

**Engineering Technology – Operations**

ASSOCIATE OF APPLIED SCIENCE DEGREE (AAS)

REQUIRED CREDITS: 60

DEGREE CODE: ETOPER-AAS

**DESCRIPTION**

This degree provides students with classroom and laboratory experiences in electricity, mechanical power, pneumatics, hydraulics and ferrous and non-ferrous material. The Operations Emphasis focuses on those skills used in operational settings. Academic skills emphasizing related math, science and human relations are stressed to prepare students to meet the challenges common in the workplace.

**STUDENT LEARNING OUTCOMES**

- Demonstrate the knowledge and ability to follow guidelines for safe operation and maintenance of various mechanical, electrical, and fluid power systems.
- Explain and show the skills to design and operate basic electrical, mechanical, and fluid power systems and to use computer-based programmable logic controller devices to monitor their operation and performance.
- Apply the skills and knowledge to various troubleshooting techniques for identification and correction of faults in electrical circuits and mechanical and high pressure fluid power systems.
- Utilize knowledge and skills in mathematics, written and oral communication, and teamwork.
- Demonstrate skills necessary for further education and managerial positions.

**PLEASE NOTE** - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

**GENERAL EDUCATION REQUIREMENTS (27 CREDITS)****MATHEMATICS (3 credits)**

Recommended: MATH 116 Technical Mathematics

**ENGLISH COMPOSITION (3-5 credits)**

See AAS policy p. 46 for courses

**COMMUNICATIONS (3 credits)**

Recommended: COM 115 Applied Communication

**HUMAN RELATIONS (3 credits)**

Recommended: HIST 106 European Civilization Since 1648

**NATURAL SCIENCE (8 credits)**

Required: EGG 131 and 131L

Recommended: MT 102B Fundamental of Electricity

**FINE ARTS/HUMANITIES/SOCIAL SCIENCE (3 credits)**

Recommended: MUS 231 Recording Techniques I

**U.S. AND NEVADA CONSTITUTIONS (4-6 credits)**

Recommended: PSC 101 Introduction to American Politics

**SPECIAL PROGRAM REQUIREMENTS (33 CREDITS)****CORE REQUIREMENTS (30 credits)**

AC 103B	Introduction to HVAC Mechanical Theory and Application	5
CONS 120B	Construction Plans and Specifications	3
MT 104B	Industrial Electricity	4
MT 106B	Mechanical Power Transmission	4
MT 108B	Fluid Power (Pneumatics, Hydraulics, Instrumentation)	4
MT 110B	Material Science I (Ferrous and Non-Ferrous)	4
MT 115B	Programmable Logic Controllers I	3
MT 116B	Programmable Logic Controllers II	3

**Choose one from the following (0-3 credits)**

IS 100B	Core Computing Competency	0
IS 101	Introduction to Information Systems	3

**ELECTIVES (choose 3-4 credits)**

Any course with ET or MT prefix

**FULL-TIME STUDENT DEGREE PLAN***Plan can be modified to fit the needs of part-time students by adding more semesters.***FIRST SEMESTER**

	Credits
MATH 116 Technical Mathematics	3
MT 102B Fundamentals of Electricity	4
AC 103B Introduction to HVAC Mechanical Theory and Application	5
CONS 120B Construction Plans and Specifications	3
IS 100B or IS 101	0-3
<b>TOTAL CREDITS</b> .....	<b>15-18</b>

**SECOND SEMESTER**

	Credits
Complete AAS English Composition p. 46	3-5
COM 115 Applied Communication	3
EGG 131 Technical Physics I	3
EGG 131L Technical Physics I – Lab	1
MT 104B Industrial Electricity	4
<b>TOTAL CREDITS</b> .....	<b>14-16</b>

**THIRD SEMESTER**

	Credits
PSC 101 Introduction to American Politics	4
<b>TOTAL CREDITS</b> .....	<b>4</b>

**FOURTH SEMESTER**

	Credits
MT 106B Mechanical Power Transmission	4
MT 110B Material Science I (Ferrous and Non-Ferrous)	4
MT 115B Programmable Logic Controllers I	3
Complete Electives (see courses this page)	3-4
<b>TOTAL CREDITS</b> .....	<b>14-15</b>

**FIFTH SEMESTER**

	Credits
HIST 106 European Civilization Since 1648	3
MUS 231 Recording Techniques I	3
MT 108B Fluid Power (Pneumatics, Hydraulics, Instrumentation)	4
MT 116B Programmable Logic Controllers II	3
<b>TOTAL CREDITS</b> .....	<b>13</b>

**DEGREE PLAN TOTAL CREDITS**.....**60-66**

- NOTE**
- Course numbers with the “B” suffix may be non-transferable for a NSHE baccalaureate degree.
  - Course numbers with the “H” suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit [www.csn.edu/honors](http://www.csn.edu/honors).
  - In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
  - Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog which is more than six years old at the time of graduation.

