



**Developmental Education Courses (if required)**

English Placement			Math Placement		
<input type="checkbox"/>	ACLS025	Academic Reading and Writing Skills I	<input type="checkbox"/>	MATH 020	Pre-Algebra
<input type="checkbox"/>	ACLS026	Academic Reading and Writing Skills II	<input type="checkbox"/>	MATH 022	Elementary Algebra
<input type="checkbox"/>	ACLS050	Introduction to Academic Literacy	<input type="checkbox"/>	MATH 026	Intermediate Algebra
<input type="checkbox"/>	ENGL027	Writing Skills Workshop			

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

**Courses are listed in preferred order of completion**

*Plans can be modified to fit the needs of part-time students by adding more semesters*

**Choose your courses with your Success Navigator or Faculty Advisor.**

Complete	<b>Semester 1</b>					
	Course #	Course Title	Credits	Gen Ed	Term/Location Offered (Fall, Winter, Spring, Summer) (Bethlehem, Monroe, Fowler, Online)	Pre-requisites / Co-requisites (PRE / CO)
<input type="checkbox"/>	MATH180	Calculus I	4	QL	FA, SP, SU; BETH, MROE, DIST	PRE: MATH145 or MATH160 or Placement Policy
<input type="checkbox"/>	CHEM120	General Chemistry I	4	Science	FA, SP; BETH, MROE SU1;MROE	PRE: MATH022 or placement policy, 1yr HS Chemistry or CHEM011, ENGL101 eligibility
<input type="checkbox"/>	COLS101	College Success	1		FA, SP, SU; BETH, MROE, DIST	
<input type="checkbox"/>	CMTH102	Introduction to Communication	3	Communication	FA, SP, SU; BETH, MROE, DIST	
<input type="checkbox"/>	ENGL101	English I	3	Communication	FA, SP, SU; BETH, MROE, DIST	PRE: ENGL Placement Policy
	Total Semester Credits:		15			
Complete	<b>Semester 2</b>					
	Course #	Course Title	Credits	Gen Ed	Term/Location Offered	Pre-requisites/Co-requisites
<input type="checkbox"/>	MATH181	Calculus II	4	QL	FA, SP, SU; BETH, MROE	PRE: MATH176 or Math180 or Placement Policy
<input type="checkbox"/>	PHYS215	Physics for Science & Engineering I	5		FA,SP; BETH, MROE	PRE or CO: MATH181
<input type="checkbox"/>	CISC115	Computer Science	4		FA, SP BETH, MROE SU2;MROE	PRE: MATH026 or Placement Policy
<input type="checkbox"/>	ENGL151L	English II (Literature) (D)	3	Communication	FA, SP, SU; BETH, MROE, DIST	PRE: ENGL101
	Total Semester Credits		17/18			
Complete	<b>Semester 3</b>					
	Course #	Course Title	Credits	Gen Ed	Term/Location Offered	Pre-requisites/Co-requisites
<input type="checkbox"/>	MATH210	Calculus III	4	QL	FA, SP; BETH, MROE	PRE: MATH181
<input type="checkbox"/>	PHYS225	Physics for Science & Engineering II	5		FA, SP; BETH SP; MROE	PRE: PHYS215
<input type="checkbox"/>		Engineering Elective <sup>+</sup>	3/4		Depends on course selected	Depends on course selected
<input type="checkbox"/>		Technical Elective <sup>++</sup>	3/4		Depends on course selected	Depends on course selected
	Total Semester Credits		15/17			
Complete	<b>Semester 4</b>					
	Course #	Course Title	Credits	Gen Ed	Term/Location Offered	Pre-requisites/Co-requisites
<input type="checkbox"/>	MATH211	Differential Equations	4	QL	FA, SP; BETH, MROE	PRE: MATH210
<input type="checkbox"/>		Engineering Elective <sup>+</sup>	4		Depends on course selected	Depends on course selected
<input type="checkbox"/>		AH General Education Elective	3	AH	FA, SP, SU; BETH, MROE, DIST	
<input type="checkbox"/>		SSHB General Education Elective	3	SSHB	FA, SP, SU; BETH, MROE, DIST	
<input type="checkbox"/>		SIT General Education Elective	3	SIT	FA, SP, SU; BETH, MROE, DIST	
	Total Semester Credits:		16/17			
	Total Degree Credits:		62/65			

### Notes:

- \*Engineering Elective options: ENGG 201, 251, 252, 191, 192, 193, 194 or a course approved by the Engineering Department.
  - \*\*Technical Elective options: any Engineering Elective (above list); ENGG 100; CHEM 201, 220; CISC 125, 230; or a course approved by the Engineering Department.
  - Recommended AH Elective: PHIL202G Ethics & Moral Problems
  - Recommended SSHB Elective: ECON201 Macroeconomics
  - **One course should be designated as Diversity and Global Awareness (D).**
  - **One General Education Elective (AH, SIT or SSHB) must be taken in Writing Intensive (WI) section.**
  - The program-related writing intensive competency is satisfied by the combination of PHYS 215 and PHYS 225.
  - All electives must be chosen from the list of courses which are applicable to AA and AS degrees
  - Must earn a C or better in the mathematic courses to advance to the next one.
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- Students should contact potential transfer institutions at least TWO SEMESTERS prior to their desired semester of transfer to ask for suggested courses to complete in the remaining semesters at NCC. Elective selections may be dependent on the student's desired Engineering discipline (Mechanical, Electrical, Computer, Civil, etc..). The Engineering advisor may suggest elective substitutions based on the recommendations from other schools.

### Program Narrative:

- NCC's Engineering program is designed to provide the first two years of courses common to many 4-year engineering schools. Through a broad curriculum of physics, mathematics and engineering electives, students will gain lab and real-world experience and develop skills common to all engineering specialties. The coursework emphasizes critical thinking and study habits. Students ready for transfer will be able to demonstrate competent technical knowledge in engineering-related areas and successfully apply their obtained skills to common engineering problems.

### Program Learning Outcomes:

- Transfer to a four-year engineering program in any engineering discipline.
- Move directly into industry in a position requiring math, science, and computing skills.
- Demonstrate an ability to work independently and collaboratively as a team.
- Demonstrate basic skills common to all engineering specialties.
- Effectively research and collect data using various published resources and the Internet.
- Analyze and present data in an acceptable, methodical, and standardized manner.
- Demonstrate competent technical knowledge in engineering-related areas.
- Demonstrate competent speaking skills when working with diverse groups.
- Demonstrate observational, integrative, and synthetic skills.
- Demonstrate a basic framework of technical vocabulary and graphical interpretation skills.
- Successfully apply mathematics (algebra, trigonometry, geometry and calculus) to solving engineering problems.

### Transfer Information:

- Graduates of this program can easily transfer once the program is completed, but students are also able to transfer after taking only a few of the required program classes. Popular transfer institutions for the degree are Lehigh University, Lafayette College, Drexel University, Penn State University, University of Pittsburgh, and Temple University, among others.
- As a graduate of our program you may also choose to transfer into engineering technologies or go directly into industry in a position that requires math, science, and computing skills

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

Arts & Humanities (AH) Electives	Societies & Institutions over Time (SIT) Electives	Diversity (D) Electives	Other Electives
ARTA 100 Art and Visual Thinking	CMTH 221 History of Broadcasting	BIOS 126 Environmental Science	Accounting – only ACCT 100, 101, 151, 201, 202, 251
ARTA 101 Art History Survey	GEOG 101 World Geography	BIOS 210 Environmental Biology	Architecture – only ARCH 100
CMTH 110 Introduction to the Theatre	GEOG 151 Geography of the U.S. and Canada (G-WI)	BUSA 115 Intro to International Business	Art – only ARTA 101, 107, 111, 124, 158, 162, 226,291, 292, 293
CMTH 111 Acting I	GLBL 130 Intro to Global Studies	CJST 250 Contemporary Issues in Criminal Justice	Biological Science – all BIOS except 281, 282, 283
CMTH 115 Technical Theatre	GLBL 160 Field Experience & Acad Research in GS	CMTH 126 The Communication Arts	Business – only BUSA 101, 115, 131, 152, 191, 192, 193, 201, 202, 205, 221
CMTH 117 Stagecraft	GLBL 230 Global Studies Capstone	CMTH 211 Plays: Classical to Contemporary	Chemistry – only CHEM 105, 120, 135, 201, 220, 225, 251, 260, 291, 292, 293, 294
CMTH 126 The Communication Arts	HIST 103 Ancient and Medieval History	CMTH 215 Intercultural Communication	College Success: COLS101, 120
CMTH 189 Stage Voice and Movement	HIST 113 American History I (G-WI)	DANC 101 Dance History	Communications – all CMTH except 180, 182, 240, 252
CMTH 190 Stage Production	HIST 121 The Black Experience (G-WI)	ENGL 151L English II (Literature)	Computer/Information Science – only CISC 101, 104, 106, 115, 125, 225, 230, 270
CMTH 206 Directing	HIST 123 African Civilization	ENGL 205 American Literature I	Counseling – only COUN 100, 291, 292, 293
CMTH 211 Plays: Classical to Contemporary (G-WI)	HIST 140 Modern Chinese History	ENGL 211 Plays: Classical to Contemporary	Dance – all DANC
CMTH 212 Acting II	HIST 153 Found of Mod Euro History, 1300-1815 (G-WI)	ENGL 215 Multicultural Adolescent Literature	Economics – all ECON except 291, 292, 293
CMTH 218 Theatre Portfolio	HIST 163 American History II	ENGL 250 Latin American Literature	Education – all EDUC except 105, 255
CMTH 220 Introduction to Film	HIST 165 The American Experience of Warfare	ENGL 251 British Literature II	English – all ENGL
DANC 101 Dance History	HIST 166 Civil War and Reconstruction (G-WI)	ENGL 253 Creative Writing	Geography – all GEOG except 130
DANC 110 Ballet I	HIST 168 History of the Middle East (G-WI)	ENGL 255 American Literature II	Global Studies - all GBLB
DANC 120 Modern Dance I	HIST 173 Mod European History, 1815 to Present (G-WI)	ENGL 256 Modern Poetry	Health – only HEAL 150
DANC 130 Jazz I	HIST 210 History of Mod Science, 1859 to Present	ENGL 257 20th Century Lit by Women	History – all HIST
DANC 210 Ballet II	HIST 211 History of Pennsylvania	ENGL 260 Contemporary Literature	Hospitality – only HOSP 101
DANC 220 Modern Dance II	INTS 202 The Architecture of the City: Classic to Contemporary	ENGL 264 Irish Literature	Humanities – all HUMA
DANC 230 Jazz II	POLS 101 Introduction to Political Science	ENGL 265 African-American Literature	Interdisciplinary Studies – INTS 101, 202, 250
ENGL 201 British Literature I (G-WI)	POLS 105 American Constitutional Law (G-WI)	ENGL 267 Poetry Writing	Journalism – only JOUR 103, 201
ENGL 203 Shakespeare (G-WI)	POLS 110 American National Government (G-WI)	GEOG 101 World Geography	Mathematics – only MATH 120, 140, 145, 150, 160, 165, 175, 176, 180, 181, 191, 192, 193, 194, 202, 210, 211
ENGL 205 American Literature I (G-WI)	POLS 150 Peace Studies & Conflict Resolution (Study Abroad)	GEOG 121 Environmental Sustainability	Modern Language – all MDLA
ENGL 211 Plays: Classical to Contemporary (G-WI)	POLS 170 Politics of Modern Turkey (Study Abroad)	GEOG 151 Geography of the U.S. and Canada	Music – all MUSC
ENGL 215 Multicultural Adolescent Literature (G-WI)	POLS 202 International Relations	GEOG 210 Weather and Climate	Nutrition: NUTR105
ENGL 250 Latin American Literature (G-WI)	POLS 205 Women and Politics (G-WI)	GLBL 130 Intro to Global Studies	Philosophy – all PHIL
ENGL 251 British Literature II (G-WI)	POLS 251 State and Local Government (G-WI)	GLBL 160 Field Experience & Acad Research in GS	Physical Education – any PHED courses up to a max of two credits
ENGL 253 Creative Writing	SOCA 102 Cultural Anthropology (G-WI)	GLBL 230 Global Studies Capstone	Physics – all PHYS
ENGL 255 American Literature II (G-WI)	SOCA 105 American Ethnicity	HIST 113 American History I	Political Science – all POLS
ENGL 256 Modern Poetry (G-WI)	SOCA 160 Issues in Contemporary Genocide & Mass Violence	HIST 121 The Black Experience	Psychology – all PSYC except 221
ENGL 257 20th Century Lit by Women (G-WI)		HIST 140 Modern Chinese History	Sociology/Anthropology – all SOCA
ENGL258 Fiction Writing		HIST 165 The American Experience of Warfare	Special Education – SPED 160
ENGL 260 Contemporary Literature (G-WI)		HIST 166 Civil War & Reconstruction	
ENGL 264 Irish Literature (G-WI)	Scientific Study of Human Behavior (SSHB) Electives	HIST 168 History of the Middle East	
ENGL 265 African-American Literature (G-WI)	ECON 201 Macroeconomics ( <i>recommended</i> )	HIST 173 Mod Euro History: 1815-Present	
ENGL 267 Poetry Writing	GEOG 121 Environmental Sustainability (G-WI)	HUMA 121 American Work Experience	Engineering Electives
HUMA 121 The American Work Experience (G-WI)	GEOG 140 Investigating Climate Change	HUMA 140 Intro to Women and Gender Studies	ENGG 201 Statics
HUMA 140 Intro to Women and Gender Studies (G-WI)	GEOG 271 Intro to Geographic Info Systems	HUMA 150 Nature of the Environment	ENGG 251 Strength of Materials
HUMA210 Creativity and the Origin of Ideas	HUMA 250 Research Methods in Social Sciences (G-WI)	HUMA210 Creativity and The Origin of Ideas	ENGG 252 Dynamics
JOUR 101 Journalism and Society	INTS 250 Study Abroad	INTS 201 Implement Sustain Energy Sys in Dev Com	ENGG 191, 192, 193, 194 Special Studies in Engineering
Modern Language - All MDLA Courses	PSYC 103 Introduction to Psychology (G-WI)	Modern Language - All MDLA Courses	
MUSC 101 Introduction to Music	PSYC 230 Introduction to Health Psychology	PHIL111 On Death and Dying	
PHIL 111 On Death and Dying (G-WI)	PSYC 235 Dev Child Psychopathology	PHIL 121 World Religions	
PHIL 121 World Religions	PSYC 245 Cognitive Psychology	PHIL 204 Asian Philosophies	
PHIL 201 Introduction to Philosophy	PSYC 255 Abnormal Psychology	PSYC 101 Introduction to Political Science	
PHIL 202 Ethics and Moral Problems (G-WI) ( <i>recommended</i> )	PSYC 258 Developmental Psychology (G-WI)	POLS 105G American Constitutional Law	
PHIL 204 Asian Philosophies	PSYC 265 Psychology of Sex and Gender	POLS 150 Peace Studies & Conflict Resolution (Study Abroad)	
PHIL 211 Ancient Philosophy	SOCA 103 Principles of Sociology (G-WI)	POLS 202 International Relations	
PHIL 215 Modern Philosophy	SOCA 125 Sociology of Families (G-WI)	POLS205 Women & Politics	Technical Electives
PHIL 225 What is Freedom?	SOCA 210 Sociology of Gender	POLS 251 State & Local Government	ENGG courses listed above
		PSYC 258 Developmental Psychology	ENGG 100 Engineering Graphics
		SOCA 102 Cultural Anthropology	CHEM 201G Organic Chemistry I (WI)
		SOCA103 Principles of Sociology	CHEM 220 General Chemistry II
		SOCA 105 American Ethnicity	CISC 125 Computer Science II
		SOCA 150 Deviance	CISC 230 Data Structures and Algorithm Analysis
		SOCA160 Issues in Cont Genocide & Mass Violence	
		SOCA204 Social Problems	

Note: General Education courses offered as writing intensive are noted with a G-WI