Additional Qualification
Course Guideline
Computer Studies, Part I

Schedule D
Teachers’ Qualifications Regulation

July 2010

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Additional Qualification Course Guideline
Computer Studies, PART I

1. Introduction

Three-Session Specialist Additional Qualification courses identified in Schedule D (Teachers’ Qualifications Regulation) are intended to:

- enhance professional practice, and extend knowledge and skills in the delivery of computer studies programs (Part I)
- enhance professional practice, and extend and apply knowledge and skills in the design and delivery of computer studies programs (Part II)
- enhance professional practice, and extend and apply knowledge and skills in the curriculum leadership of computer studies programs (Specialist).

The Additional Qualification course: Computer Studies, Part I explores the theoretical foundations, the development of learners, program planning and implementation, assessment, the learning environment and ethical considerations related to teaching and learning in the intermediate and senior divisions.

Critical to the implementation of this course is the modeling of a positive learning environment that reflects care, professional knowledge, ethical practice, leadership and ongoing learning.

The course is open to candidates who meet the entry requirements identified in the Teachers’ Qualifications Regulation. To be successful in this course, candidates have a background in computer science or computer engineering gained from university, college, or professional experience. In particular, candidates bring a working knowledge of the various forms of programming (for example, procedural programming, object oriented programming) to this Additional Qualification course.

The Ontario College of Teachers recognizes that candidates working in the publicly funded school system, independent/private institutions or First Nations Schools will have a need to explore in an integrated delivery model, topics and issues of particular relevance to the context in which they work or may work.
2. Regulatory Context

The College is the self-regulating body for the teaching profession in Ontario. The College’s responsibility related to courses leading to additional qualifications includes the following:

- to establish and enforce professional standards and ethical standards applicable to members of the College
- to provide for the ongoing education of members of the College
- to accredit Additional Qualification courses or programs and more specifically,

  *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.* (Accreditation of Teacher Education Programs Regulation, Part IV, Subsection 24).

Additional qualifications for teachers are identified in the Teachers’ Qualifications Regulation, Teachers’ Qualifications. This regulation includes courses/programs that lead to Additional Qualifications, Additional Basic Qualifications, the Principal’s Qualifications and the Supervisory Officer’s Qualifications. A session of a course leading to an Additional Qualification shall consist of a minimum of 125 hours of work that is approved by the Registrar. Accredited Additional Qualification courses reflect the *Ethical Standards for the Teaching Profession*, the *Standards of Practice for the Teaching Profession* and the *Professional Learning Framework for the Teaching Profession*.

Successful completion of the course leading to the Additional Qualification: Computer Studies, Part I listed in Schedule D of the Teachers’ Qualifications Regulation, Teachers’ Qualifications, is recorded on the teacher’s Certificate of Qualification and Registration.

In this document, all references to “candidates” are to teachers enrolled in the Additional Qualification course. References to “students” indicate those enrolled in school programs.
3. The Ethical Standards and the Standards of Practice for the Teaching Profession

A commitment to a clear vision of what it means to be a teacher is at the core of teacher professionalism. The Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession (Appendix 1) provide the focus for ongoing professional learning and are the foundation for the development of the Additional Qualification Course: Computer Studies Part I. In addition, the Professional Learning Framework for the Teaching Profession is underpinned by the standards, articulates the principles on which effective teacher learning is based and acknowledges a range of options that promote continuous professional learning.

Standards Resources

The College has developed resources to support the effective integration of the standards within Additional Qualification courses and programs. These resources explore the integration of the standards through a variety of educative and inquiry-based processes. A list of these resources can be found in Appendix 2 and are available through the College web site (www.oct.ca). This guideline has been designed to reflect the Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession.

4. Course Components

The design, course content and implementation of the Additional Qualification Course Guideline: Computer Studies Part I support effective teacher education practices. The following course components of this guideline support and inform effective professional knowledge and practice within the Additional Qualification course: Computer Studies Part I.

The Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession are embedded within the overall expectations of this guideline.

This Additional Qualification course has the following overall learning expectations for candidates:

- understanding and interpreting Ontario Ministry of Education curriculum, policies and guidelines
• applying the theoretical understanding necessary to implement and assess programs and/or practices related to computer studies
• having awareness and integrating expectations, strategies and assessment practices in response to the individual needs of students, and the promotion of student success
• enhancing awareness of holistic learning environments (intellectual, social, emotional, physical, environmental, linguistic, cultural, spiritual and moral)
• exploring strategies for collaboration with in-school personnel, parents/guardians and the community to support computer studies teaching and learning
• becoming aware of a variety of appropriate resources, including technological and communication resources, to enhance professional knowledge in support of student learning
• exploring professional practice through ongoing inquiry, dialogue and reflection
• developing an awareness of ethical practices
• understanding the role of professional learning communities in enhancing professional knowledge and supporting student learning
• developing awareness of First Nations, Métis and Inuit (Aboriginal) ways of knowing and perspectives
• integrating environmentally respectful perspectives and practices
• creating and sustaining safe, healthy, equitable and inclusive learning environments that honour and respect diversity.

Candidates will explore and deepen their understanding of the following:

A. **Ontario Curriculum and School Policies**

The Additional Qualification Course: Computer Studies Part I is aligned with current Ontario curriculum, relevant legislation, government policies, and resources. These documents inform the development and implementation of the Additional Qualification course: Computer Studies Part I. These resources can be viewed at www.edu.gov.on.ca.
B. The *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession*

- understanding and embodying care, trust, respect and integrity
- demonstrating commitment to students and student learning
- integrating professional knowledge
- enriching and developing professional practice
- supporting leadership in learning communities
- engaging in ongoing professional learning.

C. Theoretical Foundations of Computer Studies Part I

- demonstrating an understanding of common computer hardware functions, file management techniques, operating system functions, and networking concepts
- planning language independent solutions by means of flow-charting, pseudo-code, UML diagrams or other techniques
- demonstrating an understanding of the variety of programming languages, paradigms, and environments
- developing programs that include variable types, repetition and selection structures, modularity, abstract data types, and that adhere to internal documentation standards for a variety of problems
- demonstrating an understanding of syntax, logic, and run-time errors
- understanding theories of child and adolescent development
- exploring a variety of conceptual frameworks in computer studies
- understanding Ontario curriculum and government policies relevant to the teaching and learning of computer studies
- reflecting on teaching practice and engaging in professional dialogue on the relationship of theory and practice in the teaching of computer studies
- exploring the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* as the foundation for teacher professionalism within the Additional Qualification course: Computer Studies Part I.
D. Program Planning, Development and Implementation

- exploring the creation of positive, equitable, accepting and safe learning communities
- developing an understanding of how the Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession can inform a program planning framework
- identifying factors in a diverse and changing society that impact on students learning
- connecting computer studies to students’ real life experiences
- having an awareness of curriculum planning, development, implementation strategies and frameworks related to computer studies
- having awareness of differentiated instruction and universal design in the planning, development and implementation of learning experiences in computer studies
- identifying and accessing community, print, electronic and collegial resources related to computer studies
- demonstrating an awareness of ethical and social issues as they apply to computer studies
- demonstrating an awareness of environmental and health issues as they apply to the computer studies classroom and at home
- exploring various career paths and continuing education related to computer studies.

E. Instructional Strategies and the Learning Environment

- fostering a collaborative community of learners
- having awareness of appropriate information technology and communication technology to support student learning in computer studies
- understanding a variety of instructional strategies appropriate to the learner of computer studies
- understanding a variety of strategies for adapting, modifying and accommodating instruction to meet the needs of all learners
- implementing strategies for the creation of a learning environment that reflects the Ethical Standards and the Standards of Practice and affirms the need to respect and conserve resources in the environment
• using pedagogies that reflect the professional identity of educators as described in the Ethical Standards, the Standards of Practice and in the Foundations of Professional Practice
• discussing the effectiveness, challenges and experiences related to diverse learning needs and environments of split classes management practices.

F. Assessment and Evaluation
• understanding and implementing fair and equitable assessment and evaluation methods that honour the dignity, emotional wellness and cognitive development of all students
• understanding and implementing formative and summative assessment (for example, assessment for learning, assessment as learning and assessment of learning) strategies that employ a variety of methodologies for the study of computer studies
• understanding a variety of assessment strategies designed to improve student success.

G. Shared Support for Learning
• understanding the importance of continuous, meaningful, detailed and supportive communication with parents/guardians and the community
• understanding the importance of professional collaboration that supports student learning
• understanding and respecting the importance of shared responsibility and partnership as conveyed in the Foundations of Professional Practice.

5. Instructional Practice in the Additional Qualification Course: Computer Studies PART I

In the implementation of this Additional Qualification course, instructors use strategies that are relevant, meaningful and practical in providing candidates with learning experiences about program, instruction, pedagogy and assessment and evaluation. These may include but are not limited to, small group interaction, action research, presentations, independent inquiry, problem solving, collaborative learning and direct instruction.
Instructors model the standards, honour the principles of adult learning, recognize candidates’ experience and prior learning and respond to individual needs. Important to the course are opportunities for candidates to create support networks and receive feedback from colleagues and instructors and share the products of their learning with others. Opportunities for professional reading, reflection, dialogue and expression are also integral parts of the course.

Where possible, experiential learning and authentic school-based experiences are included in the course such as: classroom observations, practicum experiences and action research projects. Instructors model effective instructional strategies and formative and summative assessment that can be replicated or adapted in the candidate’s classroom.

**6. Assessment and Evaluation of Candidates**

At the beginning of the course, candidates are provided with the specific learning expectations and forms of assessment and evaluation that will be used throughout the course. Opportunities will be provided by instructors for regular feedback regarding candidates’ progress throughout the course.

A balanced approach to candidate assessment and evaluation is used. It includes the combination of self and peer assessment and instructor evaluation, and models effective practices. A variety of assessment approaches will be used that enable candidates to convey their learning. The course provides opportunities for both formative and summative assessment and evaluation.

Central to teachers enrolled in Additional Qualification courses is the opportunity to be engaged in relevant and meaningful work. Assignments, artefacts and projects enable candidates to make connections between theory and practice. At the same time, assignments must allow candidates flexibility, choice, and individual inquiry opportunities.

Part of the evaluation process may include a major independent project or action research component over the duration of the course. This project is an opportunity for candidates to illustrate a high level of professional knowledge, communication skills, pedagogy, ethical practices and instructional leadership. Similarly, if a portfolio assignment is used, it will also include reflections and analysis of a candidate’s learning over time.
A final culminating experience in the course is recommended. This experience may take the form of a written assessment, a research paper, a performance, an inquiry project or a product that is genuinely new, meaningful and practical.

The following list of assessment strategies is not exhaustive; it is intended to serve as a guide only.

a) Performance assessment: designing a sample unit which includes a culminating activity and appropriate assessment and evaluation tools, incorporates a variety of technologies and resources relevant to the study of computer studies and is based on Ministry of Education curriculum expectations

b) Written assignment: reflecting critically on issues arising from articles, publications, research and/or other resources related to the teaching or practice of computer studies

c) Presentation: developing a digital story, presenting an issue related to the teaching and learning of computer studies

d) Portfolio: creating a portfolio of practical resources, artefacts, photographs and recording critical reflections for each component related to computer studies

e) Action research: engaging in action research by reflecting and acting upon a specific inquiry into teaching practice related to computer studies

f) Independent project: addressing any aspect of the course that is approved by the instructor

g) Instructional resource: developing a meaningful resource that will support instruction and pedagogy related to the teaching and learning of computer studies

h) Reflective writing: reflecting on professional practice through journal-writing, or writing a case or vignette that will support instruction and pedagogy related to the teaching and learning of computer studies
Appendix 1

The Ethical Standards for the Teaching Profession

The Ethical Standards for the Teaching Profession represent a vision of professional practice. At the heart of a strong and effective teaching profession is a commitment to students and their learning. Members of the Ontario College of Teachers, in their position of trust, demonstrate responsibility in their relationships with students, parents, guardians, colleagues, educational partners, other professionals, the environment and the public.

The Purposes of the Ethical Standards for the Teaching Profession are:

- to inspire members to reflect and uphold the honour and dignity of the teaching profession
- to identify the ethical responsibilities and commitments in the teaching profession
- to guide ethical decisions and actions in the teaching profession
- to promote public trust and confidence in the teaching profession.

The Ethical Standards for the Teaching Profession are:

Care
The ethical standard of Care includes compassion, acceptance, interest and insight for developing students' potential. Members express their commitment to students' well-being and learning through positive influence, professional judgment and empathy in practice.

Respect
Intrinsic to the ethical standard of Respect are trust and fair-mindedness. Members honour human dignity, emotional wellness and cognitive development. In their professional practice, they model respect for spiritual and cultural values, social justice, confidentiality, freedom, democracy and the environment.

Trust
The ethical standard of Trust embodies fairness, openness and honesty. Members' professional relationships with students, colleagues, parents, guardians and the public are based on trust.

Integrity
Honesty, reliability and moral action are embodied in the ethical standard of Integrity. Continual reflection assists members in exercising integrity in their professional commitments and responsibilities.
The Standards of Practice for the Teaching Profession

The Standards of Practice for the Teaching Profession provide a framework of principles that describes the knowledge, skills, and values inherent in Ontario's teaching profession. These standards articulate the goals and aspirations of the profession. These standards convey a collective vision of professionalism that guides the daily practices of members of the Ontario College of Teachers.

The Purposes of the Standards of Practice for the Teaching Profession are:

• to inspire a shared vision for the teaching profession
• to identify the values, knowledge and skills that are distinctive to the teaching profession
• to guide the professional judgment and actions of the teaching profession
• to promote a common language that fosters an understanding of what it means to be a member of the teaching profession.

The Standards of Practice for the Teaching Profession are:

Commitment to Students and Student Learning
Members are dedicated in their care and commitment to students. They treat students equitably and with respect and are sensitive to factors that influence individual student learning. Members facilitate the development of students as contributing citizens of Canadian society.

Professional Knowledge
Members strive to be current in their professional knowledge and recognize its relationship to practice. They understand and reflect on student development, learning theory, pedagogy, curriculum, ethics, educational research and related policies and legislation to inform professional judgment in practice.

Professional Practice
Members apply professional knowledge and experience to promote student learning. They use appropriate pedagogy, assessment and evaluation, resources and technology in planning for and responding to the needs of individual students and learning communities. Members refine their professional practice through ongoing inquiry, dialogue and reflection.

Leadership in Learning Communities
Members promote and participate in the creation of collaborative, safe and supportive learning communities. They recognize their shared responsibilities and their leadership roles in order to facilitate student success. Members maintain and uphold the principles of the ethical standards in these learning communities.

Ongoing Professional Learning
Members recognize that a commitment to ongoing professional learning is integral to effective practice and to student learning. Professional practice and self-directed learning are informed by experience, research, collaboration and knowledge.
Appendix 2

Standards Resources

Information pertaining to the following standards resources is available through the College web site at www.oct.ca.


