GENERAL OUTCOMES for:

Bachelor of Science in Technology Management

The Department of Technology offers three degrees, Technology Management, Applied Technical Leadership, and Information Technology to help meet the human resource needs of Maine’s business, industry, and government sectors. Courses are offered on-campus, off-campus at the Portsmouth Naval Shipyard, and on-line. This report describes the Technology Management degree program which is seeking re-accreditation. Some data represents a combination of the Technology Management and Applied Technical Leadership degrees because there is a significant overlap of course requirements and some is for the Department as a whole because to a great extent the same resources are used and cannot be clearly separated by program.

The mission:

The Department of Technology is committed to:

- Offering high quality undergraduate and continuing education programs in the area of Technology Management and Applied Technical Leadership.
- Preparing competent graduates for citizenship, employment, and further education.
- Maintaining an awareness of the state of the discipline, the economy, and the needs of students and employers.
- Maintaining state-of-the art technology, contemporary equipment, and safe facilities that effectively meet the teaching, service, and research needs of the department.
- Delivering programs, courses, and services to both on-campus and off-campus communities.
- Providing services to meet research, development, and technology transfer needs of Maine business and industry.
- Creating an atmosphere that continually strives to promote the personal and professional development of the department’s students, staff, and faculty.
- Supporting applied research and creative activities by faculty and students that advance the discipline, solve real-world problems, and promote a climate of inquiry.
- General outcomes shall be established for each program/option that provide a framework for the development of specific measurable competencies.
General outcomes and competencies:

1. Communications:

   Outcome: A graduate will have an understanding of and the skills to effectively communicate verbally, in writing, and graphically.

   Competencies:

   1.1. Be skilled in written communications, including basic writing skills, and the design and preparation of a variety of document types.

   1.2. Be skilled in verbal communication, including interpersonal communications, and active listening, presentation preparation and delivery.

   1.3. Understand and have skill in the use of electronic-based communications, including e-mail, management information systems, and digital media generation and presentation.

   1.4. Understand and have skill in group communications, including conference planning and team processes.

2. Quantitative methods:

   A graduate will understand and be able to use and apply principles of mathematics and at statistics, algebra, pre-calculus, and applied calculus level.

   Competencies:

   2.1. Understand and be able to apply mathematics at an algebra, pre-calculus, and applied calculus level.

   2.2. Understand and be able to use statistics related to the industrial applications.

   2.3. Have skill in the use of computer applications that support quantitative analysis and data presentation.

3. Scientific principles and methods:

   A graduate will understand and have the skills necessary to use and apply scientific methodology and analytic techniques related to their major and concentration.
Competencies:

3.1. Understand the nature of science and scientific inquiry.

3.2. Understand and be able to use principles of the physical sciences

4. Business and economics:

A graduate will understand business and economic principles that apply to organizations in today’s global economy.

Competencies:

4.1. Understand how economies operate at the macro and/or micro levels.

4.2. Understand how economic policy impacts operations.

4.3. Understand how financial resources are estimated, tracked, monitored, and controlled via appropriate accounting systems and how the allocation of financial resources impact operations.

4.4. Be able to analyze and control costs associated with operations.

5. Management and supervision:

A graduate will understand modern management and supervisory principles and practices, be able to effectively function in teams, and be an effective leader and manager.

Competencies:

5.1. Understand and effectively work in groups and teams.

5.2. Understand and use appropriate leadership/supervision styles and techniques in various forms of industrial organization.

5.3. Analyze contemporary industrial systems and use appropriate strategies to improve the quality of the working environment.

5.4. Understand and use the strategies and tools to effectively layout/organize facilities, and manage the flow/handling of materials.

5.5. Understand and be able to apply contemporary techniques and tools of project management.
5.6. Understand the structure and use of management information systems as applied to operations.

5.7. Understand and be able to apply human resource management functions integral to management within an organization.

5.8. CM - Understand business entities, sole proprietorships, partnerships and joint ventures, corporations and LLC.

6. Safety and health:

A graduate will understand the ethical, legal, and technical aspects of creating and maintaining a healthy and safe environment, including regulatory requirements.

Competencies:

6.1. Understand the safety, health, and ergonomic factors that constitute a safe and a healthy and productive environment.

6.2. Understand laws and regulations, which govern safety and health of employers and the workplace.

7. Professional and personal development and responsibility:

A graduate will have a strong educational foundation that prepares them to be a world-minded, intentional, life-long learner and practitioner; including a liberal arts foundation anchored in the humanities, arts, and sciences consistent with the educational mission and purpose of the university, their personal role and responsibilities as an individual, and will perform at an ethical professional level while completing their responsibilities.

Competencies:

7.1. A graduate should possess a liberal arts foundation anchored in the humanities, arts, and sciences consistent with the educational mission and purpose of the university.

7.1.1. Be intelligent readers of their own culture, and be able to use analysis and historical context to interpret information in various media.

7.1.2. Able to appreciate alternate ways of knowing such as those that arise from the arts, humanities, and social sciences.
7.1.3. Have the critical and creative abilities to solve complex, open-ended problems having social and political constraints.

7.1.4. Know how to learn and be a self-directed learner.

7.2. A graduate should possess a level of understanding, skill, and attitude relating to the role, function, and responsibility of individuals and organizations within the context of a global community.

7.2.1. Possess an understanding of international trade and be able to identify the leading trading partners of the United States and the primary products that they exchange.

7.2.2. Have an understanding of multinational corporations and international management strategies.

7.2.3. Understand how cultural differences and their impact on work environments and the production, marketing, and distribution of products and services.

7.2.4. Be aware of the world’s complexities beyond their own set of experiences and assumptions.

7.3. A graduate should possess a level of understanding and attitude regarding the ethical, social, and legal responsibilities of organizations and individuals.

7.3.1. Have an appreciation for other people’s values and customs.

7.3.2. Think effectively about ethical and social issues.

7.3.3. Chose to act ethically in their personal, interpersonal, and professional roles.

7.4. A graduate should perform at a professional level while completing their responsibilities. 7.4.1. Accept responsibility for their actions.

7.4.2. Prepare adequately and complete tasks on time.

7.4.3. Do high quality work.

7.4.4. Present themselves and their work in a professional manner. 7.4.5. Be aware of and adhere to organizational policies.

7.4.6. Communicate and cooperate effectively with others.

7.4.7. Demonstrate appropriate interpersonal relations.
8. Technological principles and systems:

A graduate will have an understanding of the technology and operation of technical systems related to their technical / occupational concentration.

Competencies:

8.1. Understand aspects of product, project, or service life cycles, including design, testing, development, production/construction, distribution, operation, maintenance, recycling and disposal. This competence includes an understanding of the relationship and interdependence of the components.

8.2. Understand technical systems that are part of contemporary production, construction, or service operations.

8.2.1. Understand the processes, resources, and methods related to the development, production/construction, and distribution of products and services.

8.2.2. Understand and have skill in the application and use of equipment and materials related to the development, production/construction, and distribution of products and services.

8.2.3. Understand contemporary strategies used to improve and maintain efficient, effective, and accurate design, planning, production/construction, distribution, maintenance, and service systems.

8.3. Understand and possess skills relating to the application and use of computer systems and components.

8.3.1. Have skill in the use computer hardware, software, and related systems used by contemporary production, construction, and/or service organizations.

8.3.2. Be familiar with current information and computer technologies as they apply to design, planning, management, communications, control, maintenance, production, construction, and/or service activities.

9. Careers and best practices

A graduate will be able to identify careers and best practices in developing and/or delivering information on technological artifacts and processes and apply them in a context of their interrelationships, responsibilities, and demands as technology professionals.
10. Creativity

A graduate will be able to develop and explore methods for approaching a problem or a challenge in an imaginative and innovative way. Innovation is the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies, or ideas.