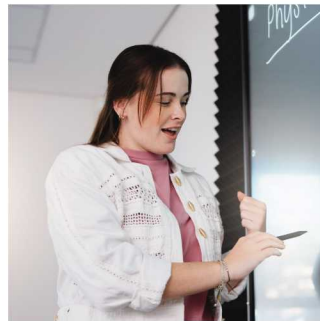




# ENERGY & NATURAL RESOURCES

## CONTENT STANDARDS



## POSTSECONDARY

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# OVERVIEW

In the coming years, energy companies will hire millions of people to build, support, innovate, engineer, and safeguard America's Clean Energy Future. Creative and technical thinkers are essential for critical mainstream careers that define today's energy industry, and even more will be needed to engage with new and emerging technologies that will shape the world of tomorrow.

The competencies in this document offer a broad perspective on the knowledge, skills, and abilities individuals need to effectively pursue a postsecondary credential in one of three pathways: skilled trades, technical, and business. These competencies are designed to guide the development of various postsecondary programs that lead to industry-recognized certifications, certificates, and degrees. Institutions should collaborate with state and local advisory committees to determine what is most relevant and suitable for their students and programs in providing that crucial link between the institution and the business community.

**Thank you to the partners who contributed content expertise and guidance and to Invest in Our Future for supporting the creation of these Energy & Natural Resources Content Standards.**

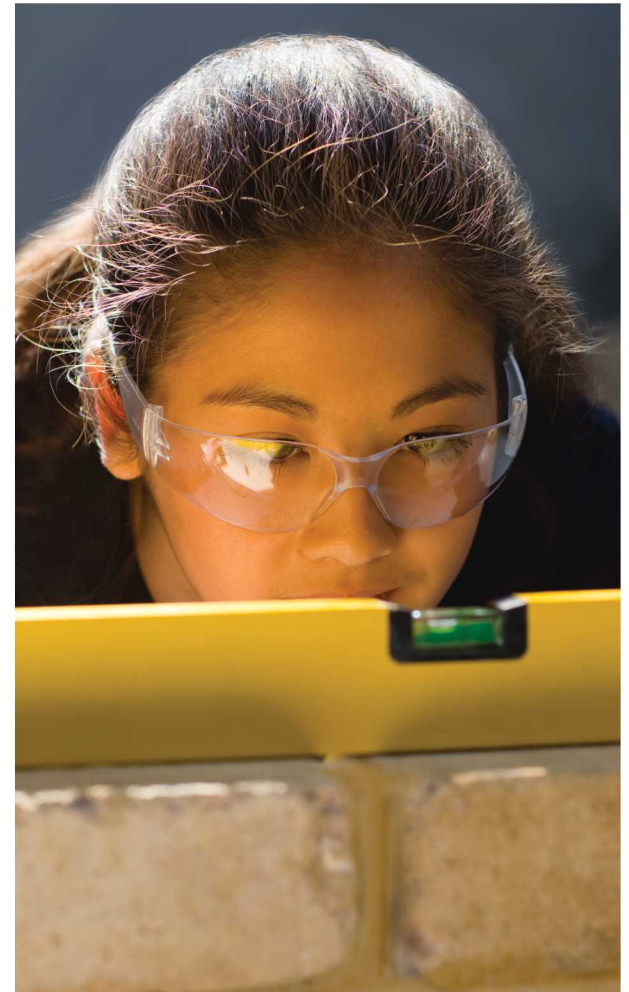
# OVERVIEW

SKILLED TRADES	TECHNICAL	BUSINESS
Description	Description	Description
<p>Careers requiring on-the-job training, specialized certifications, or degree programs that form the backbone of the energy and natural resources sector by construction, operation, and maintenance of the infrastructure that supports extraction, energy generation, transmission, distribution, efficiency, and storage.</p>	<p>Careers requiring technical certifications or degrees support system design and evaluation to enhance efficiencies. These careers utilize science and mathematics, statistics, and various software to guarantee safe, reliable, and sustainable practices.</p>	<p>Careers requiring a technical certification or degree represent careers that support the energy and natural resources sector's governance, financial, financial, and leadership, and financial governance functions. Individuals working in the business side of this sector engage in financial markets and trades drive the strategic direction of companies.</p>
Sample Careers	Sample Careers	Sample Careers
<p>Apparatus/Substation Technicians, Building Maintenance, Carpenters, Electricians, Environmental Health and Safety, Fleet Maintenance, Gas Technicians, Heavy Equipment Operators, Lineworkers, Machine Mechanics, Meter Installers/Technicians, Pipe-fitters, Plant Operators, Utility Locators, Utility Service Specialists, Welders</p>	<p>Chemist, Designers/Technicians, Distribution and Transmission System Operators, Energy Efficiency Consultants, Energy Storage Specialists, Field Engineering, Geothermal Plant Technicians, Hydrogen Fuel Engineers, Instrumentation and Controls, Nuclear Engineers, Nuclear Plant Operators, Nuclear Technicians, Smart Grid Network Engineers, Solar Engineers</p>	<p>Accounting and Financial Analysts, And Specialized Attorneys, Communication Specialists, External Affairs and Policy, Financial Analysts, Marketing and Managers, Power Supply Manager, Power Systems Analysts, Project Management, Sales, Supply Chain</p>

# SKILLED TRADES

**The following competencies describe the skills and knowledge for postsecondary skilled trades pathways in the energy and natural resources sector.**

1. Demonstrate workplace safety including utilizing personal protective equipment as appropriate.
2. Discuss the basic employability skills needed for success in a skilled trades career and create a personal development plan and resume aligned with career goals.
3. Demonstrate basic communication skills, including reading, speaking, listening, and writing.
4. Apply mathematics knowledge to plan and carry out tasks.
5. Interpret construction-related drawings.
6. Identify, select, use, and maintain hand and power tools properly.
7. Utilize critical thinking strategies to collect, analyze, and interpret data to perform troubleshooting.
8. Identify and describe careers, job requirements, and training opportunities within the energy and natural resources sectors.
9. Demonstrate competency in a specific skilled trade.



# TECHNICAL

**The following competencies describe the skills and knowledge for postsecondary technical pathways in the energy and natural resources sectors.**

1. Demonstrate workplace safety including utilizing personal protective equipment as appropriate.
2. Discuss the basic employability skills needed for success in a technical career and create a personal development plan and resume aligned with career goals.
3. Utilize critical thinking strategies to collect, analyze, and interpret data to perform troubleshooting.
4. Design sustainable energy and natural resource systems using software and tools.
5. Perform scheduling, budgeting, and resource allocation activities.
6. Analyze activities and results to make recommendations for improvement.
7. Discuss career-relevant environmental, social, and governance principles.
8. Identify and describe careers, job requirements, and training opportunities within the energy and natural resources sectors.
9. Demonstrate competency in a technical field.



# BUSINESS

**The following competencies describe the skills and knowledge for postsecondary business pathways in the energy and natural resources sector.**

1. Define and demonstrate workplace safety.
2. Identify effective communication techniques for internal and external stakeholders.
3. Discuss the multidisciplinary skills like strategic and ethical decision-making, mathematics, data analysis, project management, and stakeholder engagement needed for career success.
4. Create a personal development plan and resume aligned with career goals.
5. Explain the ways in which environmental, social, governance principles impact strategic business planning.
6. Describe technological advancements and their impacts.
7. Recognize the operational dynamics of companies and the interdependencies among departments and business functions.
8. Identify and describe careers and job requirements within the energy and natural resources sectors.
9. Demonstrate competency in a business function.

