



# Digital Product Design Program Standard

The approved program standard for Digital Product Design programs of instruction leading to an Ontario College Graduate Certificate delivered by Ontario Colleges of Applied Arts and Technology (MTCU funding code 71902).

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# Introduction

This document is the Program Standard for the Digital Product Design programs of instruction leading to an Ontario College Graduate Certificate delivered by Ontario Colleges of Applied Arts and Technology (MTCU funding code 71902).

## Development of system-wide program standards

In 1993, the Government of Ontario initiated program standards development with the objectives of bringing a greater degree of consistency to college programming offered across the province, broadening the focus of college programs to ensure graduates have the skills to be flexible and to continue to learn and adapt, and providing public accountability for the quality and relevance of college programs.

The Program Standards Unit of the Ministry of Colleges and Universities has responsibility for the development, review and approval of system-wide standards for programs of instruction at Ontario Colleges of Applied Arts and Technology.

## Program standards

Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following element:

- [Vocational standard](#) (the vocationally specific learning outcomes which apply to the program of instruction in question);
- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program.

Individual Colleges of Applied Arts and Technology offering the program of instruction determine the specific program structure, delivery methods and other curriculum matters to be used in assisting students to achieve the outcomes articulated in the

standard. Individual colleges also determine whether additional local learning outcomes will be required to reflect specific local needs and/or interests.

The expression of program standards as vocational learning outcomes

Vocational learning outcomes represent culminating demonstrations of learning and achievement. They are not simply a listing of discrete skills, nor broad statements of knowledge and comprehension. In addition, vocational learning outcomes are interrelated and cannot be viewed in isolation from one another. As such, they should be viewed as a comprehensive whole. They describe performances that demonstrate that significant integrated learning by graduates of the program has been achieved and verified.

Expressing standards as vocational learning outcomes ensures consistency in the outcomes for program graduates, while leaving to the discretion of individual colleges, curriculum matters such as the specific program structure and delivery methods.

## **The presentation of the vocational learning outcomes**

The **vocational learning outcome** statements set out the culminating demonstration of learning and achievement that the student must reliably demonstrate before graduation.

The **elements of the performance** for each outcome define and clarify the level and quality of performance necessary to meet the requirements of the vocational learning outcome. However, it is the performance of the vocational learning outcome itself on which students are evaluated. The elements of performance are indicators of the means by which the student may proceed to satisfactory performance of the vocational learning outcome. The elements of performance do not stand alone but rather in reference to the vocational learning outcome of which they form a part.

## **The development of a program standard**

In establishing the standards development initiative, the Government determined that all postsecondary programs of instruction should include vocational skills coupled with a broader set of essential skills. This combination is considered critical to ensuring that

college graduates have the skills required to be successful both upon graduation from the college program and throughout their working and personal lives.

A program standard is developed through a broad consultation process involving a range of stakeholders with a direct interest in the program area, including employers, professional associations, universities, secondary schools and program graduates working in the field, in addition to students, faculty and administrators at the colleges themselves. It represents a consensus of participating stakeholders on the essential learning that all program graduates should have achieved.

## **Updating the program standard**

The Ministry of Colleges and Universities will undertake regular reviews of the vocational learning outcomes for this program to ensure that the Digital Product Design Program Standard remains appropriate and relevant to the needs of students and employers across the Province of Ontario. To confirm that this document is the most up-to-date release, please contact the Ministry of Colleges and Universities:

[psu@ontario.ca](mailto:psu@ontario.ca)

# Vocational standard

All graduates of Digital Product Design programs have achieved the [seven vocational learning outcomes \(VLOs\)](#) in the following pages.

## Preamble

Increasingly, individuals and organizations look to digital solutions to optimize workflow, establish a presence in global markets, and improve communication. This pervasive integration of digital systems and their related applications has led to an emergence of job opportunities in the creation, integration, and support of digital systems and their infrastructures. The program standard for the Digital Product Design program that is offered at the colleges of applied arts and technology includes a foundation of vocational learning outcomes and their elements of performance. Graduates, as entry-level workers, have the knowledge, skills, and attitudes that are necessary for digital product\* design.

Graduates are functioning within their individual competencies corresponding to their educational preparations and learned skills. They have a strong foundation in relevant principles and theory and have applied their knowledge to practical challenges within digital product\* design. Upon successful completion of the program, graduates will receive an Ontario College Graduate Certificate. Ontario colleges of applied arts and technology offer the Digital Product Design program that prepares graduates for both existing and emerging opportunities in our society. At the heart of the digital education provided to Ontario college students is the ability to think critically, solve problems, and acquire new skills quickly. While these abilities are practised and enhanced in the context of a particular expertise, they are also transportable, with a reasonable training period, to other areas of expertise involving digital systems and their associated applications.

Graduates of the Digital Product Design program have acquired the knowledge and practical experience to support the continued extension of the application and ubiquitous nature of digital technology into our daily lives. As such, graduates are able to design digital human-centred experiences that engage users and respond to their needs. Graduates can undertake a **digital product\*** design assignment from concept to development through research, design, strategy, prototyping and testing **user**

**experiences\***. Working collaboratively in **digital product\*** design teams, graduates function creatively and professionally within a rapidly changing workplace following industry standards and best practices.

Graduates are employed in many areas including in-house design departments; interaction design agencies; service design agencies; marketing and corporate communications departments; strategy firms; experience design agencies; and software design firms. Graduates may also work as self-employed consultants.

While the vocational learning outcomes for programs, such as Digital Product Design, articulate the depth and breadth of skills, knowledge, and attitudes required by graduates when entering the work force, individual college programs may choose to build on this standard by offering some degree of specialization. Irrespective of the specialization, graduates' learning is significantly enhanced by opportunities for as much practical experience as is feasible during their time in the program.

There are many opportunities for graduates to pursue further educational qualifications. Graduates may be granted credits towards another program or degree or certificate, either through articulation agreements between the colleges and universities or by direct credit transfer. Students should contact individual colleges for further details of a college's articulation agreements or credit transfer possibilities.

To be successful in the digital environment requires an ongoing commitment from the graduate to continue to update their skills to stay current in this rapidly changing field. Making use of knowledge and experience gained during their studies, graduates may also choose to apply for professional designations from provincial, national, and international organizations as a further demonstration of their commitment to keep their skills current.

[\\*See Glossary](#)

Note: The [Ontario Council on Articulation and Transfer](#) (ONCAT) maintains the provincial postsecondary credit transfer portal, [ONTransfer](#).



## Synopsis of the vocational learning outcomes

### Digital Product Design (Ontario College Graduate Certificate)

The graduate has reliably demonstrated the ability to:

1. Apply **holistic\***, **user-centred\*** design approaches to analyze and document **client\*** needs.
2. Apply **design research\*** methods to build an empirical and analytical knowledge base to inform a **digital product\*** design solution.
3. Use **business thinking\*** to design a **digital product\*** that aligns with business strategies and **clients' value propositions\***.
4. Use **data analytics\*** from user interaction preferences to inform the design of meaningful **user experiences\*** for successful **digital products\***.
5. Vet **sustainable\* digital product\*** design solutions to create a better **user experience\*** based on an analysis of users' requirements of **digital products\***.
6. Design effective and engaging **digital product\*** interfaces for optimal **user experiences\***.
7. Collaborate effectively with peers to resolve **real-world\*** challenges within the design industry.

[\\*See Glossary](#)

Note: The learning outcomes have been numbered as a point of reference; numbering does not imply prioritization, sequencing, nor weighting of significance.

## The vocational learning outcomes

1. The graduate has reliably demonstrated the ability to: apply **holistic\***, **user-centred\*** design approaches to analyze and document **client\*** needs.

### Elements of the performance

- a. Employ a **holistic design\*** approach that involves research, planning, and prototyping\* of a **digital product\*** based on **client\*** needs.
- b. Apply principles of human **user-centred\*** interaction to the design of **digital products\*** based on **client\*** needs.
- c. Evaluate **emerging technologies\*** for the design of **digital products\*** based on **client\*** needs.
- d. Analyze **systems thinking methodologies\*** for the design of **digital products\*** that meet **client\*** needs.
- e. Analyze and document the social, economic and environmental implications of the design.

[\\*See Glossary](#)

2. The graduate has reliably demonstrated the ability to: apply **design research**\* methods to build an empirical and analytical knowledge base to inform a **digital product**\* design solution.

### **Elements of the performance**

- a. Incorporate **user-centred**\* research methodologies including both quantitative and qualitative to build an empirical and analytical knowledge base.
- b. Assess how **human factors**\* influence approaches for design solutions and **digital products**\*.
- c. Analyze **design research**\* requirements to develop appropriate methodologies.
- d. Apply **design research**\* findings to inform **digital product**\* solutions.
- e. Produce ethical research that demonstrates a critical and theoretical awareness of design concepts that inform **digital product**\* design solutions.
- f. Apply the results of research related to the societal impact of digital devices to **digital product**\* design based on **client**\* needs.
- g. Incorporate **design research**\* methods to develop and evaluate design problems and solutions.

[\\*See Glossary](#)

3. The graduate has reliably demonstrated the ability to: use **business thinking\*** to design a **digital product\*** that aligns with business strategies and **clients'\*** **value propositions\***.

#### **Elements of the performance**

- a. Utilize **strategy frameworks\*** in the design of **digital products\*** to ensure **client\*** needs are met.
- b. Apply **business thinking\*** strategies to the design of **digital products\***.
- c. Devise a **digital product\*** design based on business requirements.
- d. Create a **digital product\*** design that incorporates a **value proposition\*** based on **client\*** needs.
- e. Apply business model approaches to inform the design of **digital products\***.

[\\*See Glossary](#)

4. The graduate has reliably demonstrated the ability to: use **data analytics**\* from user interaction preferences to inform the design of meaningful **user experiences**\* for successful **digital products**\*.

#### **Elements of the performance**

- a. Interpret **data analytics**\* to inform the design of engaging **user experiences**\* of **digital products**\*.
- b. Apply data analysis findings in the design of engaging **user experiences**\* of **digital products**.
- c. Formulate the criteria for assessing user satisfaction when testing a **digital product**\* design solution.
- d. Evaluate user satisfaction of **digital product**\* solutions based on the utility of the **user experience**\*.

[\\*See Glossary](#)

5. The graduate has reliably demonstrated the ability to: vet **sustainable\* digital product\*** design solutions to create a better **user experience\*** based on an analysis of users' requirements of digital projects\*.

### **Elements of the performance**

- a. Employ design thinking and **user-centred\*** practices to guide the design of **digital products\***.
- b. Evaluate **personas\*** and **user scenarios\*** to aid in the planning of design approaches.
- c. Utilize **strategy frameworks\*** in the design of **digital products\*** to ensure sustainable\* value for the user.
- d. Design a solution that considers the longevity of **digital products\***.

[\\*See Glossary](#)

6. The graduate has reliably demonstrated the ability to: design effective and engaging **digital product\*** interfaces for optimal **user experiences\***.

### **Elements of the performance**

- a. Apply prototyping\* methods to appraise **digital product\*** interface approaches.
- b. Apply responsive and **iterative approaches\*** to refine **digital product\*** interface designs.
- c. Design engaging **digital product\*** interfaces based on the project's **design research\*** and **strategic objectives\***.
- d. Create optimal **user experiences\*** based on the project's **design research\*** and **strategic objectives\***.
- e. Design **accessible interfaces\*** for inclusive **user experiences\*** based on the project's **design research\*** and **strategic objectives\***.
- f. Create a test plan to appraise **digital product\*** interface approaches.

[\\*See Glossary](#)

7. The graduate has reliably demonstrated the ability to: collaborate effectively with peers to resolve **real-world\*** challenges within the design industry.

### **Elements of the performance**

- a. Collaborate with team members for the design of **digital products\***.
- b. Exhibit professional attitudes and behaviours within a **real-world\***, design industry context.
- c. Create **digital product\*** design solutions that are effectively integrated within a **real-world\***, design industry context.
- d. Execute **digital product\*** design workflows that are collaborative and dynamic within a **real-world\***, design industry context.
- e. Communicate with **stakeholders\***, e.g. **clients\***, supervisors, coworkers, and others, involved in **digital product\*** design projects, accurately, ethically, and in a timely fashion.

[\\*See Glossary](#)



# Glossary

**Accessible user interfaces:** Accessibility user interfaces that are perceivable, operable, and understandable for people with a wide range of abilities.

**Business thinking:** A mindset that goes beyond management by considering value and strategy leading to successful results.

**Client:** The user, person, or organization with the motivation and means to employ or engage with a product or service.

**Data analytics:** The science of analyzing raw data in order to make conclusions about that information.

**Design research:** A variety of qualitative and quantitative methods to expose patterns underlying the rich reality of people's behaviours and experiences, to explore reactions to probes and prototypes, and to shed light on the unknown through iterative hypothesis.

**Digital product:** Intangible good that exist in a digital form.

**Emerging technologies:** Technologies that are not yet standard but that are likely to be adopted in the near term. The expectation is that an emerging technology will come into standard usage when the application of the technology matures.

**Holistic design:** A design approach that goes beyond problem solving by considering all aspects of a product's ecosystem.

**Human factors:** The understanding of interactions among humans and other elements of a system.

**Iterative approaches:** A process of designing a product in which the product is tested and evaluated repeatedly at different stages of design to eliminate usability flaws before the product is designed and launched.

**Persona:** Developed by designers to reflect the attributes of different user types in the context of the design project.

**Real-world:** Connecting what is taught in school to issues and problems that arise in an industry context.

**Strategic objectives:** Long-term organizational goals that help to convert a mission statement from a broad vision into more specific plans and projects.

**Strategy frameworks:** A structured method used to define how a project or initiative supports the key objectives of stakeholders.

**Stakeholders:** Clients, supervisors, coworkers and organizations that have a vested interest in the project.

**Systems thinking methodologies:** Identification of inter-relationships, perspectives, and boundaries related to the client's topic area to inform the design of digital products.

**User experience:** A meaningful and relevant human interaction with a digital product.

**User scenarios:** A tool that focuses on a user's motivations, and documents the process by which the user might use a design concept.

**User-centred:** A design process in which designers focus on the users and their needs in each phase of the design process.

**Value proposition:** The promise of value to be delivered, experienced, and acquired from a product or service.

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