



# Engineering - 3 Year Plan

Associate in Science

Advising Worksheet\* 2019-2020

Total Degree Credits

97-104

**Note:** Courses listed on advising worksheet are suggested. Students should consult with their advisor concerning their unique transfer decisions.

## 1st Year Fall Semester

### Arts & Humanities <sup>1</sup>

1. 3

### Communications I

ENGL 110 College Composition I (Required) 3

### Math, Science & Technology

CSCI 101 Introduction to Computers 3

### Social & Behavioral Sciences <sup>1</sup>

1. 3

### Engineering Electives <sup>3</sup>

ENGR 101 Graphical Communication (Recommended) <sup>4</sup> 3

**Total Credits 15**

## 2nd Year Fall Semester

### Arts & Humanities <sup>1</sup>

1. 3

### Communications III

COMM 110 Fundamentals of Public Speaking 3

### Math, Science & Technology

CHEM 121/121L General Chemistry I/Lab 5

MATH 165 Calculus I 4

### Engineering Electives <sup>3</sup>

**Select one course from Engineering Electives (Optional):**

1. 3-4

**Total Credits 18-19**

## 1st Year Spring Semester

### Communications II (Select one of the following:)

ENGL 120 College Composition II 3

ENGL 125 Introduction to Professional Writing (Recommended)

### Math, Science & Technology

CHEM 115/115L Introductory Chemistry/Lab 5

MATH 107 Pre-Calculus 4

### Engineering Electives <sup>3</sup>

CAD 211 Computer Aided Design I (Recommended) <sup>4</sup> 3

**Total Credits 15**

## 2nd Year Spring Semester

### Social & Behavioral Sciences <sup>1</sup>

1. 3

### Enrichment <sup>2</sup>

1. 2

### Engineering Electives <sup>3</sup>

CHEM 122/122L General Chemistry II/Lab (Recommended) 5

MATH 166 Calculus II (Recommended) 4

**Select one course from Engineering Electives (Optional):**

1. 3-4

**Total Credits 17-18**

*See next page for 3rd Year and Engineering Electives*

\*This advising worksheet is unofficial and to be used for class planning purposes only. Please refer to the official catalog at <http://catalog.bismarckstate.edu/> for the complete listing of college degree requirements.

3rd Year Fall Semester				
<i>Engineering Electives</i> <sup>3</sup>				
ENGR	201	Statics (Recommended)		3
MATH	265	Calculus III (Recommended)		4
PHYS	251/251L	University Physics I/Lab (Recommended)		5
<b>Select one course from Engineering Electives (Optional):</b>				
1.				3
<b>Select one course from Engineering Electives (Optional):</b>				
1.				3-5
<b>Total Credits</b>				<b>18-20</b>

3rd Year Spring Semester				
<i>Engineering Electives</i> <sup>3</sup>				
MATH	266	Introduction to Differential Equations (Recommended)		3
PHYS	252/252L	University Physics II/Lab (Recommended)		5
<b>Select one course from Engineering Electives:</b>				
1.				3-4
<b>Select one course from Engineering Electives:</b>				
1.				3-5
<b>Total Credits</b>				<b>14-17</b>

Engineering Electives				
CAD	211	Computer Aided Design I		3
CAD	213	Computer Aided Design III		3
CHEM	122/122L	General Chemistry II/Lab		5
CHEM	241/241L	Organic Chemistry I/Lab		5
CHEM	242/242L	Organic Chemistry II/Lab		5
CSCI	160	Computer Science I		4
CT	251/251L	Materials Testing/Lab		4
EE	206/206L	Circuit Analysis/Lab		4
ENGR	101	Graphical Communication		3

Engineering Electives (continued)				
ENGR	201	Statics		3
ENGR	202	Dynamics		3
ENGR	203	Mechanics of Materials		3
ENGR	204/204L	Surveying I/Lab		4
ENGR	206	Fluid Mechanics		3
ENGR	241	Thermodynamics I		3
GEOL	105/105L	Physical Geology/Lab		4
MATH	220	Probability and Statistics (Spring only)		3
MATH	227	Applied Linear Algebra		3

**NOTE:** Most Engineering Transfer programs consider successful completion of all or many Engineering "core" or "elective" courses as a passing grade of C or better. Students should refer to prerequisite requirements for courses at BSC regarding this requirement along with specific requirements regarding successful completion of a course in their discipline at their transfer school.

<sup>1</sup> Refer to General Education & Diversity Matrix in the BSC Catalog when selecting Arts & Humanities/Social & Behavioral Science courses. Minimum 3 credit Diversity requirement must be met for AS degree. Many courses have Summer term offerings; taking these courses during the Summer would reduce 1st and/or 2nd year Fall and Spring semester course loads, freeing up space for additional Engineering electives.

<sup>2</sup> Two 1-credit courses, taken concurrently or in different semesters, may also be used to meet the 2-credit Enrichment requirement.

<sup>3</sup> Verify if desired elective course is required or optional for student's preferred Engineering discipline at transfer institution.

<sup>4</sup> Within some transfer institution programs, completion of both ENGR 101 and CAD 211 is required to meet degree requirements; students should verify program requirements at their preferred transfer institution.

# Associate in Science (AS)

## 2019-2020 Catalog

### Legend

- (\*) Course not approved as GERTA
- (\*\*) Course may satisfy requirements with permission of appropriate Department Chair and Dean.
- (D) Course meets Diversity requirement (can also be used to meet general education requirements)
- (F) Course designated as Fine Arts

## General Education Requirements

### Category I: COMMUNICATIONS

Completed \_\_\_\_\_ Needed \_\_\_\_\_

#### Communications I

(3 Credits) - ENGL 110

Gr.	Cr.			Transfer Course
_____	3	ENGL 110	College Composition I	_____

#### Communications II

(3 credits) - ENGL 120 or ENGL 125 (Select one)

Gr.	Cr.		Gr.	Cr.		Transfer Course
_____	3	ENGL 120	_____	3	ENGL 125	_____
		College Composition II			Introduction to Professional Writing	

#### Communications III

(3 credits) - COMM 110

Gr.	Cr.		Transfer Course
_____	3	COMM 110	_____
		Fundamentals of Public Speaking	

### Category II: ARTS & HUMANITIES

Completed \_\_\_\_\_ Needed \_\_\_\_\_

(6 Credits) - No more than 3 credits of Fine Arts may be used

Gr.	Cr.		Gr.	Cr.		Gr.	Cr.	
_____	3	D ART 110	_____	3	ENGL 278	_____	1	F MUSC 137
		Introduction to the Visual Arts			Alternative Literature			Jazz Ensemble
_____	3	F ART 122	_____	3	HIST 101	_____	1	F/ *MUSC 138
		Two-Dimensional Design			Western Civilization I			Percussion Ensemble
_____	3	F ART 124	_____	3	HIST 102	_____	1	F MUSC 145
		Three-Dimensional Design			Western Civilization II			Applied Music
_____	3	F ART 130	_____	3	HIST 103	_____	1	F MUSC 146
		Drawing I			United States to 1877			Applied Music - Major
_____	3	D ART 210	_____	3	HIST 104	_____	3	D PHIL 101
		Art History I			United States Since 1877			Introduction to Philosophy
_____	3	D ART 211	_____	3	D HIST 211	_____	3	PHIL 210
		Art History II			World Civilizations to 1500			Ethics
_____	3	F ART 220	_____	3	D HIST 212	_____	3	PHIL 220
		Painting I			World Civilizations since 1500			Introduction to Logic
_____	3	F ART 221	_____	3	HIST 220	_____	3	D PHIL 250
		Painting II			North Dakota History			Philosophy in Cinema
_____	3	F ART 230	_____	3	HIST 222	_____	3	PHIL 253
		Drawing II			History of the Western Frontier			Environmental Ethics
_____	3	F ART 250	_____	3	HIST 224	_____	3	D RELS 120
		Ceramics I			American Studies I			Religion in America
_____	3	F ART 251	_____	3	HIST 225	_____	3	RELS 201
		Ceramics II			American Studies II			Life and Letters of Paul
_____	2	F ART 265	_____	1-3	* HIST 243	_____	3	D RELS 203
		Sculpture I			Historical Investigations			World Religions
_____	2	F ART 266	_____	3	D HUMS 210	_____	3	RELS 220
		Sculpture II			Integrated Cultural Studies			Old Testament
_____	3	COMM 211	_____	1-4	HUMS 211	_____	3	RELS 230
		Oral Interpretation			Integrated Cultural Excursion			New Testament
_____	3	ENGL 211	_____	2	HUMS 212	_____	4	D SPAN 101
		Introduction to Creative Writing			Integrated Cultural Enrichment			First Year Spanish I
_____	3	D ENGL 221	_____	3	MUSC 100	_____	4	D SPAN 102
		Introduction to Drama			Music Appreciation			First Year Spanish II
_____	3	D ENGL 222	_____	1	F MUSC 117	_____	4	D SPAN 201
		Introduction to Poetry			Concert Choir			Second Year Spanish I
_____	3	D ENGL 233	_____	1	F MUSC 118	_____	4	D SPAN 202
		Fantasy and Science Fiction			Chamber Choir			Second Year Spanish II
_____	3	D ENGL 236	_____	1	F MUSC 121	_____	3	THEA 110
		Women and Literature			String Ensemble			Introduction to Theatre Arts
_____	3	D ENGL 238	_____	1	F MUSC 132	_____	3	F THEA 161
		Children's Literature			Wind Ensemble			Acting I
_____	3	D ENGL 251	_____	1	F MUSC 133	_____	3	D THEA 180
		British Literature I			Woodwind Ensemble I			Dramatic Literature and Style I
_____	3	D ENGL 252	_____	1	F MUSC 134	_____	3	D THEA 181
		British Literature II			Woodwind Ensemble II			Dramatic Literature and Style II
_____	3	D ENGL 261	_____	1	F MUSC 135	_____	3	F THEA 261
		American Literature I			Brass Ensemble I			Acting II
_____	3	D ENGL 262	_____	1	F MUSC 136	_____		
		American Literature II			Brass Ensemble II			
_____		Transfer Course	_____		Transfer Course	_____		Transfer Course

# General Education Requirements Continued

## Category III: SOCIAL & BEHAVIORAL SCIENCE

Completed \_\_\_\_\_ Needed \_\_\_\_\_

(6 Credits)

Gr.	Cr.			Gr.	Cr.			Gr.	Cr.		
_____	3	ANTH 170	Physical Anthropology and Archeology	_____	3	POLS 116	State and Local Government	_____	3	D SOC 115	Social Problems
_____	3	D ANTH 171	Introduction to Cultural Anthropology	_____	3	D POLS 220	International Politics	_____	3	D SOC 220	Family
_____	3	D CJ 201	Introduction to Criminal Justice	_____	3	D PSYC 100	Human Relations in Organizations	_____	3	D SOC 221	Minority Relations
_____	3	COMM 112	Understanding Media and Social Change	_____	3	PSYC 111	Introduction to Psychology	_____	3	D SOC 235	Cultural Diversity
_____	3	COMM 212	Interpersonal Communications	_____	3	* PSYC 211	Introduction to Behavior Modification	_____	3	D SOC 251	Gerontology
_____	3	ECON 105	Elements of Economics	_____	3	PSYC 250	Developmental Psychology	_____	3	D SOC 252	Criminology
_____	3	D ECON 201	Principles of Microeconomics	_____	3	* PSYC 261	Psychology of Adjustment	_____	3	D SOC 275	American Indian Studies
_____	3	ECON 202	Principles of Macroeconomics	_____	3	PSYC 270	Abnormal Psychology	_____	3	SWK 256	Development of Social Welfare
_____	3	D GEOG 161	World Regional Geography	_____	3	D SOC 110	Introduction to Sociology				
_____	3	POLS 115	American Government								

Transfer Course

Transfer Course

Transfer Course

## Category IV: MATH, SCIENCE & TECHNOLOGY

Completed \_\_\_\_\_ Needed \_\_\_\_\_

(15 Credits) -Math - 3 credit minimum (excluding MATH 137) - Lab Science pair - 8 credit minimum

Gr.	Cr.			Gr.	Cr.			Gr.	Cr.		
_____	3/1	ASTR 150	Meteorology/Lab	_____	4/1	CHEM 121	General Chemistry I/Lab	_____	3	* MATH 208	Discrete Mathematics
_____	1	* BIOL 102	Introduction to Aquarium Keeping	_____	4/1	CHEM 122	General Chemistry II/Lab	_____	3	MATH 210	Elementary Statistics
_____	3	BIOL 109	The Living World	_____	3	CSCI 101	Introduction to Computers	_____	4	* MATH 277	Mathematics for Elementary Teachers I
_____	3/1	BIOL 111	Concepts of Biology/Lab	_____	3	CSCI 122	Beginning Visual Basic	_____	3/1	MICR 202	Introductory Microbiology/Lab
_____	3/1	BIOL 115	Concepts of Anatomy & Physiology/Lab	_____	4	CSCI 160	Computer Science I	_____	3	* NUTR 240	Principles of Nutrition
_____	3	BIOL 124	Environmental Science	_____	4	CSCI 161	Computer Science II	_____	3/1	PHYS 100	Concepts of Physics/Lab
_____	3/1	BIOL 125	Introduction to Ecology/Lab	_____	3/1	GEOG 121	Physical Geography/Lab	_____	3/1	PHYS 110	Introductory Astronomy/Lab
_____	3/1	BIOL 126	Human Biology/Lab	_____	3/1	GEOG 102	Historical Geology/Lab	_____	4/1	PHYS 211	College Physics I/Lab
_____	3/1	BIOL 150	General Biology I/Lab	_____	3/1	GEOG 105	Physical Geology/Lab	_____	4/1	PHYS 212	College Physics II/Lab
_____	3/1	BIOL 151	General Biology II/Lab	_____	3	GIS 105	Fundamentals of GIS	_____	4/1	PHYS 251	University Physics I/Lab
_____	3/1	BIOL 170	General Zoology/Lab	_____	3	* GIS 107	GIS Applications	_____	4/1	PHYS 252	University Physics II/Lab
_____	3/1	BIOL 220	Anatomy and Physiology I/Lab	_____	4	MATH 103	College Algebra	_____	2/1	PLSC 110	World Food Crops/Lab
_____	3/1	BIOL 221	Anatomy and Physiology II/Lab	_____	3	MATH 104	Finite Mathematics	_____	3/1	SCNC 101	Physical Science I/Lab (Biology & Chemistry)
_____	3/1	BIOL 250	Survey of Tropical Biology/Lab	_____	2	MATH 105	Trigonometry	_____	3/1	SCNC 102	Physical Science II/Lab (Physics & Geology)
_____	3/1	BOT 170	Plant Form and Diversity/Lab	_____	4	MATH 107	Pre-Calculus	_____	3/1	SCNC 103	Physical Science III/Lab (Astronomy & Meteorology)
_____	3/1	CHEM 110	Survey of Chemistry/Lab	_____	3	MATH 146	Applied Calculus I	_____			
_____	3/1	CHEM 112	Intro to Forensic Science/Lab	_____	4	MATH 165	Calculus I	_____	2/1	* SOIL 210	Introduction to Soil Science/Lab
_____	3/1	CHEM 114	Chemistry in Art/Lab	_____	4	MATH 166	Calculus II				
_____	4/1	CHEM 115	Introductory Chemistry/Lab								
_____	4/1	CHEM 116	Intro to Organic and Biochemistry/Lab								

Transfer Course

Transfer Course

Transfer Course

Completed \_\_\_\_\_ Needed \_\_\_\_\_

Gr.	Cr.		Gr.	Cr.		Gr.	Cr.	
	3	ART 122 Two-Dimensional Design		3	COMM 240 Introduction to News Photography		1/1	MUSC 130/131 Class Voice
	3	ART 124 Three-Dimensional Design		3	COMM 242 Advanced News Photography		1	MUSC 132 Wind Ensemble
	3/3	ART 130/230 Drawing I & II		3	COMM 244 Reporting and Feature Writing		1/1	MUSC 133/134 Woodwind Ensemble I & II
	3	ART 135 Sculptural Welding		3	COMM 270 Basic Video Production		1/1	MUSC 135/136 Brass Ensemble I & II
	2/2	ART 204/205 Jewelry I & II		1	COMM 281 Reporting and Editing: Mystician		1	MUSC 137 Jazz Ensemble
	3/3	ART 220/221 Painting I & II		1	COMM 283 Video Lab: MystiCast		1	MUSC 138 Percussion Ensemble
	2/2	ART 225/226 Water Media I & II		1	COMM 284 Radio Lab: The MYX		1/1	MUSC 145/146 Applied Music & Applied Music -Major
	3	ART 231 Figure Drawing I		1	COMM 285 Communication Arts Lab		1/1	MUSC 151/152 Class Piano I & II
	3/3	ART 250/251 Ceramics I & II		1-3 **	COMM 299 Special Topics		1/1	MUSC 153/154 Class Guitar-Beginner & II
	1-3	ART 252 Advanced Ceramics		3	ENGL 213 Literary Publications		1	MUSC 155 Guitar Ensemble
	2/2	ART 265/266 Sculpture I & II		1-3 **	ENGL 299 Special Topics		1 **	MUSC 160 Mini-Music
	3/3	ART 270/271 Printmaking I & II		1	FYE 101 Seminar on Success		1/1	MUSC 230/231 Class Voice
	1-3 **	ART 299 Special Topics		2	HPER 100 Concepts of Fitness and Wellness		1/1	MUSC 251/252 Class Piano III & IV
	3	AUTO 101 Intro to Automotive Technology		1	HPER 101 Activity: Introductory Level		1-3 **	MUSC 299 Special Topics
	1	BIOL 102 Introduction to Aquarium Keeping		1/1	HPER 150/151 Varsity Athletics		2	NURS 100 Nurse Assistant Training
	1	BIOL 108 Beginning Birding		1	HPER 202 Activity: Intermediate Level		2	PLA 201 Prior Learning Assessment: Portfolio
	3/1	BIOL 125 Introduction to Ecology/Lab		1	HPER 210 First Aid, CPR and AED		2	PSYC 105 Relationships and Self Esteem
	3/1	BIOL 126 Human Biology/Lab		1	HPER 212 Introduction to Self Defense		3	PSYC 207 Introduction to Sports and Performance Psychology
	3	BCT 216 Sustainable Building I		1/1	HPER 250/251 Varsity Athletics			
	3	CARP 112 Intro to the Green Environment		1-3 **	HPER 299 Special Topics		3	THEA 161 Acting I
	3/1	CHEM 114 Chemistry in Art/Lab		1-4	HUMS 211 Integrated Cultural Excursion		3/3	THEA 167/267 Dance-Theatre Movement I & II
	3	CJ 235 Field Experience and Internship		2	HUMS 212 Integrated Cultural Enrichment		1-3	THEA 201 Theatre Practicum
	3	COMM 200 Introduction to Media Writing		2	MS 101 Foundations of Leadership		3	THEA 247 Stage Makeup
	3	COMM 201 Interpretive and Opinion Writing		2	MS 102 Basic Leadership		1-3	THEA 255 One Act Play Production
	3	COMM 206 Digital Communication Fundamentals		2	MS 110 Military Physical Fitness		3	THEA 270 Stagecraft
	3	COMM 222 Voice and Diction		1	MUSC 117 Concert Choir		1	XXX 195/295 Service Learning (prefix for Service Learning is discipline specific)
	3	COMM 224 Social Media, Writing & Design		1	MUSC 118 Chamber Choir			
	3	COMM 225 Introduction to Audio Production		1	MUSC 121 String Ensemble			

Completed	Needed
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100	100

[illegible]

## Academic Skills Courses (ASC)

*The following Academic Skills Courses (ASC) are pre-college courses that indicate the need for college preparation work before enrollment in college level courses. These courses will not fulfill general education requirements, institutional credit requirements and cannot be included in the semester hours required for an Associate in Science degree.*

Gr.	Cr.		Gr.	Cr.	
_____	2	ASC 082 Effective Reading	_____	2	ASC 94 College Writing Prep I
_____	2	ASC 91 Algebra Prep I	_____	2	ASC 95 College Writing Prep II
_____	2	ASC 92 Algebra Prep II	_____	2	ASC 96 College Writing Prep III
_____	2	ASC 93 Algebra Prep III	_____	3/1	ASC 098 Basic Biology/Lab

## Degree Checklist

### Credits

- \_\_\_\_\_ Earned a minimum of 3 credits in ENGL 110
  - \_\_\_\_\_ Earned a minimum of 3 credits in ENGL 120 or ENGL 125
  - \_\_\_\_\_ Earned a minimum of 3 credits in COMM 110
  - \_\_\_\_\_ Earned a minimum of 6 credits in Arts & Humanities <sup>1</sup>
  - \_\_\_\_\_ Earned a minimum of 6 credits in Social & Behavioral Sciences
  - \_\_\_\_\_ Earned a minimum of 15 credits in Math, Science & Technology <sup>2</sup>
  - \_\_\_\_\_ Earned a minimum of 2 credits of Enrichment
  - \_\_\_\_\_ Earned a minimum of 22 credits of Electives
  - Earned a minimum of 60 credits
- Academic Skills Courses (ASC) do not count toward graduation*

- ☐ Earned at least 15 semester hours of institutional credit from BSC
- ☐ Minimum of 2.00 institutional GPA (BSC only)
- ☐ Minimum of 2.00 cumulative GPA (BSC + Transfer)
- ☐ Earned a minimum of 3 credits from a course designated as Diversity
- ☐ Cleared all college obligations
- ☐ Satisfied all degree seeking admission requirements
- ☐ Filed an Application for Degree in the Academic Records Office immediately following enrollment in final semester

***Specific programs may require additional degree/program requirements; refer to your program.***

Advisor: \_\_\_\_\_

Office: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

<sup>1</sup> No more than 3 hours of Fine Arts may be used.

<sup>2</sup> Laboratory science pair - 8 credit minimum, Math (excluding MATH 137) - 3 credit minimum