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)
Choices: ET 111B or MATH 116 or 124 or 126 or 127
Recommended: MATH 116 Technical Mathematics

ENGLISH COMPOSITION (3-5 credits)
See AAS policy p. 48 for courses

COMMUNICATIONS (3 credits)
Choices: BUS 108 or COM 101 or 115
Recommended: COM 115 Applied Communication

HUMAN RELATIONS (3 credits)
Choices: See AAS policy p. 48 for courses
Recommended: HIST 106 European Civilization Since 1648

NATURAL SCIENCE (8 credits)
Required: EGG 131 and 131L and either ET 131B or MT 102B
Recommended (for "and either" portion of required): MT 102B

FINE ARTS/HUMANITIES/SOCIAL SCIENCE (3 credits)
Choices: See AAS policy p. 49 for courses
Recommended: MUS 231 Recording Techniques I

U.S. AND NEVADA CONSTITUTIONS (4-6 credits)
Choices: See AAS policy p. 49 for courses
Recommended: PSC 101 Introduction to American Politics

SPECIAL PROGRAM REQUIREMENTS (33 CREDITS)

CORE REQUIREMENTS (33 credits)

AC 103B	Introduction to HVAC Mechanical Theory and Application	5
CIT 119B	Business Data Networks	3
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

Digital Literacy Requirement (0-3 credits)

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

See Degree Plan on next page.

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.
- 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.

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FULL-TIME STUDENT DEGREE PLAN

Add more semesters to modify this plan to fit part-time student needs.

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
TOTAL CREDITS	***15-18***

SECOND SEMESTER	**Credits**
Complete AAS English Composition p. 48	3-5
CIT 119B Business Data Networks	3
EGG 131 Technical Physics I	3
EGG 131L Technical Physics I – Lab	1
MT 104B Industrial Electricity	4
TOTAL CREDITS	***14-16***

THIRD SEMESTER	**Credits**
PSC 101 Introduction to American Politics	4
TOTAL CREDITS	***4***

FOURTH SEMESTER	**Credits**
COM 115 Applied Communication	3
MT 106B Mechanical Power Transmission	4
MT 110B Material Science I (Ferrous and Non-Ferrous)	4
MT 115B Programmable Logic Controllers I	3
TOTAL CREDITS	***14-15***

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
TOTAL CREDITS	***13***

DEGREE PLAN TOTAL CREDITS **60-65**