but no more than six credits in any one discipline; **OR** take two 4-credit interdisciplinary courses (8 credits total) that combine elements of A, B, and C.

A. Historical and Cultural Origins. One course (3 credits) that expands students' understanding of the historical and cultural roots of the modern world. (See Approved List G)

B. American (U.S.) Studies. One course (3 credits) that explores contemporary United States society with particular attention to aspects of its historical development. (See Approved List H)

C. Global Studies. One course (3 credits) with an explicit focus on the interactions of nations, peoples, and social economic forces in today's integrated global society. (See Approved List I)

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

FOREIGN LANGUAGE: (0-8 credits). Competency through the elementary level (102 or equivalent) by course or placement.

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

HUMAN BEHAVIOR: (4-6 credits). One of the following options: (1) 2 courses (6 credits) in different disciplines focusing on human behavior **OR** (2) a 4-credit interdisciplinary course that combines elements of several of the social sciences. (See Approved List J)

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

THIS FORM SHOULD BE COMPLETED AND SIGNED BY THE STUDENT AND THE STUDENT'S ADVISOR DURING THE STUDENT'S JUNIOR YEAR. THIS FORM MUST BE COMPLETED SHOWING COURSES, GRADES, AND QUALITY POINTS AND BE PRESENTED WITH THE DEGREE APPLICATION WHEN IT IS SUBMITTED TO THE UNDERGRADUATE CREDENTIALS COMMITTEE.

The Bachelor of Science degree awarded by the Department of Mathematics and Applied Mathematics requires a minimum of 41 credits above the 100 level in courses labeled CMSC, MATH, or STAT. At least 24 of these credits must be at the 300-500 levels. Place on this page at least those CMSC, MATH, and STAT credits that are needed to complete the required core courses; those courses that are needed to meet the minimum credit requirements; and those courses that are needed to fulfill the requirements of the chosen concentration. CMSC, MATH, and STAT courses that cannot be credited toward a major in the mathematical sciences cannot be listed on this page (see the Bulletin). CMSC, MATH, and STAT courses that can be credited toward a mathematical sciences major beyond those required for the concentration may be listed here or as electives on the next page. In addition to the credit requirements, a student must attain a 2.0 grade point average (or better) based on all grades received in all attempts (except those removed through the VCU Repeated Course option) in the VCU courses listed on this page; credits in CMSC, MATH, and STAT courses not listed on this page are not used when computing the “Major GPA.” Transfer credit in the major may be adjusted depending on the VCU courses selected.

Please use the parentheses to check VCU courses which the student has repeated.

SEE LAST PAGE OF THIS WORKSHEET FOR ADDITIONAL DEGREE REQUIREMENTS.

Concentration: _____

<u>VCU COURSES</u>	<u>ACCEPTED TRANSFER COURSES</u>	<u>SEMESTER CREDITS</u>			
		<u>GRADE</u>	<u>LOWER LEVEL</u>	<u>UPPER LEVEL</u>	<u>QUALITY POINTS</u>
Core courses required of all majors:					
() MATH 200 _____		_____	_____	_____	_____
() MATH 201 _____		_____	_____	_____	_____
() MATH 211 _____		_____	_____	_____	_____
() STAT 212 _____		_____	_____	_____	_____
() CMSC 255 _____		_____	_____	_____	_____
Other mathematical sciences courses (see below):					
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
() _____		_____	_____	_____	_____
Major GPA: _____	Totals (this page only)		_____	_____	_____

Listed below are the course requirements for the usual concentrations for degrees in mathematical sciences.

<p><u>Applied Mathematics</u> MATH 301 Differential Equations; MATH 307 Multivariate Calculus; MATH 310 Linear Algebra; MATH 512 Complex Analysis for Applications; MATH 517-518 Methods of Applied Mathematics; and six additional upper-level credits in mathematical sciences.</p>	<p>(MATH 302 Numerical Calculus, MATH 437 Applied Partial Differential Equations, and MATH 511 Applied Linear Algebra are recommended.) Students in this concentration should elect at least one upper-level course in chemistry or physics. (CHEM 510 Atomic and Molecular Structure is recommended.)</p>	<p><u>Mathematics</u> MATH 307 Multivariate Calculus; MATH 310 Linear Algebra; MATH 501 Introduction to Abstract Algebra; MATH 507-508 Analysis; MATH 509 General Topology; and six additional upper-level credits in mathematical sciences.</p>
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COMPUTER LITERACY: All students, including transfer students, are required to pass the Computer Proficiency Assessment prior to graduation. Many students will have requisite knowledge through personal means to pass the Computer Proficiency Assessment upon entry to VCU. **Information about the Assessment and related Tutorials can be viewed on the Web at <http://www.vcu.edu/cte/smartforce>.** INFO 160, 161 and 162 (all three) or transfer computer literacy courses may be used to fulfill the requirement.

Date Assessment passed: _____ OR Equivalent Course _____

ELECTIVES:

Electives are the courses beyond those which satisfy general education and major requirements and which are a part of the 120 credits needed for the undergraduate degree. Approved electives should not duplicate or attempt to replace required courses (e.g. MGMT 301 nor STAT 210 to replace STAT 212). No more than 3 credits in 100-level mathematical sciences courses or their equivalent may be applied toward degree requirements (e.g. INFO 160, 161, 162, 163 parallel CMSC 128).

<u>VCU COURSES</u>	<u>ACCEPTED TRANSFER COURSES</u>	<u>SEMESTER CREDITS</u>			
		<u>GRADE</u>	<u>LOWER LEVEL</u>	<u>UPPER LEVEL</u>	<u>QUALITY POINTS</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Asterisk (*) courses to be used for ____ minor or ____ second major in _____.

Total Number of Credits to be applied to degree: _____

ADDITIONAL DEGREE REQUIREMENTS:

1) Cumulative 2.00 GPA required for the major and total degree; 2) 120 credits including no more than 4 in physical education activity courses; 3) 45 credits in upper level courses (courses from other institutions will count at the level at which they were taught at the other institution); 4) last 30 credits taken at VCU.

ALSO: Courses taken as major or minor courses may also be used to fulfill General Requirements when the courses are shown on the Approved Lists. However, no one course can be used to fulfill two General Education requirements, with the exception of courses used to complete the writing intensive requirement.

For information on internships/ career-related employment/volunteer career development SEE the Career Explorations Web Page at <http://www.vcu.edu/safweb/careers/explore/explore.html>.

List all completed courses not to be applied toward degree requirements:

SIGNATURES: Plan of Study Student _____ Date _____
 Advisor _____ Date _____
 Cred. Comm. _____ Date _____
 Degree Applic. Student _____ Date _____
 Advisor _____ Date _____
 Cred. Comm. _____ Date _____