



Additional Qualification Course Guideline Computer Studies, Part II

Schedule D – Teachers' Qualifications Regulation

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Preface

Placing each student's interests and well-being first is at the core of teaching in Ontario.

The Ontario College of Teachers (the College) is the self-regulating body for the teaching profession in Ontario and is responsible for:

- establishing and enforcing professional standards and ethical standards applicable to members of the College
- providing for the ongoing education of members of the College
- accrediting Additional Qualification (AQ) courses.

The College supports teaching excellence by preparing educators to work in varied and diverse educational contexts and geographical settings:

- English language public school
- French language public school
- English language Catholic school
- French language Catholic school
- First Nations school
- Provincial and Demonstration school
- Private school
- Independent school
- Urban setting
- Rural setting
- Remote setting

Additional Qualification (AQ) course guidelines are designed following extensive consultation and feedback from course providers, course writers and members of the teaching profession.

AQ course guidelines serve as the framework for providers and instructors to develop courses.

In this document, all references to candidates are to educators enrolled in the AQ course. References to learners indicate those enrolled in school programs.

Introduction

Additional Qualifications (AQs) for educators are identified in O. Reg. 176/10: *Teachers' Qualifications Regulation*. This regulation includes courses that lead to AQs, the Principal's Development Qualification, the Principal's Qualifications, the Primary Division, the Junior Division, the Intermediate Division, the Senior Division, the Supervisory Officer's Development Qualification and the Supervisory Officer's Qualifications. A session of a course leading to an AQ shall consist of a minimum of 125 hours as approved by the Registrar. Successful completion of the course is recorded on the candidate's Certificate of Qualification and Registration.

This AQ course guideline provides a framework upon which to develop courses that meet accreditation requirements established in O. Reg. 347/02: *Accreditation of Teacher Education Programs*.

Accreditation – Program of Additional Qualification

Accreditation requirements for AQ courses are articulated in O. Reg. 347/02: *Accreditation of Teacher Education Programs*, s. 24.

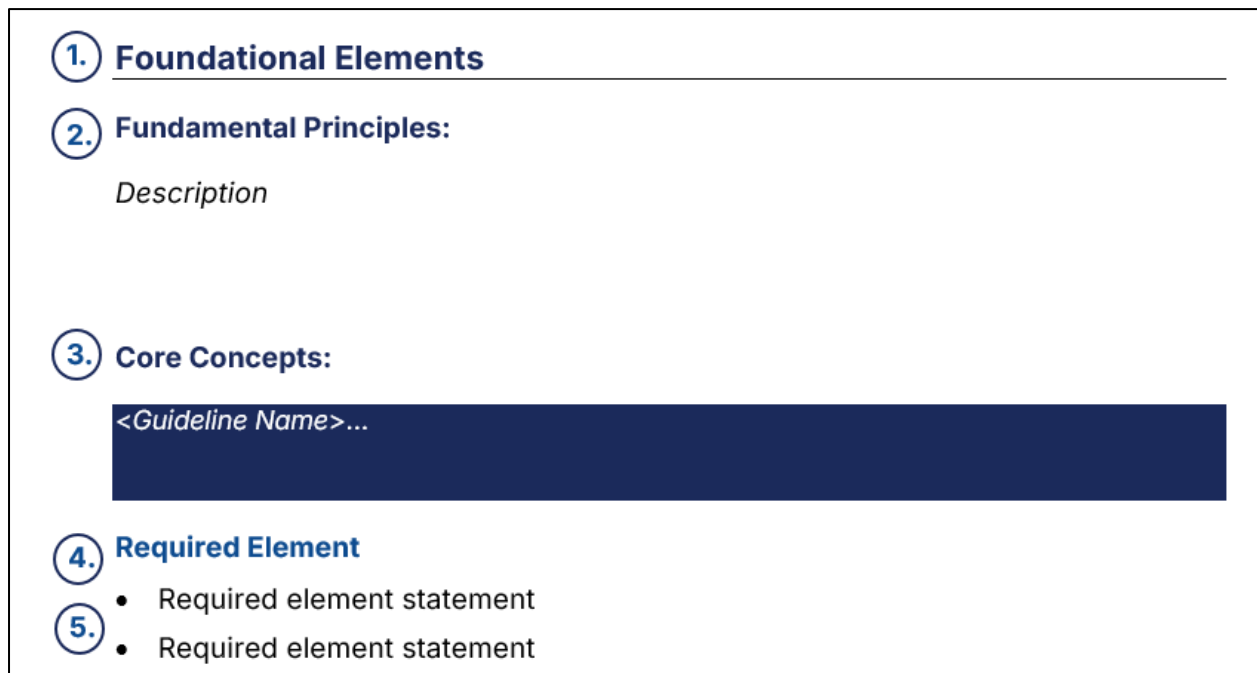
A program of additional qualification may be granted accreditation under this Regulation if the following requirements are satisfied:

1. The program content and expected achievement of persons enrolled in the program match the skills and knowledge reflected in the College's "Standards of Practice for the Teaching Profession" and the "Ethical Standards for the Teaching Profession" and in the program guidelines issued by the College.
2. The program satisfies the requirements of the teachers' qualifications regulation for entry of an additional qualification on the general certificate of qualification and registration of a person who successfully completes the program.
3. The program curriculum is current, references the Ontario curriculum, relevant legislation and government policies and represents a wide knowledge base in the program's area of study.
4. The course content of the program makes appropriate provision for the application of theory in practice.
5. The program's format and structure are appropriate for the course content of the program.
- 5.1 The program consists of a minimum of 125 hours of work acceptable to the Registrar.
6. There is clear identification of the goals of the program, with a formal testing or assessment mechanism to determine the level of successful completion of the program.
7. The majority of the educators teaching the program have Ontario teaching experience relevant to the program.
8. The provider maintains adequate internal controls to preserve the integrity of student records relating to the program.
9. The provider is committed to continuous improvement and quality assurance of the program and, if the program is an existing program, has implemented measures demonstrating that commitment.
O. Reg. 347/02, s. 24; 2009, c. 33, Sched. 13, s. 3 (2); O. Reg. 182/10, s. 8.

Overview: Additional Qualification Course Guideline Design

The following section of AQ course guidelines are organized using the structure and content described below (Figure 1):

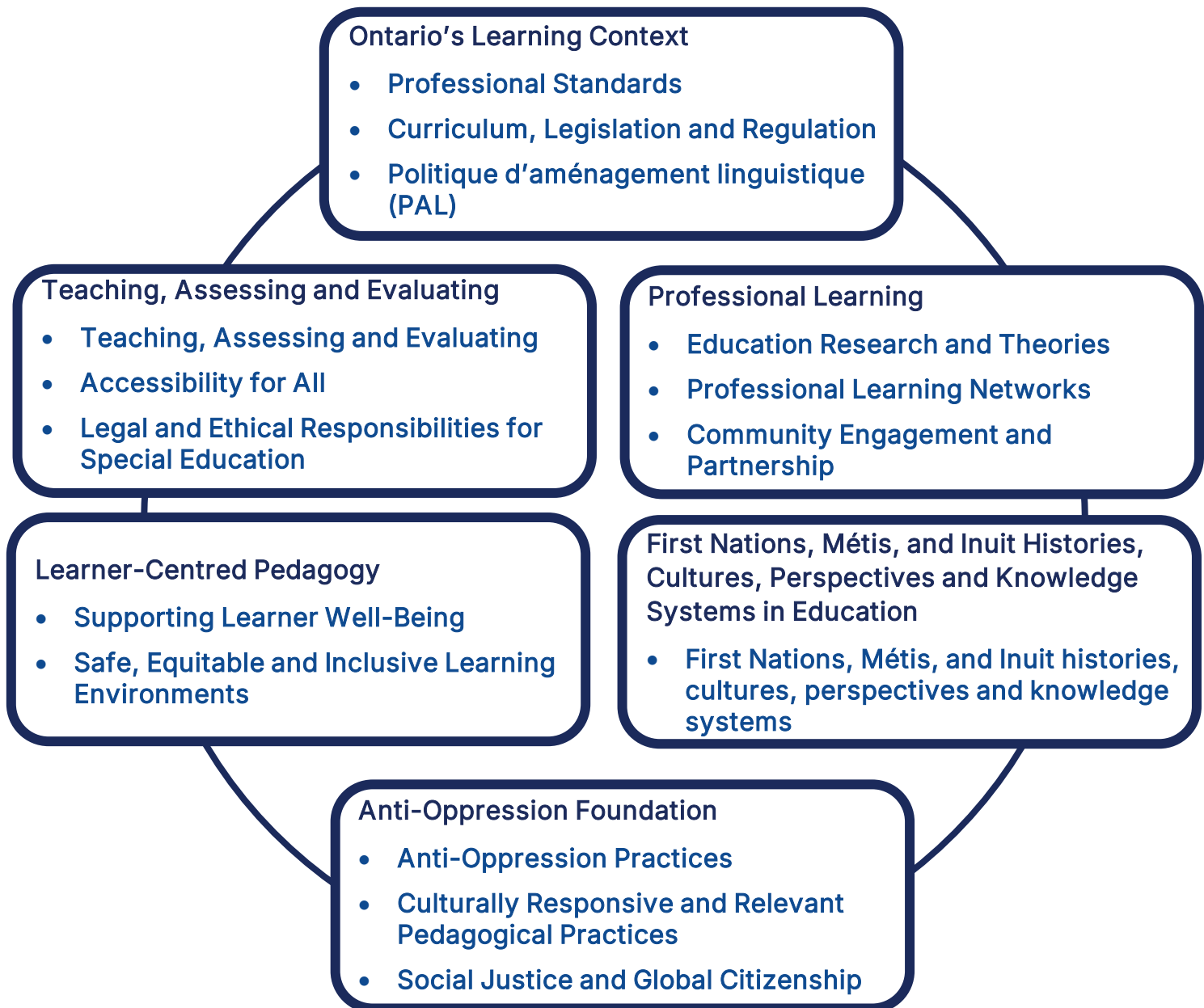
1. **Foundational elements** – six overarching distinct but interconnected elements grounding AQ course guidelines
2. **Fundamental principles** – accreditation requirements that are infused throughout the content of the AQ course and serve to inform providers and instructors of the conceptual framework from which to design AQ courses
3. **Core concepts** – candidates' professional experience and learning needs in relation to the required elements of the AQ course
4. **Required elements** – subject and/or division specific knowledge, skills, practices and values that AQ course providers must infuse throughout the content of the AQ course
5. **Required element statements** – description of the professional knowledge, skills, practices and values related to the required element.



Additional Qualification Course Guideline Foundations

AQ course guidelines are grounded in **six foundational elements**, which are distinct but interconnected.

There are 15 required elements in English-language AQ course guidelines and 16 required elements in French-language AQ course guidelines:



Computer Studies, Part II

Additional Qualification – Schedule D, Part I/Part II/Specialist (Three Session)

Schedule D (see Appendix 1), three-session specialist Additional Qualification courses, allow educators to:

- enhance subject-specific professional practice, knowledge and skills as outlined in the Computer Studies, Part I course
- extend subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities as outlined in the *Computer Studies, Part II* course
- apply the subject-specific professional practice, knowledge and skills in a leadership role as outlined in the Computer Studies, *Specialist* course.

Additional Qualification Course Requirements

The AQ course *Computer Studies, Part II* enables candidates to advance their professional practice through focussed learning in the following areas:

- Curriculum Knowledge
- Pedagogical Strategies
- The Learning Environment.

This AQ course is designed and delivered using adult learning instructional practices.

The AQ Course *Computer Studies, Part II* reflects **adult learning theories and processes** that foster critical reflection, dialogue and inquiry. Instructors provide candidates with professional learning experiences related to teaching, learning and assessment of learners.

The purpose of this AQ is to support educators in the development of professional knowledge, skills and practices related to the teaching of computer studies. The course enables educators to explore computer studies through an anti-oppression foundation that honours learner identities. Educators will explore computational thinking concepts and practices and apply pedagogies that promote learner skills and curiosities in an inclusive environment.

Ontario's Learning Context

Fundamental Principles:

Education in Ontario is complex and dynamic with learning communities that reflect the province's diversity. As the teaching profession continually evolves to meet the ever-changing needs of learners, educators are called upon to follow foundational principles that inform instructional practice.

Professional standards, the Ontario curriculum, and related legislation and regulation, including the *Ontario Human Rights Code*, the *Education Act* and *Aménagement Linguistique Policy* (for French-Language schools) serve as the foundation for equitable, inclusive and accessible education.

Through ongoing professional learning, educators deepen their understanding of these principles, thereby advancing their professional practice to support each student's learning and well-being.

Core Concepts:

Computer Studies, Part II extends subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities through explicit instruction, reflections, guiding questions or resources in the following required elements:

Professional Standards

- significance of the Ethical Standards, Standards of Practice and Professional Advisories as theoretical foundations within *Computer Studies*
- ethical professional identity, knowledge, leadership, advocacy and collective practices to inform program planning
- awareness of the ethical responsibilities of computer studies educators (for example, protecting data and privacy, and ongoing learning about Information and Communication Technologies [ICTs]).

Ontario curriculum and related Legislation and Regulation

- current Ontario curriculum, policies, frameworks, strategies and resources related to computer studies, including opportunities for cross-curricular and cross-panel connections
- relevant legislation and policies at the municipal, provincial, federal and international levels that support human rights and privacy for all (for example, *Canadian Charter of Rights and Freedoms*, *Canadian Human Rights Act*, *Ontario Human Rights Code*, *Anti-Racism Act, 2017*, S.O. 2017, c. 15 and *Freedom of Information and Protection of Privacy Act*)

- candidates' legal obligations and ethical responsibilities according to current provincial legislation, policies and practices
- legal and ethical responsibilities related to health and safety legislation, regulations and policies in computer studies (for example, Occupational Health and Safety Act [OHSA] and Board policies)
- connections between computer studies and other disciplines including Science, Technology, Engineering, Arts and Mathematics (STEAM).

Professional Learning

Fundamental Principles:

Professional learning is an integral part of the teaching profession and is essential for fostering continuous growth and improving outcomes for Ontario learners.

Throughout their career, educators continue to engage in ongoing professional learning informed by educational research and theories, including sessions offered by school boards or community partners, professional reading and AQ courses.

AQ courses serve as a key tool for enhancing professional practice by preparing educators for specific roles within the educational community. As part of their professional learning, educators are called upon to participate and lead in Professional Learning Networks and Community Engagement and Partnership opportunities that foster knowledge sharing, collaboration, and innovation to respond to diverse learner needs and create inclusive learning environments.

Core Concepts:

Computer Studies, Part II extends subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities through explicit instruction, reflections, guiding questions or resources in the following required elements:

Educational Research and Theories

- current research and contributions representative of diverse voices and cultures associated with professional practices, policies and pedagogies related to computer studies
- research and theories that reflects society's diverse changing nature and influence on learning and well-being (for example, trauma-informed pedagogical practices and mental health resources)

- theoretical foundation for the design, assessment and implementation of programs and practices in support of learning (for example, computational thinking, project-based learning and design processes)
- application of theories of development and identity formation that support learner well-being, efficacy and agency
- research on emerging technologies that facilitate teaching and learning computer studies (for example, ethical and responsible use of Artificial Intelligence [AI] and coding).

Professional Learning Networks

- professional learning communities that promote critical pedagogy and collective efficacy
- research and leadership to advance professional practice through ongoing collaborative inquiry, dialogue and innovation
- internal and external collaboration and supports to enhance professional practices in computer studies, including cross-curricular teams, Board leads, mentors and subject associations (for example, Association for Computer Studies Educators [ACSE], Educational Computing Organization of Ontario [ECOO] and digital communities).

Community Engagement and Partnerships

- culturally responsive strategies to engage with learners, families, caregivers, guardians, Elders, Knowledge Keepers and Knowledge Guardians, agencies and the school community including:
 - processes and practices to foster communication and collaboration to support learning
 - partnerships that value shared decision-making, confidentiality, advocacy and leadership
 - empowerment to navigate the education system and support learning and well-being
- strategies to build community partnerships that promote reciprocal and authentic learning experiences (for example, computing competitions, field trips and cooperative education).

First Nations, Métis, and Inuit Histories, Cultures, Perspectives and Knowledge Systems in Education

Fundamental Principles:

Ontario's educators are responsible to uphold the *Truth and Reconciliation Commission of Canada: Calls to Action* and align their professional practice with the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP). They engage in authentic reconciliatory action by learning from and valuing First Nations, Métis, and Inuit histories, cultures, perspectives and knowledge systems, in teaching and learning. Educators, as treaty partners, acknowledge that learning about, and upholding treaty responsibilities will guide them on the reconciliation journey.

Core Concepts:

Computer Studies, Part II extends subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities through explicit instruction, reflections, guiding questions or resources in the following required elements:

First Nations, Métis, and Inuit Histories, Cultures, Perspectives and Knowledge Systems

- meaningful inclusion of First Nations, Métis, and Inuit histories, cultures, perspectives and knowledge systems in teaching and learning processes (for example, exploration of technologies designed to preserve and revitalize Indigenous languages)
- knowledge of the *Truth and Reconciliation Commission of Canada: Calls to Action* (TRC)
- awareness of *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP).

Anti-Oppression Foundation

Fundamental Principles:

An anti-oppression foundation acknowledges that systemic manifestations of power and privilege have led to multiple forms of oppression, injustices, inequities and inequalities. It is an approach that ensures equity and human rights are foundational to all AQ courses and programs.

Educators have a shared ethical and professional responsibility to identify and challenge individual and systemic barriers, including the impact of biases and assumptions related to power and privilege. Ongoing teacher education must recognize and address historical contexts that have contributed to various forms of oppression.

Through culturally responsive and relevant pedagogical practices, educators provide learning opportunities that respect diversity, foster learner well-being, and promote social justice and global citizenship.

Core Concepts:

Computer Studies, Part II extends subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities through explicit instruction, reflections, guiding questions or resources in the following required elements:

Anti-Oppression Practices

- theories and pedagogies about multiple forms of oppression applied to the design, assessment and implementation of programs and practices
- addressing individual and systemic biases, discrimination and barriers as well as manifestations of power and privilege (for example, exploring bias in emerging technologies such as Artificial Intelligence [AI])
- addressing disproportionate representation of learners from equity seeking groups within specialized programs
- opportunities to disrupt stereotypes by exploring diverse and global perspectives of individuals in the field of computer studies
- processes and strategies to address diversity gaps within computer studies.

Culturally Responsive and Relevant Pedagogical Practices

- culturally responsive and relevant practices that reflect understanding of learners' identities and intersectionalities
- strategies for exploring the difference between cultural appropriation and cultural appreciation
- culturally inclusive processes, practices and resources to provide learning opportunities that respect the learning styles, voices and perspectives of each learner
- practices that value learners' relationship and experiences with technology.

Social Justice and Global Citizenship

- processes and practices that foster learners' voice and choice, respect diversity and promote social and ecological justice
- strategies for consensus-building, participatory democracy and empowerment within schools and the community
- processes that engage learners as active global citizens in supporting environmental and economic sustainability (for example, managing e-waste and exploring the implications of technology and its ecological footprint)
- opportunities to analyze and address systemic inequities related to technological access (for example, advocacy for accountable government and institutional policies).

Learner-Centred Pedagogy

Fundamental Principles:

Learner-centred pedagogy prioritizes learner engagement, well-being and success. Educators support student learning and well-being by encouraging learner voice, choice, and collaboration with families, caregivers, guardians, Elders, Knowledge Keepers and Knowledge Guardians and community partners.

Educators create safe, equitable, and inclusive learning environments that value diverse identities, experiences, and learning needs to ensure that all learners are empowered to reach their learning goals.

Core Concepts:

Computer Studies, Part II extends subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities through explicit instruction, reflections, guiding questions or resources in the following required elements:

Supporting Learner Well-Being

- policies, processes and practices to support learners' cognitive, social, emotional, spiritual and physical development
- strategies that respond to the strengths, identities, needs and interests of each learner
- programs that respond to learners' lived experiences, linguistic abilities, mental health and well-being
- practices to understand learner's curiosities and experiences to empower them to reach their learning goals

- awareness of how algorithms can have a positive or negative impact on mental health
- practices and strategies to support healthy habits related to technology use (for example, self-regulation and wearable devices and related applications).

Safe, Equitable and Inclusive Learning Environments

- policies and processes to create and maintain inclusive learning environments that:
 - respect diversity
 - encourage critical thinking
 - foster learner agency and perspectives
- strategies to foster inclusive learning environments (for example, physical and virtual design and layout of the classroom, gender neutral language, resources in various formats and collaborative projects)
- practices that support safe and healthy learning environments for learners as well as families, caregivers, guardians, Elders, Knowledge Keepers and Knowledge Guardians
- ethical use of technology in support of learners' safety, privacy and well-being (for example, appropriate use of emerging technologies and modelling online etiquette).

Teaching, Assessing and Evaluating

Fundamental Principles:

Educators believe that each student can learn. Through evidence-based teaching and learning practices that are learner-centred, educators provide programs and services that offer equitable, inclusive and accessible opportunities for all.

Educators use instructional strategies and assessment practices that respect the identities of each learner and support their cognitive, social, emotional, spiritual and physical development.

Accessibility, inclusion and equity are fundamental to everyday practice for teaching and learning. Informed by the *Ontario Human Rights Code*, *Accessibility of Ontarians with Disabilities Act, 2005*, and the *Education Act*, educators advocate for each learner to access and benefit from services and resources within the education system, understanding the unique needs presented by geographical and socioeconomic contexts.

As educators are responsible for instruction, assessment and evaluation of all learners, they provide accommodations, modifications, or alternative programming outlined in the Individual Education Plan (IEP), which must be developed by an interdisciplinary team to reflect the learner's strengths, needs, and abilities, according to Reg. 181/98.

Each learner has their own unique profile and goals. As such, educators design opportunities that support their transition, education, and life and career planning.

Core Concepts:

Computer Studies, Part II extends subject-specific professional practice, knowledge and skills in the design and implementation of learning opportunities through explicit instruction, reflections, guiding questions or resources in the following required elements:

Teaching, Assessing and Evaluating

- program design and implementation aligned with the Ontario curriculum that foster transferable skills to support lifelong learning (for example, critical thinking, collaboration and innovation)
- instructional strategies and approaches (for example, differentiated instruction, universal learning design, experiential learning, outdoor learning and inquiry-based learning)
- assessment and evaluation processes and practices to:
 - provide feedback to learners and adjust instruction (assessment *for* learning)
 - develop learners' capacity to be independent, autonomous learners (assessment *as* learning)
 - make informed professional judgments about the quality of learning (assessment *of* learning)
- integration of information and communication technology to enhance teaching and learning, including considerations for new and emerging technologies
- program planning that integrates computational thinking, design process and experiential learning opportunities.

Accessibility for All

- ethical responsibilities related to the Ontario Human Rights Code and Accessibility for Ontarians with Disabilities Act S.O., 2005
- adaptive strategies, such as assistive technologies, accessible content and inclusive design to facilitate learning and foster inclusion
- strategies to address ableism that exists in processes and practices

- exploration of low-tech (for example, manipulatives) or mid-tech (for example, a calculator) supports before implementing high-tech supports (for example, assistive devices), using data and research to inform decisions when teaching computer studies.

Legal and Ethical Responsibilities related to Special Education

- legal and ethical responsibilities related to learner's Individual Education Plan (IEP), safety plan, and transition plan
- programs, strategies and services that support the learner in achieving individual goals outlined in their respective plans
- interdisciplinary teams to support learning, advocacy and transitions.

Transition and Pathway Planning

Transition Planning

- processes and practices to support all transitions from elementary to secondary and secondary to post-secondary, including college, apprenticeship, university, workplace and community living
- policies, programs and learning opportunities that value each pathway equally and equitably (for example, Specialist High Skills Major [SHSM], Ontario Youth Apprenticeship Program [OYAP], dual-credit programs and experiential learning).

Education, Life and Career Planning

- curriculum design to relate classroom learning to learners' career and life planning, including real-world applications
- exploration of a variety of entry points to all career pathways.

Resources

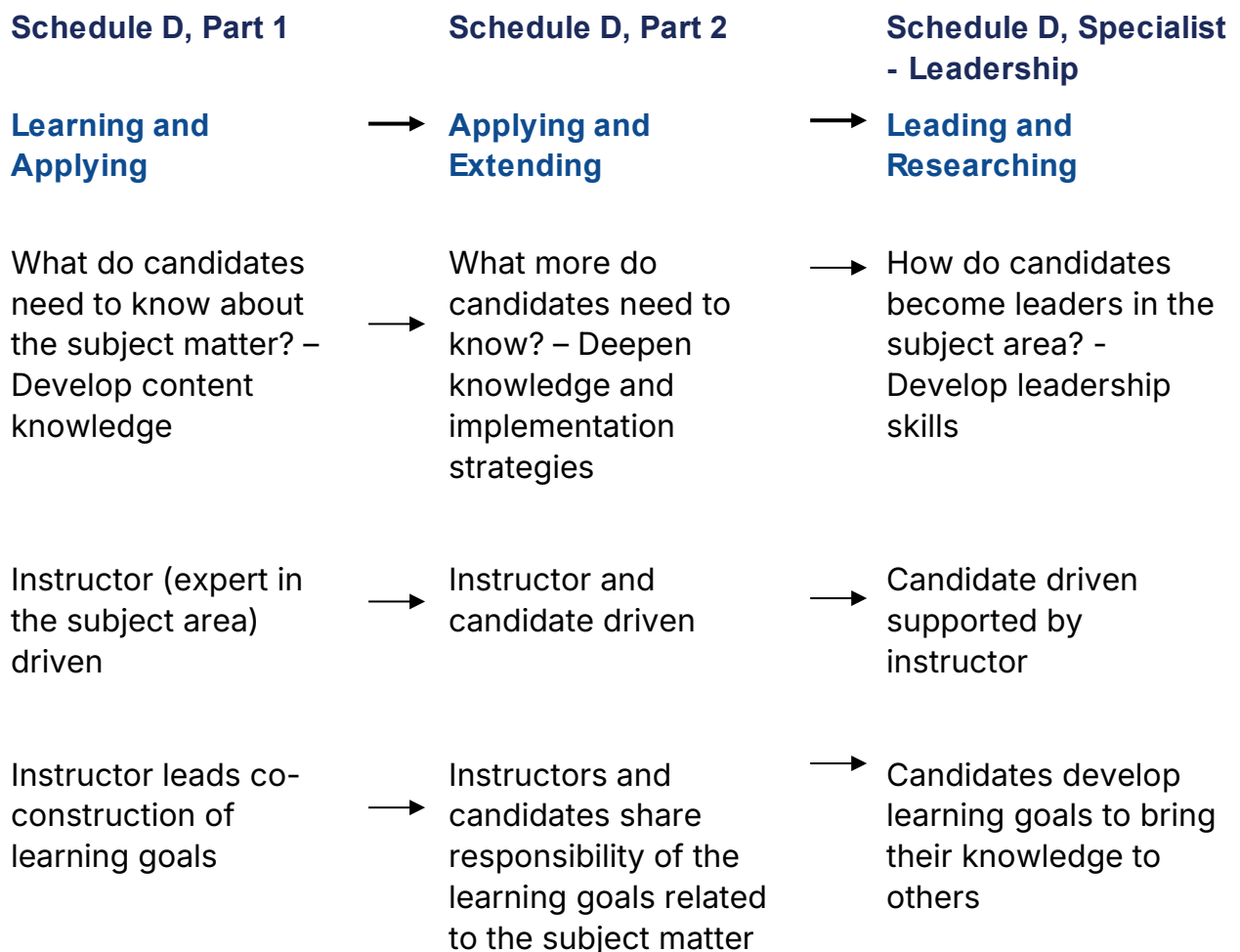
Resources to support the development of the AQ Course *Computer Studies, Part II* can be found on the [College](#) website and the [Ontario Ministry of Education](#) website.

Appendix 1

Continuum Of Learning in Schedule D Additional Qualification (AQ) Courses

Considerations

- Consistency across the three Schedule D sessions to:
 - support the development and progression of knowledge, implementation and leadership
 - support candidates who take the sessions from different providers
- Candidates' professional experience and learning needs in relation to the required elements of the AQ course.





Apply subject content research to the candidates' teaching context



Extend the application of subject content research to the teaching context of the candidate and beyond (for example, school, Board, community)



Apply leadership strategies and subject content research to lead instructional practice

Continuum of Learning in Schedule D Additional Qualification (AQ) Courses

Accessibility for Ontarians with Disabilities Act (AODA) Compliant Text:

Schedule D, Part 1

This is the first level on a three-level continuum as outlined in the columns above.

Learning and Applying

- What do candidates need to know about the subject matter? – Develop content knowledge
- Instructor (expert in the subject area) driven
- Instructor leads co-construction of learning goals
- Understand pertinent legislation and policies
- Apply curriculum and policies to candidates' teaching contexts
- Understand the learning context of subject matter (for example, examine Standards of Practice, parent/guardian and community engagement strategies, learner identity)
- Read research, theories and frameworks related to subject matter
- Apply subject content research to the candidates' teaching context.

Schedule D, Part 2

This is the second level on a three-level continuum as outlined in the columns above.

Applying and Extending

- What more do candidates need to know? – Deepen knowledge and implementation strategies
- Instructor and candidate driven
- Instructors and candidates share responsibility of the learning goals related to the subject matter
- Dig deeper/Investigate into pertinent legislation and policies
- Extend curriculum and policies to problems of practice in the field and implementation in professional learning communities

- Engage with the learning context of subject matter (for example, apply Standards of Practice, parent/guardian and community engagement strategies, learner identity)
- Expand scope of research, theories and frameworks related to subject matter (for example, candidates establish subject-specific research goals)
- Extend the application of subject content research
- to the teaching context of the candidate and beyond (for example, school, Board, community).

Schedule D, Specialist – Leadership

This is the third level on a three-level continuum as outlined in the columns above.

Leading and Researching

- How do candidates become leaders in the subject area? - Develop leadership skills
- Candidate driven supported by instructor,
- Candidates develop learning goals to bring their knowledge to others
- Analyze pertinent legislation and policies and measure impact at school and system level
- Lead change related to curriculum and policy implementation
- Lead innovation in teaching and learning in the learning context (for example, investigate Standards of Practice, parent/guardian and community engagement strategies, learner identity)
- Develop leadership strategies to further research, theories and frameworks related to subject matter
- Apply leadership strategies and subject content research to lead instructional practice.

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