



# Instrumentation & Control Technology

Program Certificate  
Advising Worksheet\* 2021-2022

Prescribed Technical Program Total	52
General Education Total	4
<b>Total Degree Credits</b>	<b>56</b>

## Freshman Fall Semester

### Prescribed Technical Program Requirements

ELEC	100/100L	Direct Current Analysis/Lab	5
ELEC	118/118L	Solid State Devices I/Lab	5
ELEC	114/114L	Digital Electronics I/Lab	4
<b>Total Credits</b>			<b>14</b>

## Freshman Spring Semester

### Prescribed Technical Program Requirements

ELEC	130/130L	Active Devices/Lab	5
ELEC	120/120L	AC Analysis/Lab	5
ELEC	115/115L	Digital Electronics II/Lab	4
<b>Total Credits</b>			<b>14</b>

## Sophomore Fall Semester

### Prescribed Technical Program Requirements

ICTL	205	Mechanical Practices	4
ICTL	215	Instrument Drawings & Documentation	4
ICTL	225	Input & Output Devices	4
<b>Total Credits</b>			<b>12</b>

## Sophomore Spring Semester

### Prescribed Technical Program Requirements

ICTL	235	Motors & Controllers	4
ICTL	245	Controls	4
ICTL	255	Automation Overview	4
<b>Total Credits</b>			<b>12</b>

## General Education Requirements

### Complete 4 credits of general education in any two areas of study.

1.	2
2.	2

Students with a Journeyman Electrician License or at least 28 college credits from an accredited electrician program may move directly into the Sophomore year of the program (ICTL coursework)

\*Unofficial advising worksheet used for planning purposes only

# Program Certificate - Programs Containing 45 or more Prescribed Technical Program Requirements 2021-2022 Catalog

## Degree Checklist

- |                          |  |                          |   |
|--------------------------|--|--------------------------|---|
| <input type="checkbox"/> | Satisfied all degree seeking admission requirements                                      | <input type="checkbox"/> | Cleared all college obligations   |
| <input type="checkbox"/> | Completed a prescribed technical program   | <input type="checkbox"/> | Filed an Application for Degree in the Academic Records Office immediately following enrollment in final semester |
| <input type="checkbox"/> | Earned at least 15 semester hours of institutional credit from BSC                       |                          |   |
| <input type="checkbox"/> | Minimum of 2.00 GPA in a prescribed technical program                                    |                          | <b>Specific programs may require additional degree/program requirements; refer to your program.</b>               |
| <input type="checkbox"/> | Minimum of 2.00 institutional GPA (BSC only)   |                          |   |
| <input type="checkbox"/> | Minimum of 2.00 cumulative GPA (BSC + Transfer)  |                          |   |
| <input type="checkbox"/> | Earned a minimum of 4 semester hours of general education credit from two areas of study |                          |   |

### Legend

(\*) Course not approved as GERTA

## General Education Requirements

Programs containing 45 or more credits must complete 4 credits of general education from two areas of study. Area of study is based on course prefix.

Gr.	Cr.			Gr.	Cr.			Gr.	Cr.		
3	*	ACCT 200	Elements of Accounting I	3/1	BIOL 151	General Biology II/Lab	3	ENGL 125	Introduction to Professional Writing		
3	*	ACCT 201	Elements of Accounting II	3/1	BIOL 170	General Zoology/Lab	3	ENGL 211	Introduction to Creative Writing		
3		ANTH 170	Physical Anthropology and Archeology	3/1	BIOL 220	Anatomy and Physiology I/Lab	3	ENGL 221	Introduction to Drama		
3		ANTH 171	Introduction to Cultural Anthropology	3/1	BIOL 221	Anatomy and Physiology II/Lab	3	ENGL 222	Introduction to Poetry		
3		ART 110	Introduction to the Visual Arts	3/1	BIOL 250	Survey of Tropical Biology/Lab	3	ENGL 233	Fantasy and Science Fiction		
3		ART 122	Two-Dimensional Design	3/1	BOT 170	Plant Form and Diversity/Lab	3	ENGL 236	Women and Literature		
3		ART 124	Three-Dimensional Design	3	* BUSN 120	Fundamentals of Business	3	ENGL 238	Children's Literature		
3		ART 130	Drawing I	3/1	CHEM 110	Survey of Chemistry/Lab	3	ENGL 251	British Literature I		
3		ART 210	Art History I	3/1	CHEM 112	Introduction to Forensic Science/Lab	3	ENGL 252	British Literature II		
3		ART 211	Art History II	3/1	CHEM 114	Chemistry in Art/Lab	3	ENGL 261	American Literature I		
3		ART 220	Painting I	4/1	CHEM 115	Introductory Chemistry/Lab	3	ENGL 262	American Literature II		
3		ART 221	Painting II	4/1	CHEM 116	Intro to Organic and Biochemistry/Lab	3	ENGL 278	Alternative Literature		
3		ART 230	Drawing II	4/1	CHEM 121	General Chemistry I/Lab	3/1	GEOG 121	Physical Geography/Lab		
3		ART 250	Ceramics I	4/1	CHEM 122	General Chemistry II/Lab	3	GEOG 161	World Regional Geography		
3		ART 251	Ceramics II	3	* CIS 147	Principles of Information Security	3/1	GEOG 102	Historical Geography/Lab		
2		ART 265	Sculpture I	4	* CIS 164	Networking Fundamentals I	3/1	GEOG 105	Physical Geography/Lab		
2		ART 266	Sculpture II	3	* CIS 280	Cyber Ethics	3	GIS 105	Fundamentals of GIS		
3/1		ASTR 150	Meteorology/Lab	3	CJ 201	Introduction to Criminal Justice	3	* GIS 107	GIS Applications		
3	*	BADM 202	Principles of Management	3	COMM 110	Fundamentals of Public Speaking	3	HIST 101	Western Civilization I		
3	*	BADM 210	Advertising I	3	COMM 112	Understanding Media and Social Change	3	HIST 102	Western Civilization II		
3	*	BADM 240	Sales	3	COMM 211	Oral Interpretation	3	HIST 103	United States to 1877		
3	*	BADM 281	Organizational Behavior	3	COMM 212	Interpersonal Communications	3	HIST 104	United States Since 1877		
3	*	BADM 282	Human Resource Management	3	CSCI 101	Introduction to Computers	3	HIST 211	World Civilizations to 1500		
1	*	BIOL 102	Introduction to Aquarium Keeping	3	CSCI 122	Beginning Visual Basic	3	HIST 212	World Civilizations since 1500		
3		BIOL 109	The Living World	4	CSCI 160	Computer Science I	3	HIST 220	North Dakota History		
3/1		BIOL 111	Concepts of Biology/Lab	4	CSCI 161	Computer Science II	3	HIST 222	History of the Western Frontier		
3/1		BIOL 115	Concepts of Anatomy & Physiology/Lab	3	ECON 105	Elements of Economics	3	HIST 224	American Studies I		

3	BIOL 124	Environmental Science	3	ECON 201	Principles of Microeconomics	3	HIST 225	American Studies II
3/1	BIOL 125	Introduction to Ecology/Lab	3	ECON 202	Principles of Macroeconomics	1-3 *	HIST 243	Historical Investigations
3/1	BIOL 126	Human Biology/Lab	3	ENGL 110	College Composition I	3	HUMS 210	Integrated Cultural Studies
3/1	BIOL 150	General Biology I/Lab	3	ENGL 120	College Composition II			
1-4	HUMS 211	Integrated Cultural Excursion	3	PHIL 101	Introduction to Philosophy	3/1	SCNC 102	Physical Science II/Lab (Physics & Geology)
2	HUMS 212	Integrated Cultural Enrichment	3	PHIL 210	Ethics	3/1	SCNC 103	Physical Science III/Lab (Astronomy & Meteorology)
4	MATH 103	College Algebra	3	PHIL 220	Introduction to Logic			
3	MATH 104	Finite Mathematics	3	PHIL 250	Philosophy in Cinema			
2	MATH 105	Trigonometry	3	PHIL 253	Environmental Ethics	3	SOC 110	Introduction to Sociology
4	MATH 107	Pre-Calculus	3/1	PHYS 100	Concepts of Physics/Lab	3	SOC 115	Social Problems
3 *	MATH 137	Applied Algebra	3/1	PHYS 110	Introductory Astronomy/Lab	3	SOC 220	Family
3	MATH 146	Applied Calculus I	4/1	PHYS 211	College Physics I/Lab	3	SOC 221	Minority Relations
4	MATH 165	Calculus I	4/1	PHYS 212	College Physics II/Lab	3	SOC 235	Cultural Diversity
4	MATH 166	Calculus II	4/1	PHYS 251	University Physics I/Lab	3	SOC 251	Gerontology
3 *	MATH 208	Discrete Mathematics	4/1	PHYS 252	University Physics II/Lab	3	SOC 252	Criminology
3	MATH 210	Elementary Statistics	2/1	PLSC 110	World Food Crops/Lab	3	SOC 275	American Indian Studies
4 *	MATH 277	Mathematics for Elementary Teachers I	3	POLS 115	American Government	2/1 *	SOIL 210	Introduction to Soil Science/Lab
3/1	MICR 202	Introductory Microbiology/Lab	3	POLS 116	State and Local Government	4	SPAN 101	First Year Spanish I
3	MUSC 100	Music Appreciation	3	POLS 220	International Politics	4	SPAN 102	First Year Spanish II
1	MUSC 117	Concert Choir	3	PSYC 100	Human Relations In Organizations	4	SPAN 201	Second Year Spanish I
1	MUSC 118	Chamber Choir	3	PSYC 111	Introduction to Psychology	4	SPAN 202	Second Year Spanish II
1	MUSC 121	String Ensemble	3	* PSYC 211	Introduction to Behavior Modification	3	SWK 256	Development of Social Welfare
1	MUSC 132	Wind Ensemble	3	PSYC 250	Developmental Psychology	3	THEA 110	Introduction to Theatre Arts
1	MUSC 133	Woodwind Ensemble I	3 *	PSYC 261	Psychology of Adjustment	3	THEA 161	Acting I
1	MUSC 134	Woodwind Ensemble II	3	PSYC 270	Abnormal Psychology	3	THEA 180	Dramatic Literature and Style I
1	MUSC 135	Brass Ensemble I	3	RELS 120	Religion in America	3	THEA 181	Dramatic Literature and Style II
1	MUSC 136	Brass Ensemble II	3	RELS 201	Life and Letters of Paul	3	THEA 261	Acting II
1	MUSC 137	Jazz Ensemble	3	RELS 203	World Religions			
1 *	MUSC 138	Percussion Ensemble	3	RELS 220	Old Testament			
1	MUSC 145	Applied Music	3	RELS 230	New Testament			
1	MUSC 146	Applied Music - Major	3/1	SCNC 101	Physical Science I/Lab (Biology & Chemistry)			
3 *	NUTR 240	Principles of Nutrition						

Transfer Course

Transfer Course

Transfer Course

## 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 a Program Certificate.

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

\*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.