

The Office of Counseling and Career Services

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DUTCHESS COMMUNITY COLLEGE AND THE MATHEMATICS MAJOR

Mathematics is the study of quantitative relationships expressed in numbers and symbols. It focuses on mathematical concepts and theories and involves their formulation, testing, interpretation, and practical application. Mathematics is usually referred to as either pure (more theoretical and abstract) or applied (more practical and visibly problem solving). Mathematics in some form or manner is used by just about everyone. A minimal understanding and use of mathematics is considered basic to competent daily life. Major branches include arithmetic, algebra, geometry, trigonometry, calculus, probability, and statistics.

SOME RELATED OCCUPATIONS

Accountant-B	Computer Programmer-B	Metallurgist-B
Actuary-B/M	Credit Manager-AA/B	Meteorologist-B/D
Aerospace Engineer-B	Drafter-V	Nuclear Scientist-B/D
Airplane Pilot-AA/B	Educator-B/D	Pharmacologist-B
Appraiser-B	Electrician-V	Physicist-B/D
Architect-B	Financial Planner-B	Radar Technician-AA
Astronomer-D	Geologist-B	Statistician-B
Bank Officer-AA/B	Hydrologist-B	Surveyor-AA
Bookkeeper-AA	Mathematician-B/D	Systems Analyst-B
Cartographer-B	Market Research Analyst-B	Tool and Die Maker-V

ACADEMIC PREPARATION

Mathematics belongs both to the liberal arts and to the sciences. Accordingly, DCC students who plan to major in mathematics are advised to acquire a broad range of training in the liberal arts. *Liberal Arts-Mathematics (L.A.M.) is an appropriate program for students to begin their academic preparation for a major in mathematics. (The courses listed below are based on the first two years of requirements for a math major at RPI.)

DCC Courses (A.S. degree)

ENG 101 & ENG 102 English Composition I & II
MAT 221 & MAT 222 Calculus I & II
BHS 103 and choose one: HIS 104 or GOV 121
PHY 151 & PHY 152 Engineering Physics I & II
MAT 223 Calculus III
CPS 141 Intro to Computer Science
MAT 215 Linear Algebra
***Choose two: BIO 101/102, CHEM 121/122
Recommend: ECO 201 & 202, Microeconomics
& Macroeconomics
MAT 224 Differential Equations

RPI Course Requirements (B.S. degree)

**Humanities or Social Science Electives
Math 1010 Calculus I (DCC's MAT 222 receives elective credit
Humanities or Social Science Electives
Phys 1160 & Phys 1200 Physics I & II *** Science Electives
Math 1020 Calculus II
CSCI 1100 Computer Science I
****Electives
***Science Electives
Humanities or Social Science Electives
Math 2400 Intro to Differential Equations

* DCC students are advised to satisfy all requirements to complete an A.S. degree.

** The curricula leading to a B.S. in Mathematics at RPI requires six courses in Humanities or Social Science.

*** RPI requires four courses of Science Electives that must cover three different Science disciplines outside of Math. PHY 151/152 and CPS 141 will cover two disciplines. A third should be selected as suggested above.

**** RPI requires nine courses that are considered free electives.

DUTCHESS COMMUNITY COLLEGE AND SECONDARY EDUCATION: MATHEMATICS (SUNY NEW PALTZ)

Liberal Arts and Mathematics (L.A.M.) is an appropriate program for DCC students to begin their academic preparation for Secondary Education: Mathematics at SUNY New Paltz (LAH, LAT and LAX are also appropriate DCC programs for this major.)

The following is a recommended plan of study for DCC students who will graduate with an Associate in Science (A.S.) degree and apply for transfer to SUNY New Paltz as Secondary Education: Mathematics majors:

DCC Courses: L.A.M. (A.S.)

ENG 101 & ENG 102
 PHY 121 & PHY 122 or
 PHY 151, PHY 152, PHY 251
 MAT 221
 HIS 104
 MAT 222
 General Education Elective (six credits) Foreign Language
 BHS 103
 MAT 223
 CPS 141 (must include CPS 142)
 MAT 214
 MAT 215
 MAT 224 (transfers as Math Elective)
 LAM 100
 WFE 101

New Paltz Courses: Sec. Ed./Math

41160 & 41180 Freshman Composition I & II
 75221 & 75222 Fundamental Physics I & II or
 75201 & 75202 General Physics I & II
 64251 Calculus I
 58222 History of U.S. II
 64252 Calculus II
 **N.Y.S. Teacher Certification Requirement
 87376 Social Problems
 64253 Calculus III
 25210 Computer Science I Foundations
 64260 Foundations of Math
 64362 Linear Algebra
 64359 Ordinary Differential Equations

Other DCC courses that will fulfill New Paltz requirements: BHS 207 and PSY 204. (CPS 231 is recommended, but not required.)

Elective (4-6 credits) CPS 142 and students must select a course from appendix H

Free Elective (3-4 credits) Students must select a course from appendix E or F

A.A. or A.S. degree holders from DCC are considered to have met SUNY New Paltz's native General Education requirement, but not necessarily the mandated SUNY General Education requirements (students should consult a DCC advisor for further information)

** Students with no previous foreign language study must complete a two-semester sequence in a language. (Students who can be placed at an intermediate or advanced level must complete one course.)

SUNY New Paltz and DCC are currently seeking approval for a jointly registered teacher education program in Adolescent Education. Pending approval the program will facilitate the transfer of students, preparing to become certified mathematics teachers in grade 7-12, from DCC to New Paltz.