MATHEMATICS

SOME OCCUPATIONS RELATED TO INTEREST AND ABILITY IN MATHEMATICS

All Engineers Chemist Architect Economist

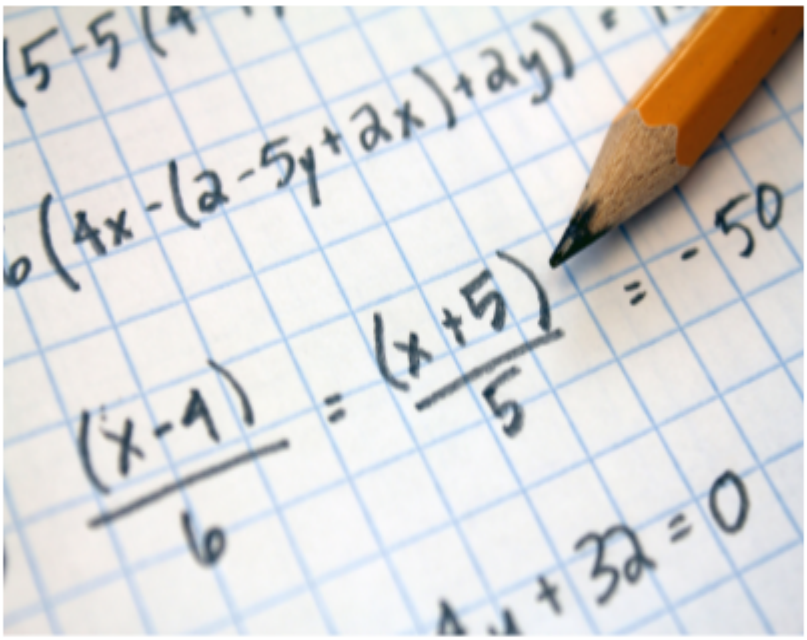
Forester Dentist Mathematics Teacher

Actuarial Clerk Worker Broadcasting Technician Electrician

Statistician/Business Dental Technician Broadcasting Technician

Commercial Draftsperson Development Technician Engineering Navigator

Airplane Pilot



Surveyor

Optometrist Physician

Bookkeeper Banker

Insurance Carpenter

Aerospace Plumber

Secretary Bank Cashier

Business Education Teacher Technician (Analyst & Engineering)

Machinist Electronic Technician Actuary Accountant

Systems Analyst Mathematical Statistician

MATHEMATICS

Course Length	Credit	Name of Course	Course Number	9	10	11	12	Prerequisite
1 Year	1	Math 1A	200B1X	X	X	_	_	Placement by the Math Department
1 Year	1	Math 1	204B1X	X	X	_	_	Placement by the Math Department
1 Year	1	Math 1 Advanced	206B1X	X	_	_	_	Placement by the Math Department
1 Year	1	Math 2A	210B1X	_	X	X	_	Math 1 or Math 1A
1 Year	1	Math 2	214B1X	X	X	X	_	Math 1
1 Year	1	Math 2 Advanced	216B1X	X	X	X	_	Math 1 or Advanced Math 1
1 Year	1	Math 3A	220B1X	#	X	X	X	Math 2 or Math 2A
1 Year	1	Math 3	224B1X	#	X	X	X	Math 2
1 Year	1	Math 3 Advanced	226B1X	#	X	X	X	Math 2 or Math 2 Advanced
1 Sem	.5	Vocational Math A/B	240B1A	_	_	_	X	Math 3 or Senior Status
1 Sem	.5	Mathematical Reasoning	246B1B	_	_	#	X	Math 3 or Senior Status
1 Sem	.5	Statistics	250B1B	#	X	X	X	Math 2 or Math 2 Advanced
1 Year	1	Advanced Placement Statistics [idx]	252B1X	#	X	X	X	Math 3 or Math 3 Advanced
1 Year	1	PHS-SNC Statistics [idx]	253B1X	_	X	X	X	Math 3 or Math 3 Advanced
1 Year	1	Math Analysis	255B1X	#	#	X	X	Math 3 or Math 3 Advanced
1 Year	1	Pre-Calculus	260B1X	#	#	X	X	Analysis or Math 3 Advanced
1 Year	1	PHS-SNC Calculus 1 [idx]	265B1X	_	_	X	X	Pre-Calculus and St. Norbert College Acceptance for SNC credit
1 Year	1	Advanced Placement Calculus 1 AB [idx]	266B1X	_	_	X	X	Pre-Calculus
1 Year	1	Calculus 1	267B1X	_	_	X	X	Pre-Calculus
1 Year	1	PHS-SNC Calculus 2 [idx]	275B1X	_	_	_	X	Calculus 1
1 Year	1	Advanced Placement Calculus 2 BC [idx]	276B1X	_	_	_	X	Calculus 1
1 Year	1	Calculus 2	277B1X	_	_	_	X	Calculus 1

\# Denotes an exception to the standard course sequence. The course is open to students with the pre-approval of both the Counseling and Math Departments. Please contact the PHS counseling department with questions.

[idx] This course is Grade Indexed

X Enrollment available to students in designated grade levels

X Department's recommended grade level for enrollment

200B1X – MATH 1A			
Year Course	Grades 9-10	1 Credit	Prerequisite: Placement by the high school Math Department
This course is designed as a first-year math course at the high school level for college-bound students. The students will gain a strong foundation in algebraic topics and skills. Students in this course find themselves engaged in various activities that have a strong problem solving emphasis. Regular daily assignments are required. A scientific calculator is required.			

204B1X – MATH 1			
Year Course	Grades 9-10	1 Credit	Prerequisite: Placement by the high school Math Department
The aim of the course is to introduce, clarify, unify, broaden and integrate the fundamental concepts of Algebra, while integrating topics from Statistics and Probability. Topics meeting the Common Core State Standards are explored while actively engaging students in a variety of best practices of mathematics instruction. Regular daily assignments are required. A scientific calculator is required.			

206B1X – MATH 1 ADVANCED			
Year Course	Grade 9	1 Credit	Prerequisite: Placement by the high school Math Department
The aim of the course is to introduce, clarify, unify, broaden and integrate the fundamental concepts of Algebra, Geometry, Trigonometry, Statistics and Probability with a strong emphasis on college preparatory Algebra. This class is oriented toward the student interested in pursuing a career in the science, technology, engineering or mathematics field. The Common Core State Standards are explored while actively engaging students in an effort to help them obtain a thorough understanding of mathematics. Regular daily assignments are required. A scientific calculator is required.			

210B1X – MATH 2A			
Year Course	Grades 10-11	1 Credit	Prerequisite: Math 1 or Math 1A
This course is designed to follow Math 1A or Math 1. This is the second course in a sequence of college preparatory courses. Emphasis will be given to geometry, statistics and probability, as well as a continued study of algebra topics. Students will be engaged in various activities meant to develop problem solving skills. Regular daily assignments are required. A scientific calculator is required.			

214B1X – MATH 2			
Year Course	Grades 9-11	1 Credit	Prerequisite: Math 1
The aim of the course is to introduce, clarify, unify, broaden and integrate the fundamental concepts of Algebra, Geometry, Trigonometry, Statistics and Probability with a strong emphasis on college preparatory Geometry. Topics meeting the Common Core State Standards are explored while actively engaging students in a variety of best practices of mathematics instruction. Regular daily assignments are required. A scientific calculator is required.			

216B1X– MATH 2 ADVANCED			
Year Course	Grades 9-11	1 Credit	Prerequisite: Math 1
The aim of the course is to introduce, clarify, unify, broaden and integrate the fundamental concepts of Algebra, Geometry, Trigonometry, Statistics and Probability with a strong emphasis on college preparatory Geometry. This class is oriented toward the student interested in pursuing a career in the science, technology, engineering or mathematics field. The Common Core State Standards are explored while actively engaging students in an effort to help them obtain a thorough understanding of mathematics. Regular daily assignments are required. A scientific calculator is required.			

220B1X – MATH 3A			
Year Course	Grade 10-12	1 Credit	Prerequisite: Math 2 or 2A
This course is designed to follow Math 2 or 2A. This is the third course in a sequence of college preparatory classes. Emphasis will be given to any geometry and probability topics not covered in Math 2A as well as to beginning concepts specific to a second year algebra course. Students will be engaged in various activities meant to develop problem solving skills. Regular daily assignments are required. A scientific calculator is required.			

224B1X – MATH 3			
Year Course	Grade 10-12	1 Credit	Prerequisite: Math 2
This course is designed to expand on the topics covered in Math 1 and Math 2. It reviews and clarifies many of the topics discussed in previous years, but has an emphasis on second year algebra content. It will cover any remaining concepts relating to Algebra, Geometry, Trigonometry, Statistics and Probability. Regular daily assignments are required. A scientific calculator is required.			

226B1X – MATH 3 ADVANCED			
Year Course	Grade 10-12	1 Credit	Prerequisite: Math 2 Advanced
The aim of this course is to introduce, clarify, unify, broaden, and integrate the fundamental concepts of algebra, geometry, trigonometry, statistics and probability with a strong emphasis on algebra 2 and trigonometry. Topics are explored while actively engaging students in a variety of best practices of mathematical instruction. The pace of instruction will be aimed towards college bound students interested in pursuing a field of study requiring a demanding and rigorous background in mathematics. Regular daily assignments are required. A scientific calculator is required.			

240B1A - VOCATIONAL MATH A/B*			
Semester Course	Grades 12	.5 Credit	Prerequisite: Math 3 or Senior Status
Students who successfully complete this course as a senior will receive technical college credit and this credit may transfer to other tech schools and colleges. Topics covered include mathematical applications of fractions, decimals, ratios, proportions and percent, linear, area and volume measurements, plane geometry and solid figures. Practical applications of mathematics are the primary focus of this course. ***This course is transcribed with NWTC's Vocational Math A course (10-804-301) & Vocational Math B course (10-804-302) for 2 credits.**			

246B1B - MATHEMATICAL REASONING*			
Semester Course	Grades 12 (#)	.5 Credit	Prerequisite: Math 3 or Senior Status
All students, regardless of their future plans, need to be able to make reasonable decisions about fiscal, environmental, and health issues that require quantitative reasoning skills. An activity based approach is used to explore numerical relationships, graphs, proportional relationships, algebraic reasoning, and problem solving using linear, exponential and other mathematical models. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of contexts. This course may be used as the first of a two part sequence that ends with Quantitative Reasoning as the capstone general education math requirement. ***This course is transcribed with NWTC's Mathematical Reasoning course (10-804-134) for 3 credits when taken as a junior or senior.**			

250B1B – STATISTICS			
Semester Course	Grades 10–12	.5 Credit	Prerequisite: Math 2 or Math 2 Advanced
This course broadens and enhances the understanding of statistical concepts introduced in earlier Algebra and Geometry courses. This class explores topics of descriptive and inferential statistics and hypothesis testing. This course is intended for those students planning on post-secondary education. A scientific calculator is required. Can be taken simultaneously with other math courses.			

252B1X – ADVANCED PLACEMENT STATISTICS			Grade Indexed (see pg 16)
Year Course	Grades 10–12 (#)	1 Credit	Prerequisite: Math 3 or Math 3 Advanced
This is a yearlong course that introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad areas of study: Exploring Data, Sampling and Experimentation, Anticipating Patterns, and Statistical Inference. The results of the A.P. Exam will determine the level of advanced placement and college credit they may earn. A scientific calculator is required. Graphing calculator recommended.			

253B1X – PHS-SNC STATISTICS			Grade Indexed (see pg 16)
Year Course	Grades 10–12 (#)	1 Credit	Prerequisite: Math 3 or Math 3 Advanced
This is a yearlong course that introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad areas of study: Exploring Data, Sampling and Experimentation, Anticipating Patterns, and Statistical Inference. Students successfully completing this course will receive 4 credits in Statistics from St. Norbert College and students can also choose to take the AP Statistics exam. A scientific calculator is required. Graphing calculator recommended.			

255B1X - MATH ANALYSIS			
Year Course	Grades 11-12 (#)	1 Credit	Prerequisite: Math 3 or Math 3 Advanced
This course extends the study of advanced mathematics beyond college prep algebra, geometry and Algebra 2 while exploring a variety of concepts. Topics include modeling, statistics, sequences, series, conic sections, advanced algebra, advanced trigonometry, vectors, logarithms, advanced functions and matrices. A scientific calculator is required. Can be taken after pre-calculus for students not pursuing a math-related field.			

260B1X – PRE-CALCULUS			
Year Course	Grades 11-12 (#)	1 Credit	Prerequisite: Analysis or Math 3 Advanced
This course extends the depth of study of advanced mathematics while exploring a variety of concepts including analytic geometry, vectors, conic sections, matrices, sequences, series and linear algebra. In addition, a theoretical and deeper understanding of advanced			

polynomial, exponential, logarithmic and trigonometric functions is explored. The tone of instruction will be aimed toward college bound students interested in a demanding and rigorous study of mathematics. A scientific calculator is required.

265B1X - PHS-SNC CALCULUS 1			Grade Indexed (see pg 16)
Year Course	Grade 11-12	1 Credit	Prerequisite: Pre-Calculus and St. Norbert College Acceptance for SNC credit

This course will involve the theoretical development of the elements of Differential and Integral Calculus. The tone of instruction will be aimed towards college bound students interested in a demanding and rigorous study of mathematics. Students successfully completing this course will receive 4 credits in Calculus 1 from St. Norbert College and students can also choose to take the AP Calculus AB exam.

Students will be required to take the St. Norbert College final exam.

266B1X – ADVANCED PLACEMENT CALCULUS 1 AB			Grade Indexed (see pg 16)
Year Course	Grade 11-12	1 Credit	Prerequisite: Pre-Calculus

This course will cover the same curricula as the PHS-SNC Calculus class (265B1X) described above. The difference is that students in this course will not earn college credit through St. Norbert College.

Students will be required to take the AP Calculus AB exam in May.

267B1X - CALCULUS 1			
Year Course	Grade 11-12	1 Credit	Prerequisite: Pre-Calculus

This course will cover the same curricula as the PHS-SNC Calculus class (265B1X) described above. The difference is that students in this course will not earn college credit through St. Norbert College and will not be taking the AP Calculus AB exam in May.

This course will not be grade indexed.

275B1X – PHS-SNC CALCULUS 2			Grade Indexed (see pg 16)
Year Course	Grade 12	1 Credit	Prerequisite: Calculus 1

This course gives students who have taken Calculus 1 prior to their senior year the opportunity to continue their study of mathematics while at PHS. It is an extension of topics addressed in Calculus 1, as well as a study of topics unique to a second course in Calculus. These topics include advanced integration techniques, using series to approximate functions, the calculus of vectors and first- and second-order differential equations. Students taking this course will receive 4 college credits from St. Norbert College and can also choose to take the AP Calculus BC exam.

Students will be required to take the St. Norbert College final exam.

276B1X - ADVANCED PLACEMENT CALCULUS 2 BC			Grade Indexed (see pg 16)
Year Course	Grade 12	1 Credit	Prerequisite: Calculus 1

This course gives students who have taken Calculus 1 prior to their senior year the opportunity to continue their study of mathematics while at PHS. This course will cover the same curricula of PHS-SNC Calculus 2 (275B1X) described above. The difference is that students in this course will not earn college credit through St. Norbert College.

Students taking this course are required to take the AP Calculus BC exam in May.

277B1X – CALCULUS 2			
Year Course	Grade 12	1 Credit	Prerequisite: Calculus 1

This course will cover the same curricula of PHS-SNC Calculus 2 (275B1X) described above. The difference is that students taking this course will not earn college credit through St. Norbert College and will not be taking the AP Calculus BC exam in May.

This course will not be grade indexed.