

## Developmental Education Courses (if required)

|                          |         |                                   |
|--------------------------|---------|-----------------------------------|
| <input type="checkbox"/> | ACLS050 | Introduction to Academic Literacy |
| <input type="checkbox"/> | ENGL027 | Writing Skills Workshop           |
| <input type="checkbox"/> | MATH022 | Elementary Algebra                |
| <input type="checkbox"/> | MATH156 | STEM College Algebra              |
| <input type="checkbox"/> | MATH160 | Pre-Calculus                      |

Placement in English and/or Mathematics must first be determined by official transcripts and/or placement testing. Developmental education courses are only taken if needed based on a student's placement; these courses would be in addition to the courses outlined below. Developmental education courses may extend the timeline to degree completion.

Transferring credits into NCC: Official transcripts are required; awarded credit will appear in Workday's Academic Progress.

| complete   | Course #                 | Course Title            | Credits                              |     |
|------------|--------------------------|-------------------------|--------------------------------------|-----|
| Semester 1 | <input type="checkbox"/> | COLS101                 | College Success                      | 1   |
|            | <input type="checkbox"/> | ENGL101                 | English I                            | 3   |
|            | <input type="checkbox"/> | COMM101                 | Introduction to Communication        | 3   |
|            | <input type="checkbox"/> | MATH180                 | Calculus I                           | 4   |
|            | <input type="checkbox"/> | CHEM120                 | General Chemistry I                  | 4   |
|            |                          | Total Semester Credits: | 15                                   |     |
| Semester 2 | <input type="checkbox"/> | MATH181                 | Calculus II                          | 4   |
|            | <input type="checkbox"/> | PHYS215                 | Physics for Science & Engineering I  | 5   |
|            | <input type="checkbox"/> | CISC115                 | Computer Science                     | 4   |
|            | <input type="checkbox"/> | ENGL151L                | English II (Literature) (D)          | 3   |
|            |                          | Total Semester Credits: | 16                                   |     |
| Semester 3 | <input type="checkbox"/> | MATH210                 | Calculus III                         | 4   |
|            | <input type="checkbox"/> | PHYS225                 | Physics for Science & Engineering II | 5   |
|            | <input type="checkbox"/> |                         | Engineering Elective*                | 3/4 |
|            | <input type="checkbox"/> |                         | Technical Elective**                 | 3/4 |
|            |                          | Total Semester Credits: | 15-17                                |     |
| Semester 4 | <input type="checkbox"/> | MATH211                 | Differential Equations               | 4   |
|            | <input type="checkbox"/> |                         | Engineering Elective*                | 3/4 |
|            | <input type="checkbox"/> |                         | AH General Education Elective        | 3   |
|            | <input type="checkbox"/> |                         | SSHB General Education Elective      | 3   |
|            | <input type="checkbox"/> |                         | SIT General Education Elective       | 3   |
|            |                          | Total Semester Credits: | 16/17                                |     |
|            |                          | Total Degree Credits    | 62-65                                |     |

## General Education Requirements

|                          |                   |  |
|--------------------------|-------------------|--|
| <input type="checkbox"/> | ENGL151L          | Diversity  |
| <input type="checkbox"/> | PHYS215 & PHYS225 | Combined Fulfill 1 Writing Intensive Requirement |
| <input type="checkbox"/> |                   | Writing Intensive (AH, SIT, or SSHB)             |

## Program Notes:

+Students must take three General Education Electives (SIT, SSHB or AH) one of which must be in a Writing Intensive (WI) section.

Writing Intensive course codes end in G. Examples: PSYC103G (PSYC103 is not writing intensive). Please pay attention to the option you select. For example, if you are looking for an SSHB writing intensive course, look for one that ends in G via the SSHB course tag.

## How to search for general education electives:

In Workday's *Academics*- click *Find Course Sections & Register*, then use the corresponding **Course Tag** filter to see the available options.

*Arts and Humanities = AH*

*Social Science: Scientific Study of Human Behavior = SSHB*

*Social Science: Societies and Institutions Over Time = SIT*

**\*Students may, also, be eligible for MATH181: Calculus II if they have received a score of 4 or 5 on AP Calc AB test or 3, 4 or 5 on AP Calc BC test**

## \*Engineering Electives:

(confirm with transfer school if these are required for your intended discipline, or if they recommend something else - especially CHEM & ELEC engineers)

## ENGG201\* & ENGG251\*

\*primary offerings to fulfill electives

ENGG252 ENGG191  
ENGG192 ENGG193  
ENGG194

## \*\*Technical Electives:

(Degree Recommendation)  
CADM100 (MECH/CIVIL)  
CHEM201 (CHEM)  
CHEM220 (CHEM)  
CISC125 (COMP)  
CISC230 (COMP)

\*\*eligibility will depend on which elective is chosen

**\*It is the student's responsibility to be knowledgeable of NCC graduation requirements and, if applicable, 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)   | Diversity (D) Electives  |   |
|---|--|--|---|
| ARTA 100 Art and Visual Thinking<br>ARTA 101 Art History Survey<br>THEA 110 Introduction to the Theatre<br>THEA 111 Acting I<br>THEA 115 Technical Theatre<br>THEA 117 Stagecraft<br>CMTH 126 The Communication Arts<br>THEA 189 Stage Voice and Movement<br>THEA 190 Stage Production<br>THEA 206 Directing<br>THEA 211 Plays: Classical to Contemp. (G-WI)<br>THEA 212 Acting II<br>THEA 218 Theatre Portfolio<br>CMTH 220 Introduction to Film<br>CMTH235 Understanding Culture Through Film<br>DANC 101 Dance History<br>DANC 110 Ballet I<br>DANC 120 Modern Dance I<br>DANC 130 Jazz I<br>DANC 210 Ballet II<br>DANC 220 Modern Dance II<br>DANC 230 Jazz II<br>ENGL 201 British Literature I (G-WI)<br>ENGL 203 Shakespeare (G-WI)<br>ENGL 205 American Literature I (G-WI)<br>ENGL 211 Plays: Classical to Contemp. (G-WI)<br>ENGL 215 Multicultural Adolescent Lit (G-WI)<br>ENGL 250 Latin American Literature (G-WI)<br>ENGL 251 British Literature II (G-WI)<br>ENGL 253 Creative Writing<br>ENGL 255 American Literature II (G-WI)<br>ENGL 256 Modern Poetry (G-WI)<br>ENGL 257 20th Century Lit by Women (G-WI)<br>ENGL258 Fiction Writing<br>ENGL 260 Contemporary Literature (G-WI)<br>ENGL 264 Irish Literature (G-WI)<br>ENGL 265 African-American Literature (G-WI)<br>ENGL 267 Poetry Writing<br>HUMA 121 The American Work Experience (G-WI)<br>HUMA 140 Intro to Women & Gender Studies (G-WI)<br>HUMA 150 Nature of the Environment<br>HUMA210 Creativity and the Origin of Ideas<br>JOUR 101 Journalism and Society<br>Modern Language - All MDLA Courses<br>MUSC 101 Introduction to Music<br>PHIL 111 On Death and Dying (G-WI)<br>PHIL 121 World Religions<br>PHIL 201 Introduction to Philosophy<br><b>PHIL 202 Ethics and Moral Problems (G-WI)</b><br>PHIL 204 Asian Philosophies<br>PHIL 211 Ancient Philosophy<br>PHIL 215 Modern Philosophy<br>PHIL220 Existentialism<br>PHIL 225 What is Freedom? | CMTH 221 History of Broadcasting<br>GEOG 101 World Geography<br>GEOG 151 Geography of the U.S. and Canada (G-WI)<br>GLBL 130 Intro to Global Studies<br>GLBL 160 Field Experience & Acad Research in GS<br>GLBL 230 Global Studies Capstone<br>HIST 103 Ancient and Medieval History<br>HIST 113 American History I (G-WI)<br>HIST 121 The Black Experience (G-WI)<br>HIST 123 African Civilization<br>HIST 140 Modern Chinese History<br>HIST 153 Found of Mod Euro History, 1300-1815 (G-WI)<br>HIST 163 American History II<br>HIST 165 The American Experience of Warfare (G-WI)<br>HIST 166 Civil War and Reconstruction (G-WI)<br>HIST 168 History of the Middle East (G-WI)<br>HIST 169G History of Latinos in the US<br>HIST 173 Mod European History, 1815 to Present (G-WI)<br>HIST 183 Modern American History 1945-Present<br>HIST 210 History of Mod Science, 1859 to Present<br>HIST 211 History of Pennsylvania<br>INTS 201 Implementing Sustainable Energy System...<br>INTS 202 The Architecture of the City: Classic to Contemp.<br>POLS 101 Introduction to Political Science<br>POLS 105 American Constitutional Law (G-WI)<br>POLS 110 American National Government (G-WI)<br>POLS 150 Peace Studies & Conflict Resolution (Study Abroad)<br>POLS 170 Politics of Modern Turkey (Study Abroad)<br>POLS 202 International Relations<br>POLS 205 Women and Politics (G-WI)<br>POLS 251 State and Local Government (G-WI)<br>SOCA 102 Cultural Anthropology (G-WI)<br>SOCA 105 American Ethnicity<br>SOCA 160 Issues in Contemp.Genocide & Mass Violence | BIOS 126 Environmental Science<br>BIOS 210 Environmental Biology<br>BUSA 115 Intro to International Business<br>CJST 101 Intro to Criminal Justice<br>CMTH 126 The Communication Arts<br>THEA 211 Plays: Classical to Contemporary<br>CMTH 215 Intercultural Communication<br>CMTH235 Understanding Culture Through Film<br>DANC 101 Dance History<br>ENGL 151L English II (Literature)<br>ENGL 205 American Literature I<br>ENGL 211 Plays: Classical to Contemporary<br>ENGL 215 Multicultural Adolescent Literature<br>ENGL 250 Latin American Literature<br>ENGL 251 British Literature II<br>ENGL 253 Creative Writing<br>ENGL 255 American Literature II<br>ENGL 256 Modern Poetry<br>ENGL 257 20th Century Lit by Women<br>ENGL 260 Contemporary Literature<br>ENGL 264 Irish Literature<br>ENGL 265 African-American Literature<br>ENGL 267 Poetry Writing<br>GEOG 101 World Geography<br>GEOG 121 Environmental Sustainability<br>GEOG 151 Geography of the U.S. and Canada<br>GEOG 210 Weather and Climate<br>GLBL 130 Intro to Global Studies<br>GLBL 160 Field Experience & Acad Research in GS<br>GLBL 230 Global Studies Capstone<br>HIST 113 American History I<br>HIST 121 The Black Experience<br>HIST 140 Modern Chinese History | HIST 165 The American Experience of Warfare<br>HIST 166 Civil War & Reconstruction<br>HIST 168 History of the Middle East<br>HIST 169G History of Latinos in the US<br>HIST 173 Mod Euro History: 1815-Present<br>HIST 183 Modern American History 1945-Present<br>HUMA 121 American Work Experience<br>HUMA 140 Intro to Women and Gender Studies<br>HUMA 150 Nature of the Environment<br>HUMA210 Creativity and The Origin of Ideas<br>INTS 201 Implement Sustain Energy Sys in Dev Com<br>MATH 150 Introductory Statistics<br>Modern Language - All MDLA Courses<br>PHIL111 On Death and Dying<br>PHIL 121 World Religions<br>PHIL 204 Asian Philosophies<br>POLS 101 Introduction to Political Science<br>POLS 105G American Constitutional Law<br>POLS 150 Peace Studies & Conflict Resolution (Study Abroad)<br>POLS 270 Politics of Modern Turkey (Study Abroad)<br>POLS 202 International Relations<br>POLS205 Women & Politics<br>POLS 251 State & Local Government<br>PSYC 230 Introduction to Health Psychology<br>PSYC 258 Developmental Psychology<br>SOCA 102 Cultural Anthropology<br>SOCA103 Principles of Sociology<br>SOCA 105 American Ethnicity<br>SOCA 125 Sociology of Families<br>SOCA 150 Deviance<br>SOCA160 Issues in Cont Genocide & Mass Violence<br>SOCA204 Social Problems |
|   |  | Writing Intensive Gen Ed Courses (WI)  |   |
|   |  | BIOS105G Contemporary Biology<br>CMTH 211G Plays: Classical to Cont<br>ENGL 201G British Literature I<br>ENGL 203G Shakespeare<br>ENGL 205G American Literature I<br>ENGL 211G Plays: Classical to Contemporary<br>ENGL 215G Multicultural Adolescent Literature<br>ENGL 250G Latin American Literature<br>ENGL 251G British Literature II<br>ENGL 255G American Literature II<br>ENGL 256G Modern Poetry<br>ENGL 257G 20th Century Lit by Women<br>ENGL 260G Contemporary Literature<br>ENGL 264G Irish Literature<br>ENGL 265G African-American Literature<br>GEOG 121G Environmental Sustainability<br>GEOG 151G Geography of the US & Canada<br>HIST 113G American History I<br>HIST 121G The Black Experience   | HIST 153G Found of Mod Euro Hist (1300-1815)<br>HIST 165G The American Experience of Warfare<br>HIST 166G Civil War and Reconstruction<br>HIST 168G History of the Middle East<br>HIST 169G History of Latinos in the US<br>HIST 173G Mod Euro History, 1815 to Present<br>HUMA 121G The American Work Experience<br>HUMA 140G Intro to Women & Gender Studies<br>HUMA250G Research Methods in the Social Sciences<br>PHIL 111G On Death and Dying<br><b>PHIL 202G Ethics and Moral Problems</b><br>POLS 105G American Constitutional Law<br>POLS 110G American National Government<br>POLS 205G Women and Politics<br>POLS 251G State and Local Government<br>PSYC 103G Introduction to Psychology<br>PSYC 258G Developmental Psychology<br>SOCA 102G Cultural Anthropology<br>SOCA 103G Principles of Sociology<br>SOCA 125G Sociology of Families  |
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**Notes:**

- **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.

**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>