



# Mathematics- Associate in Science (2020-21 Catalog)

## SEMESTER-BY-SEMESTER PROGRAM MAP FOR FULL-TIME STUDENTS

Courses are listed in preferred order of completion

Plans can be modified to fit student needs by adding more semesters

**Choose your courses with your Advisor.**

Developmental Education Courses (if required)			<input type="checkbox"/>	MATH020	Pre-Algebra
<input type="checkbox"/>	ACLS050	Introduction to Academic Literacy	<input type="checkbox"/>	MATH022	Elementary Algebra
<input type="checkbox"/>	ENGL027	Writing Skills Workshop	<input type="checkbox"/>	MATH026	Intermediate Algebra

Location: B= BETH, M= MROE, S=SBTH, E= ESTN, D= DIST \*subject to change

complete	Course #	Course Title	Credits	Gen Ed	Fall	Winter	Spring	Summer	Pre-requisites / Co-requisites	
Semester 1	<input type="checkbox"/>	COLS101	College Success	1		B, M, D	----	B, M, D	D	
	<input type="checkbox"/>	ENGL101	English I	3	Comm.	B, M, D, E	----	B, M, D, E	B, M, D	PRE: ENGL Placement Policy
	<input type="checkbox"/>	CMTH102	Introduction to Communication	3	Comm.	B, M, D	----	B, M, D	B, M, D	
	<input type="checkbox"/>	MATH150	Introductory Statistics	3	QL	B, M, D	---	B, M, D	B, M, D	PRE: MATH022 or Placement Policy
	<input type="checkbox"/>	MATH180	Calculus I	4	QL	B, M, D	---	B, M, D	B, M, D	PRE: MATH145 or 160 with C or better or Placement
		Total Semester Credits:	14							
Semester 2	<input type="checkbox"/>	SIT General Education Elective	3	QL	B	----	B, M	----	PRE: MATH176 or 180 with C or better	
	<input type="checkbox"/>	ENGL151L	English II (Literature) (D)	3	Comm.	B, M, D	---	B, M, D	---	PRE: ENGL101
	<input type="checkbox"/>	MATH181	Calculus II	4	QL	B, M, D	----	B, M	B, M	PRE: MATH176 with a C or better or Placement
	<input type="checkbox"/>	PHYS215	Physics for Science & Engineering I	5	Science	B, M, D	----	B, M	----	PRE or CO: MATH181
		Total Semester Credits:	15							
Semester 3	<input type="checkbox"/>	MATH210	Calculus III	4	QL	B, M	----	B, M	M	PRE: MATH181 with C or better or Placement
	<input type="checkbox"/>	PHYS225	Physics for Science & Engineering II	5	Science	B, M	----	B, M	----	PRE: PHYS215 with C or better
	<input type="checkbox"/>		AH General Education Elective	3	AH	B, M, D	D	B, M, D	B, M, D	Depends on course selected
	<input type="checkbox"/>		SSHB General Education Elective	3	SSHB	B, M, D	D	B, M, D	B, M, D	Depends on course selected
		Total Semester Credits:	15							
Semester 4	<input type="checkbox"/>	MATH211	Differential Equations	4	QL	B, M	----	B, M	----	PRE: MATH210 with a C or better
	<input type="checkbox"/>	CISC115	Computer Science	4	CL	B, M	----	B, M	----	PRE: MATH026 with a C or better or Placement
	<input type="checkbox"/>	MATH202	Discrete Math	3	QL	B, M, D	D	B, M, D	B, M, D	Depends on course selected
	<input type="checkbox"/>		Elective	3/4		B, M, D	D	B, M, D	B, M, D	Depends on course selected
	<input type="checkbox"/>		Elective	3/4		B, M, D	D	B, M, D	B, M, D	Depends on course selected
		Total Semester Credits:	17/19							
		Total Degree Credits	61/63							

General Education Requirements		
<input type="checkbox"/>	ENGL151L	Diversity
<input type="checkbox"/>		Writing Intensive

**Notes:**

- One General Education Elective (AH, SIT, SSHB) must be taken in a Writing Intensive (WI) section.
- If the student is not Calculus I ready in the first semester that this may push back taking Science courses as well as Math courses and require the student to take an extra semester or semesters.
- For the two general electives it is in the best interest of the student to focus on higher level Science, Technology, Engineering, and Math electives.

**\*It is the student's responsibility to be knowledgeable of NCC graduation requirements and to verify transfer requirements with the 4-year institution. Courses listed on the program map are based upon the assumption that prerequisites and courses taken in previous semesters will be successfully completed**

Arts & Humanities (AH)	Societies & Institutions Over Time (SIT)	Electives for A.A. & A.S. Degrees	Writing Intensive Gen Ed Courses (WI)
ARTA 100 Art and Visual Thinking ARTA 101 Art History Survey CMTH 110 Introduction to the Theatre CMTH 111 Acting I CMTH 115 Technical Theatre CMTH 117 Stagecraft CMTH 126 The Communication Arts CMTH 189 Stage Voice and Movement CMTH 190 Stage Production CMTH 206 Directing CMTH 211 Plays: Classical to Contemp. (G-WI) CMTH 212 Acting II CMTH 218 Theatre Portfolio CMTH 220 Introduction to Film DANC 101 Dance History DANC 110 Ballet I DANC 120 Modern Dance I DANC 130 Jazz I DANC 210 Ballet II DANC 220 Modern Dance II DANC 230 Jazz II ENGL 201 British Literature I (G-WI) ENGL 203 Shakespeare (G-WI) ENGL 205 American Literature I (G-WI) ENGL 211 Plays: Classical to Contemp. (G-WI) ENGL 215 Multicultural Adolescent Lit (G-WI) ENGL 250 Latin American Literature (G-WI) ENGL 251 British Literature II (G-WI) ENGL 253 Creative Writing ENGL 255 American Literature II (G-WI) ENGL 256 Modern Poetry (G-WI) ENGL 257 20th Century Lit by Women (G-WI) ENGL258 Fiction Writing ENGL 260 Contemporary Literature (G-WI) ENGL 264 Irish Literature (G-WI) ENGL 265 African-American Literature (G-WI) ENGL 267 Poetry Writing HUMA 121 The American Work Experience (G-WI) HUMA 140 Intro to Women & Gender Studies (G-WI) HUMA 150 Nature of the Environment HUMA210 Creativity and the Origin of Ideas JOUR 101 Journalism and Society Modern Language - All MDLA Courses MUSC 101 Introduction to Music PHIL 111 On Death and Dying (G-WI) PHIL 121 World Religions PHIL 201 Introduction to Philosophy PHIL 202 Ethics and Moral Problems (G-WI) PHIL 204 Asian Philosophies PHIL 211 Ancient Philosophy PHIL 215 Modern Philosophy PHIL 225 What is Freedom?	CMTH 221 History of Broadcasting GEOG 101 World Geography GEOG 151 Geography of the U.S. and Canada (G-WI) GLOB 130 Intro to Global Studies GLOB 160 Field Experience & Acad Research in GS GLOB 230 Global Studies Capstone HIST 103 Ancient and Medieval History HIST 113 American History I (G-WI) HIST 121 The Black Experience (G-WI) HIST 123 African Civilization HIST 140 Modern Chinese History HIST 153 Found of Mod Euro History, 1300-1815 (G-WI) HIST 163 American History II HIST 165 The American Experience of Warfare (G-WI) HIST 166 Civil War and Reconstruction (G-WI) HIST 168 History of the Middle East (G-WI) HIST 173 Mod European History, 1815 to Present (G-WI) HIST 183 Modern American History 1945-Present HIST 210 History of Mod Science, 1859 to Present HIST 211 History of Pennsylvania INTS 201 Implementing Sustainable Energy System... INTS 202 The Architecture of the City: Classic to Contemp. POLS 101 Introduction to Political Science POLS 105 American Constitutional Law (G-WI) POLS 110 American National Government (G-WI) POLS 150 Peace Studies & Conflict Resolution (Study Abroad) POLS 170 Politics of Modern Turkey (Study Abroad) POLS 202 International Relations POLS 205 Women and Politics (G-WI) POLS 251 State and Local Government (G-WI) SOCA 102 Cultural Anthropology (G-WI) SOCA 105 American Ethnicity	Accounting – only ACCT 100, 101, 151, 201, 202, 251 Architecture – only ARCH 100 Art – only ARTA 101, 111, 161, 162, 291, 292, 293 Biological Science – all BIOS except 281, 282, 283 Business – only BUSA 101, 115, 152, 201, 202, 205, 232, 272 Chemistry – only CHEM 105, 120, 135, 220, 225, 251, 260, 291, 292, 293, 294 College Success: COLS101, 120 Communications – all CMTH except 180, 182, 185, 240, 252 Computer/Information Science – only CISC 101, 104, 115, 125, 225, 230, 270 Counseling – only COUN 100, 291, 292, 293 Dance – all DANC Economics – ECON201, 251G Education – all EDUC except 105 Engineering – only ENGG 100, 191, 192, 193, 194, 201, 251, 252 English – all ENGL Geography – all GEOG Global Studies - GLOB130, 160, 230 Health – only HEAL 150 History – all HIST Hospitality – only HOSP 101 Humanities – all HUMA Interdisciplinary Studies – INTS 101, 202, 250 Journalism – only JOUR 103 Mathematics – only MATH 120, 140, 145, 150, 160, 165, 175, 176, 180, 181, 191-194, 202, 210, 211 Modern Language – all MDLA Music – all MUSC Nutrition- NUTR105 Philosophy – all PHIL Physical Education – any PHED courses up to a max of two credits Physics – all PHYS Political Science – all POLS Publishing - 101, 102 Psychology – all PSYC except 221 Sociology/Antropology – all SOCA Special Education – SPED 160	BIOS105G Contemporary Biology CMTH 211G Plays: Classical to Cont ENGL 201G British Literature I ENGL 203G Shakespeare ENGL 205G American Literature I ENGL 211G Plays: Classical to Contemporary ENGL 215G Multicultural Adolescent Literature ENGL 250G Latin American Literature ENGL 251G British Literature II ENGL 255G American Literature II ENGL 256G Modern Poetry ENGL 257G 20th Century Lit by Women ENGL 260G Contemporary Literature ENGL 264G Irish Literature ENGL 265G African-American Literature GEOG 121G Environmental Sustainability GEOG 151G Geography of the US & Canada HIST 113G American History I HIST 121G The Black Experience HIST 153G Found of Mod Euro Hist (1300-1815) HIST 166G Civil War and Reconstruction HIST 168G History of the Middle East HIST 173G Mod Euro History, 1815 to Present HUMA 121G The American Work Experience HUMA 140G Intro to Women & Gender Studies HUMA250G Research Methods in the Social Sciences PHIL 111G On Death and Dying PHIL 202G Ethics and Moral Problems POLS 105G American Constitutional Law POLS 110G American National Government POLS 205G Women and Politics POLS 251G State and Local Government PSYC 103G Introduction to Psychology PSYC 258G Developmental Psychology SOCA 102G Cultural Anthropology SOCA 103G Principles of Sociology SOCA 125G Sociology of Families
	<b>Scientific Study of Human Behavior (SSHB)</b> ECON 201 Macroeconomics GEOG 121 Environmental Sustainability (G-WI) GEOG 140 Investigating Climate Change ) GEOG 271 Intro to Geographic Info Systems HUMA 250 Research Methods in Social Sciences (G-WI) INTS 250 Study Abroad PSYC 103 Introduction to Psychology (G-WI) PSYC 205 Research Methods PSYC 230 Introduction to Health Psychology PSYC 235 Dev Child Psychopathology PSYC 245 Cognitive Psychology PSYC 255 Abnormal Psychology PSYC 258 Developmental Psychology (G-WI) PSYC 265 Psychology of Sex and Gender SOCA 103 Principles of Sociology (G-WI) SOCA 125 Sociology of Families (G-WI) SOCA 210 Sociology of Gender	<b>Science (SCI)</b> BIOS 104 Field Ecology BIOS 105 Contemporary Biology (G-WI) BIOS 107 Biology I BIOS 110 In Your Genes: Intro to Mod Genetics BIOS 115 Essentials of Biology BIOS 126 Environmental Science BIOS 150 Biology II BIOS 160 Human Biology BIOS 202 Microbiology for Allied Health BIOS 204 Human Anatomy and Physiology I BIOS 206 General Ecology	CHEM 105 Chemistry in Contemporary Society CHEM 120 General Chemistry I CHEM 135 Chemistry of Life GEOG 150 Astronomy GEOG 210 Weather and Climate GEOL 201 Physical Geology PHYS 101 Physics I PHYS151 Physics II PHYS 152 Physical Science II PHYS 215 Physics for Science and Engineering I PHYS 225 Physics for Science and Engineering II

**Program Narrative:**

Northampton's Math/Physics program prepares you for transfer to a four-year college or university by serving as the first two years of a baccalaureate program in the fields of mathematics, physics, or other physical sciences.

Graduates of our two-year program have successfully transferred to and graduated from institutions such as Lafayette College, Kutztown University, the University of Pittsburgh, and Florida Institute of Technology. They have earned degrees in fields as diverse as chemical or geological engineering, mathematics, and oceanography.

Our program also qualifies you for immediate employment as a laboratory aide or technician, a scientific assistant or in technical sales. Members of Northampton's Career Services and counseling staff, as well as instructors within the program, can assist you in meeting your employment and career goals.

**Program Requirements:**

While this program has no special admission requirements, certain courses do require a background in Trigonometry and Chemistry. If you are lacking background in these areas, you should acquire it during the summer session before your first semester, or during your first semester.

**Program Learning Outcomes:** Graduates will be able to:

Demonstrate proficiency in conceptualization and analysis of problems.

Demonstrate both conceptual and quantitative ability for problem solving.

Work independently and also collaboratively.

Use technology to solve problems.

Use mathematics to solve problems and make decisions.

Use the scientific method to investigate a problem and present results and conclusions in a clear and concise form.

Succeed in a math-physics program at a four-year institution.

**Transfer Information:**

If you plan to transfer to a four-year institution, we encourage you to check with that institution to see what its requirements are. Then carefully select your courses here with the help of an advisor to be sure that they will meet your transfer school's requirements. Historically, our transfer students generally perform as well or better in their transfer school as they did when they were enrolled at Northampton.

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Career Coach Link: <https://northampton.emsicc.com/programs/mathphysics-as/214379>