



Computer Aided Design- Associate in Applied Science (2021-22 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	----	B, M, D	B, M, D	PRE: ENGL Placement Policy
	<input type="checkbox"/>	CISC101	Introduction to Information Technology	3	CL	B, M, D	----	B, M, D	B, M, D	
	<input type="checkbox"/>	CADM100	Engineering Graphics Essentials	3		B	----	----	----	
	<input type="checkbox"/>	CADM115	Computer Aided Design I	3		B, D	----	B, D	----	PRE or CO: CADM100
	<input type="checkbox"/>	MATH140	College Algebra	3	QL	B, M, D	----	B, M, D	----	PRE: MATH Placement Policy
		Total Semester Credits:	16							
Semester 2	<input type="checkbox"/>	CADM205	Computer Aided Design II	3		----	----	B	----	PRE: CADM115
	<input type="checkbox"/>	CADM230	Parametric Modeling-Inventor I	3		----	----	B	----	PRE or CO: CADM205
	<input type="checkbox"/>	CMTH102	Introduction to Communication	3	Comm	B, M, D	----	B, M, D	B, M, D	
	<input type="checkbox"/>	ENGG125	Manufacturing Processes	3		----	----	D	----	
	<input type="checkbox"/>	ENGL151T	English II (Technical Writing)	3	Comm	B, M, D	----	B, M, D		PRE: ENGL101
		Total Semester Credits:	15							
Semester 3	<input type="checkbox"/>	CADM210	Computer Aided Design III	3		B	----	----	----	PRE: CADM205
	<input type="checkbox"/>	CADM220	Parametric Modeling-SolidWorks	3		B	----	----	----	PRE: CADM205
	<input type="checkbox"/>	CADM240	Digital Manufacturing I	3		B	----	----	----	PRE: CADM230 and CO: CADM220
	<input type="checkbox"/>	MATH145	Trigonometry	3	QL	B, M, D	----	B, M, D	B, M, D	PRE: MATH140 w/C or better or math placement
	<input type="checkbox"/>	PHYS101	Physics I	4	Science	B, M, D	----	B, M, D	B, M, D	PRE: MATH140 w/C or better or math placement
		Total Semester Credits:	16							
Semester 4	<input type="checkbox"/>	CADM250	Design Project	3		----	----	B	----	PRE: CADM220, CADM230, and ENGL151
	<input type="checkbox"/>	CADM255	Statics & Strength of Materials (Algebra Based)	4		----	----	B	----	PRE: PHYS101
	<input type="checkbox"/>		AH or SIT General Education Elective	3		B, M, D	D	B, M, D	B, M, D	Depends on course selected
	<input type="checkbox"/>		SSHB General Education Elective	3		B, M, D	D	B, M, D	B, M, D	Depends on course selected
	<input type="checkbox"/>		Elective*	3		B, M, D	D	B, M, D	B, M, D	Depends on course selected
		Total Semester Credits:	16							
		Total Degree Credits	63							

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

Notes:

*The CADM 260 - CAD Practicum can satisfy the Elective requirement.

*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)
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
CMTH235 Understanding Culture Through 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
PHIL220 Existentialism
PHIL 225 What is Freedom?

Societies & Institutions Over Time (SIT)
ARCH 155 Architectural History II 1870-Present (AAS ONLY)
CMTH 221 History of Broadcasting
GEOG 101 World Geography
GEOG 151 Geography of the U.S. and Canada (G-WI)
GLBL 130 Intro to Global Studies
GLBL 160 Field Experience & Acad Research in GS
GLBL 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
SOCA 160 Issues in Contemp.Genocide & Mass Violence

Scientific Study of Human Behavior (SSHB)
ECON 201 Macroeconomics
FDST110 Food and Identity
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

Diversity (D) Electives
BIOS 126 Environmental Science
BIOS 210 Environmental Biology
BUSA 115 Intro to International Business
CMTH 126 The Communication Arts
CMTH 211 Plays: Classical to Contemporary
CMTH 215 Intercultural Communication
CMTH235 Understanding Culture Through Film
DANC 101 Dance History
ENGL 151L English II (Literature)
ENGL 205 American Literature I
ENGL 211 Plays: Classical to Contemporary
ENGL 215 Multicultural Adolescent Literature
ENGL 250 Latin American Literature
ENGL 251 British Literature II
ENGL 253 Creative Writing
ENGL 255 American Literature II
ENGL 256 Modern Poetry
ENGL 257 20th Century Lit by Women
ENGL 260 Contemporary Literature
ENGL 264 Irish Literature
ENGL 265 African-American Literature
ENGL 267 Poetry Writing
GEOG 101 World Geography
GEOG 121 Environmental Sustainability
GEOG 151 Geography of the U.S. and Canada
GEOG 210 Weather and Climate
GLBL 130 Intro to Global Studies
GLBL 160 Field Experience & Acad Research in GS
GLBL 230 Global Studies Capstone
HIST 113 American History I
HIST 121 The Black Experience
HIST 140 Modern Chinese History
HIST 165 The American Experience of Warfare
HIST 166 Civil War & Reconstruction
HIST 168 History of the Middle East
HIST 173 Mod Euro History: 1815-Present
HIST 183 Modern American History 1945-Present
HUMA 121 American Work Experience
HUMA 140 Intro to Women and Gender Studies
HUMA 150 Nature of the Environment
HUMA210 Creativity and The Origin of Ideas
INTS 201 Implement Sustain Energy Sys in Dev Com
MATH 150 Introductory Statistics
Modern Language - All MDLA Courses
PHIL111 On Death and Dying
PHIL 121 World Religions
PHIL 204 Asian Philosophies
POLS 101 Introduction to Political Science
POLS 105G American Constitutional Law
POLS 150 Peace Studies & Conflict Resolution (Study Abroad)
POLS 270 Politics of Modern Turkey (Study Abroad)
POLS 202 International Relations
POLS205 Women & Politics
POLS 251 State & Local Government
PSYC 230 Introduction to Health Psychology
PSYC 258 Developmental Psychology
SOCA 102 Cultural Anthropology
SOCA103 Principles of Sociology
SOCA 105 American Ethnicity
SOCA 125 Sociology of Families
SOCA 150 Deviance
SOCA160 Issues in Cont Genocide & Mass Violence
SOCA204 Social Problems

Writing Intensive Gen Ed Courses (WI)
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 165G The American Experience of Warfare
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

Program Narrative:

- Computer Aided Design is the state-of-the-art technology in fields such as industrial design and architecture. Northampton's Computer Aided Design program integrates the specialized knowledge and skills of design with the power, speed and diversity of computers using state-of-the-industry CAD software. This program will prepare you for a variety of positions or offer you valuable training to stay competitive if you are already employed within the field.
- As a student in our program, you will learn computer aided design layout and 3D solid modeling definition. You will also gain the knowledge of design and drafting needed for multiple disciplines, including mechanical, civil, architectural and electrical engineering and design.
- Most major courses are offered during the day in the fall and spring. All other courses are offered both day and evening.
- As a graduate of Northampton's program, you will be qualified for employment as an entry-level mechanical designer, design drafter, CAD operator or CAD Technician. Professionals in
- Northampton's placement and counseling offices, as well as instructors within the program, will assist you in meeting your employment and career goals.
- If you are a student from an area vocational-technical school, you may receive advanced placement for work completed at the vocational-technical school. If you have had previous related experience, you may challenge some of the introductory courses such as engineering graphics, and receive credit.

Program Learning Outcomes:

- Demonstrate an ability to work independently and apply interpersonal and technical skills to solve problems.
- Demonstrate proficient drafting and computer skills in using several current industrial standard CAD softwares to create mechanical designs for product parts, assemblies and system configurations, apply appropriate drafting standards, dimensioning and tolerancing for same.
- Demonstrate competent technical writing skills.
- Demonstrate competent speaking skills when working with diverse groups.
- Demonstrate competent technical vocabulary and 2D and 3D CAD drafting and modeling skills applicable to a variety of engineering disciplines, including mechanical electrical, architectural, and civil engineering.

Career Information:

- The objective of this AAS Degree Program is to provide students with the advanced skills to needed to work in a variety of industry disciplines. This includes 2D drafting, 3D design and modeling utilizing numerous software, as well as understanding the design and digital manufacturing processes.
- Growth in the engineering services and construction industries is expected to account for most new jobs for drafters. The industries that will experience an increase in demand for most drafters were as follows:
 - Architectural and Civil Drafters8 % Growth
 - Electrical and Electronics Drafters7 % Growth
 - Mechanical Drafters5 % Growth
 - Drafters, all other8 % Growth
- Overall job prospects are expected to be strong and employment of drafters is projected to grow 7 percent from 2016 to 2026.
- Demand for particular drafting specialties varies across the country because jobs depend on the needs of local industries. Job prospects for mechanical drafters should be best in large manufacturing hubs.

Possible Careers :

- | | | |
|------------------------|----------------------|-----------------------------------|
| -CAD Drafter | -Electrical Drafter | -AutoCAD Designer |
| -Draftsperson | -Electronics Drafter | -Inventor Designer |
| -Mechanical Drafter | -Structural Drafter | -Solidworks Designer |
| -Architectural Drafter | -3D Designer | -Design Draftsperson |
| -Civil Drafter | -3D Solid Modeler | -Design or Prototyping Technician |
| -Drafting Technician | -CAD Specialist | |