

MODULE DESCRIPTIONS

Module ENM1010: Overview of Alberta Geology

Students describe the nature and origin of Alberta's energy and mineral resources, explain their significance in society, and identify related career opportunities.

Module ENM1020: Nonrenewable Resources

Students examine general applications of exploration, recovery and production, refining, and reclamation technologies within a nonrenewable energy or mineral industry; and they identify related career opportunities. Potential areas of investigation include conventional crude oil, oil sands, natural gas, coal, nuclear fuels, metallic minerals, nonmetallic minerals and structural materials.

Module ENM1050: Renewable Resources

Students demonstrate applications of one or more renewable energy technologies, examine the contributions of each to sustainable energy development, and identify related career opportunities. Potential areas of investigation include solar, hydro, wind, tidal, biomass and geothermal energy, as well as energy generated from waste.

Module ENM1060: Consumer Products & Services

Students examine the basic techniques involved in developing consumer products and/or services within an energy or mineral industry, and they identify related career opportunities.

Module ENM1090: Fundamentals of Recycling

Students examine opportunities to recycle natural and manufactured materials, and they present the results of research on one or more recycling systems.

Module ENM1100: Conservation Challenge

Students examine relationships between energy and mineral development and the environment, and they propose individual and shared actions that foster environmental stewardship.

Module ENM2010: Managing Alberta's Resources

Students research agencies and structures used to manage the development of Alberta's energy and mineral resources.

Module ENM2020: Conventional Oil/Gas 1 (Resource Exploration)

Students examine specific exploration techniques and technologies within the context of Alberta's conventional oil and/or gas deposits, and they describe related career opportunities.

Module ENM2030: Oil Sands/Heavy Oil/Coal 1 (Resource Exploration)

Students examine specific exploration techniques and technologies within the context of Alberta's oil sands, heavy oil or coal deposits, and they describe related career opportunities.

Module ENM2040: Metals/Nonmetals 1 (Resource Exploration)

Students examine specific exploration techniques and technologies within the context of a metallic and/or nonmetallic mineral deposit, and they describe related career opportunities.

Module ENM2050: Renewable Energy Technology

Students define and explain the need for sustainable energy development, research one or more renewable energy technologies; e.g., hydro, wind, solar, tidal, biomass, geothermal, nuclear, hydrogen, ethanol, blended fuel, fuel cell, and construct a model of a renewable energy system.

Module ENM2060: Refining Hydrocarbons

Students examine the principles and technologies involved in processing natural gas, refining crude oil, upgrading heavy oils and bitumen, or processing coal. Students also describe related career opportunities.

Module ENM2070: Refining Rocks & Minerals

Students examine the principles and processes involved in refining an industrial (nonmetallic) mineral or a metallic mineral, and they describe related career opportunities.

Module ENM2080: Supply & Distribution

Students research marketing and distribution networks within an energy or mineral industry; examine regulatory structures and policies that influence supply of a commodity, product or service; and describe related career opportunities.

Module ENM2090: Energy Designs/Systems 1 (Basic Principles)

Students investigate the basic principles of energy conservation and efficiency and relate them to energy designs and systems used in the residential, commercial or transportation sector.

Module ENM2100: Environmental Safety

Students identify environmental hazards that result from activities within an energy or mineral industry, and describe specific environmental monitoring and management practices adopted by the industry.

Module ENM3010: Energy & the Environment

Students assess the social, economic and environmental benefits and costs of resource development, and demonstrate personal and shared actions that foster energy conservation and environmental stewardship.

Module ENM3020: Conventional Oil/Gas 2 (Recovery & Production)

Students examine specific recovery and production techniques within the context of a conventional oil and/or gas industry, and they explain related career opportunities.

Module ENM3030: Oil Sands/Heavy Oil/Coal 2 (Recovery & Production)

Students examine specific recovery and production techniques within the context of Alberta's oil sands, heavy oil or coal deposits; and they explain related career opportunities.

Module ENM3040: Metals/Nonmetals 2 (Recovery & Production)

Students examine specific recovery and production techniques within the context of a metallic and/or nonmetallic mineral deposit, and they explain related career opportunities.

Module ENM3050: Sustainable Energy (The Power & Potential)

Students examine opportunities for planning renewable energy development and conserving conventional energy for its ideal use.

Module ENM3060: Petrochemicals

Students investigate the conversion of hydrocarbons into consumer products within a petrochemical industry, and they explain related career opportunities.

Module ENM3070: Industrial Materials (Primary Manufacturing)

Students investigate technologies used to convert petroleum and mineral resources into industrial (stock) materials used in secondary manufacturing processes, and they explain related career opportunities.

Module ENM3080: Market Basics & Trends

Students explain the basic principles involved in marketing an energy or mineral resource, and analyze trends in the development and marketing of energy or mineral products.

Module ENM3090: Energy Designs/Systems 2 (Practical Applications)

Students analyze energy-saving technologies and systems and design a residential/commercial structure or transportation technology that demonstrates the principles of energy conservation and efficiency.

Module ENM3100: Integrated Resource Management (Balancing Needs)

Students develop and present an integrated plan for sustainable resource development that incorporates supply side and demand side resource management.