

Energy Programs: Bismarck State College

<http://www.bismarckstate.com/online/>

Electric Power Technology: Program-Specific Courses

<http://www.bismarckstate.com/energy/students/elpw/aas.asp>

ELPW 101 - Basic Computer Skills
ENRT 102 - Introduction to the Electrical Industry
ENRT 103 - Applied Math
ENRT 106 - DC Fundamentals
ENRT 108 - AC Fundamentals
ELPW 105 - Electrical System Fundamentals
ELPW 109 - Electrical Industry Safety
ELPW 110 - Basic Print Reading
ELPW 112 - Electrical System Components
ENRT 115 - Industrial Composition
ELPW 118 - Industrial Communications
ELPW 200 - Advanced Print Reading
ELPW 202 - Advanced Industrial Safety
ELPW 204 - Advanced Electrical Systems
ELPW 206 - Electrical System Protection
You must choose one area of specialization for a total of 12 semester credit hours from the following:

Line construction: ELPW 210 - Overhead Transmission and Distribution Line Construction (4 hours) ELPW 230 - Underground Line Construction (4 hours) ELPW 250 - Transformers (4 hours)

Metering: ELPW 208 - Advanced Math (4 hours) ELPW 213 - Fundamentals of Metering (3 hours) ELPW 233 - Single Phase Metering & Polyphase Metering (3 hours) ELPW 253 - Advanced Metering (2 hours)

Substation: ELPW 231 - Substation Construction & Maintenance (4 hours) ELPW 211 - Substation Relays (4 hours) ELPW 251 - Substation Operations (4 hours)

System Design: ELPW 208 - Advanced Math (4 hours) ELPW 212 - System Design Basics (3 hours) ELPW 232 - System Design Analysis (3 hours) ELPW 252 - Civil Design (2 hours)

Electrical Transmission Systems: Program-Specific Courses

<http://www.bismarckstate.com/energy/students/etst/aas.asp>

ETST 240 - Power Industry Concepts
ETST 242 - Applied Mathematics for System Operators
ENRT 106 - D.C. Fundamentals
ENRT 108 - A.C. Fundamentals
ETST 250 - Electrical Generation Theories
ETST 254 - System Elements I - Substations
ETST 256 - System Elements II - Transformers
ETST 258 - System Elements III - Protective Relaying
ETST 260 - Electrical Diagram Interpretation
ETST 262 - Power System Operations
ETST 266 - Interconnected System Operations
ETST 268 - Power Flow
ETST 270 - System Operator Work Practices
ETST 272 - Power System Safety
ETST 274 - Communication and Control Technology
ETST 276 - Power System Economics
ETST 278 - Power System Emergency
ETST 280 - Regulatory Policies and Procedures

Nuclear Power: Program-Specific Courses

<http://www.bismarckstate.com/energy/students/nupt/aas.asp>

CSCI 101 - Introduction to Computers
ENRT 102 - Introduction to the Electrical Industry
NUPT 101 - Overview of Nuclear Energy
NUPT 103 - Nuclear Mathematical Fundamentals
ENRT 115 - Industrial Composition
NUPT 105 - Classical Physics
NUPT 107 - Engineering Drawings, Diagrams and Schematics
NUPT 109 - Electrical Science
NUPT 215 - Nuclear Plant Chemistry
NUPT 213 - Nuclear Physics
NUPT 217 - Heat Transfer, Fluid Flow and Thermodynamics
NUPT 220 - Reactor Theory
NUPT 111 - Instrumentation and Control

NUPT 219 - Material Science
NUPT 221 - Science of Radiological Protection
NUPT 223 - Reactor Safety Design
NUPT 225 - Nuclear Plant System Component Design and Function
NUPT 227 - Conduct of Facility Operations

Process Plant Technology: Program-Specific Courses

<http://www.bismarckstate.com/energy/students/prop/aas.asp>

PROP 102 - Introduction to Process Technology
ENRT 103 - Applied Math
ENRT 105 - Safety
ENRT 106 - DC Fundamentals
ENRT 108 - AC Fundamentals
PROP 201 - Process Equipment
ENRT 112 - Basic Print Reading
ENRT 116 - Instrumentation & Control
ENRT 118 - Thermodynamics
ENRT 120 - Water Purification & Treatment
PROP 216 - Process Boilers
PROP 235 - Hydro-Carbon Chemistry
PROP 237 - Distillation & Refinery Operations
PROP 239 - Gas Processing
PROP 244 - Ethanol & Biofuels Production
PROP 212 - Auxiliary Systems
PROP 218 - Process Operations & Troubleshooting
*ENRT 220 - Practical Applications

Power Plant Technology: Program-Specific Courses

<http://www.bismarckstate.com/energy/students/pwrp/aas.asp>

ENRT 102 - Introduction to the Electrical Industry
ENRT 103 - Applied Math
ENRT 105 - Safety
ENRT 106 - DC Fundamentals
ENRT 108 - AC Fundamentals
PWRP 201 - Power Plant Equipment
ENRT 112 - Basic Print Reading

ENRT 116 - Instrumentation & Control
ENRT 118 - Thermodynamics
ENRT 120 - Water Purification & Treatment
PWRP 203 - Energy Sources & Conversions
PWRP 207 - Boilers
PWRP 210 - Gas Turbines & Combined Cycle Operations
PWRP 212 - Steam Turbines & Auxiliaries
PWRP 214 - Power Generations
PWRP 216 - Electrical System Components & Protection
PWRP 218 - Plant Operations & Troubleshooting
*ENRT 220 - Practical Applications

BAS in Energy Management

This online four-year degree program is designed to educate energy workers to move into supervisory and management positions. To enroll in the Bachelor of Applied Science in Energy Management program, a student must have completed an Associate in Applied Science (AAS), Certificate or Diploma in an accredited and approved program in an energy technology related field.

Information on Bismarck State College's AAS, Certificate and Diploma programs in energy technology fields can be found at bismarckstate.edu/energy/

The BAS in Energy Management degree requires a minimum of 126-141 credits, including completion of general education classes, 21 credits of core management courses and 24 credits of energy specific management courses. The classes are offered in eight- and sixteen-week formats.

BSC will collaborate with other North Dakota University System institutions to provide some of the upper level management courses.

Career opportunities in this field are projected to be plentiful because of growth in the energy industry and anticipated retirements of many long-time employees in the next five to 10 years. Bismarck State College developed the program at the request of industry and energy technology students and graduates.