



## Industrial Controls AAS - 72 credits

Program Area: Electronic Engineering Technology (Fall 2018)

**\*\*\*REMEMBER TO REGISTER EARLY\*\*\***

### Program Description

The AAS Electronics Engineering Technology program with Industrial Controls Emphasis educates students in the areas of basic electronic theory and analysis, industrial control principles and practices, and provides students with the skills required to obtain jobs as industrial electronic technicians in a wide variety of industries. Training includes basic theory and extensive hands-on experience with industrial wiring practices, motors and motor controllers, programmable controllers, and a variety of industrial instrumentation.

### Program Outcomes

- Operate common electronic test equipment, oscilloscopes, DMM's, and signal generators
- Read and understand circuit schematics, i.e. recognize basic circuit configurations and understand their operation
- Understand basic circuit analysis techniques
- Troubleshoot and repair common electronic circuits
- Install, program, and troubleshoot programmable controllers (PLC's) used in industrial plants
- Install, troubleshoot, and configure AC and DC motors
- Install and configure various PC hardware components, e.g. memory, hard drives, modems, and network cards
- Be proficient at cabling using appropriate standards and media

### Required Courses

Number	Name	Credits	Term
ELTN 1406	DC Electricity	4	
ELTN 1408	AC Electricity	4	
ELTN 1412	Digital Electronics	2	
MATH 1115	Contemporary Math	4	
ELTN 1422	Media and Cabling	2	
ELTN 1432*	Solid-State Devices	5	
ELTN 1442*	Motors and Generators	6	
ELTN 1500	Practical PC Maintenance	2	
ELTN 1470	Systematic Troubleshooting	1	
ELTN 2440*	Motor Speed Controllers	3	
ELTN 2442*	Automation Controllers	3	
ELTN 2444*	Power Distribution for Industrial Controls	4	
ELTN 2400*	CET Exam Preparation	2	
ELTN 2430*	Introduction to Instrumentation	3	
ELTN 2450*	Automation Controller Applications	5	
ELTN 2452*	Process Control Theory	3	
	<i>Choose 8 credits from the following (other courses may be allowed as electives with program advisor approval):</i> <ul style="list-style-type: none"> <li>• Any <b>ELTN</b> or <b>ELEC</b> courses not listed above</li> <li>• COMM 1601: Interviewing Procedure and Practice (1 credit)</li> </ul>	8	
<b>MnTC General Education Requirements</b>			
Goal Area 1	Communication (3 credit minimum)	11	
Goal Area 5 OR Goal Area 6	Social and Behavior Sciences OR Humanities (3 credit minimum)		
Goal Areas 1-10	General Education - Other		
<b>Total Credits</b>		<b>72</b>	

\*Requires a prerequisite or a concurrent course

### Program Articulations

This program has an articulation agreement in place that allows students to transfer credits earned in the LSC Electronic Engineering Technology – Industrial Controls AAS degree: Minnesota State University Moorhead, BS in Operations Management: <http://www.mntransfer.org/download.php?id=4813>



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**Pre-program Requirements**

Successful entry into this program requires a specific level of skill in the areas of English, mathematics, and reading. Program entry will depend, in part, on meeting the prerequisites listed below:

**English/Reading:**

- A score of 78 or higher on the reading comprehension portion of the Accuplacer, or
- Completion of ENGL/READ 0950 or 0955 (or equivalent course or higher). ENGL/READ 0950 may be taken concurrently with Semester I coursework.

**Mathematics:**

- A score of 71 or higher on the **Elementary Algebra Skills** portion of the Accuplacer, or
- Completion of MATH 0460 (or equivalent or higher). Math 0460 may be taken concurrently with Semester I coursework, or
- With instructor permission, concurrent enrollment in MATH 1115.

*For interpretation of test results and selection of appropriate coursework;  
or general information about the program, admissions, financial aid, and getting started at LSC,  
contact the professional advising team at: [pat@lsc.edu](mailto:pat@lsc.edu) or 218-733-7601*

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For more information about the Electronic Engineering Technology – Industrial Controls AAS Degree including course descriptions, course prerequisites, the gainful employment disclosure, and potential career opportunities, see program website: <https://degrees.lsc.edu/electrical-engineering/>

- or -

Contact Faculty Advisors, Dave Lustila: [d.lustila@lsc.edu](mailto:d.lustila@lsc.edu) or 218-733-7687 or Chris Ringsred: [c.ringsred@lsc.edu](mailto:c.ringsred@lsc.edu) or 218-733-7688 or Alan Alberg: [a.alberg@lsc.edu](mailto:a.alberg@lsc.edu) or 218-733-7687



MINNESOTA STATE

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