



Ontario College of Teachers
Ordre des enseignantes et des enseignants de l'Ontario

**Additional Qualification
Course Guideline
Honour Specialist
Mathematics**

**Schedule E
Teachers' Qualifications Regulation**

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(Updated to reflect the Teachers' Qualifications Regulation)

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Additional Qualification Course Guideline Honour Specialist Mathematics

1. Introduction

The Ontario College of Teachers is the self-regulatory body for the teaching profession in Ontario. Its mandate is to “provide for the ongoing education of members of the College” (*Ontario College of Teachers Act*, Part II Subsection 3 (1) paragraph 6).

In-service professional learning, within the mandate of the College, is identified in the Teachers’ Qualifications Regulation. This regulation includes courses such as Additional Qualification courses including Honour Specialist courses, the Principal’s Qualification Program and the Supervisory Officer’s Qualification Program. Accredited courses support the *Standards of Practice for the Teaching Profession* and the *Ethical Standards for the Teaching Profession* and meet the legislative requirements included in the Teachers’ Qualifications Regulation.

Successful completion of the Additional Qualification course Honour Specialist Mathematics listed in the Teachers’ Qualifications Regulation made under the *Ontario College of Teachers Act* is recorded on the Certificate of Qualification issued to members of the College.

The underlying purpose of the Additional Qualification course Honour Specialist Mathematics is to focus on developing the capacity for curriculum leadership in candidates. The Additional Qualification course Honour Specialist Mathematics supports the expectations outlined in the Ministry of Education curriculum policy documents and other Ministry of Education policies.

In this document, all references to candidates are to teachers enrolled in the Additional Qualification course. References to students indicate those in school programs.

2. Background

Teachers who enrol in the Additional Qualification course Honour Specialist Mathematics possess expertise in the subject area and have at least two years of successful teaching experience including one year in Ontario in the subject(s) in which the Honour Specialist is sought. Candidates include teachers who plan to move into leadership positions at the elementary, secondary and district levels as well as teachers interested in engaging in subject-specific ongoing professional learning. The College recognizes that candidates working in any of the four publicly funded systems have a need to explore topics and issues of particular relevance to the system in which they work or may work.

The Additional Qualification course Honour Specialist Mathematics focuses on curriculum leadership. The course addresses contexts and theories underpinning the study of Mathematics. Pedagogy, curriculum, assessment and evaluation, technology, child and adolescent development related to program planning and implementation are also addressed.

3. Standards of Practice for the Teaching Profession and the Ethical Standards 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 *Standards of Practice for the Teaching Profession* and the *Ethical Standards for the Teaching Profession* provide the focus for ongoing professional learning and are the foundation for the development of the Additional Qualification course Honour Specialist Mathematics. In addition, the *Professional Learning Framework for the Teaching Profession* supports the *Standards of Practice for the Teaching Profession*, articulates the principles on which effective teacher learning is based and acknowledges a range of options to promote continuous professional learning.

4. Learning Expectations

The *Standards of Practice for the Teaching Profession* and the *Ethical Standards for the Teaching Profession* have been embedded in the learning expectations for the Additional Qualification course Honour Specialist Mathematics.

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

- demonstrating leadership in the implementation of Ministry of Education elementary and secondary school and curriculum policies
- demonstrating leadership in communicating changes in and implications of provincial legislation and local policies including legal and ethical issues related to teaching Mathematics
- demonstrating knowledge of child and adolescent development related to the teaching of Mathematics
- facilitating the creation of learning environments conducive to the intellectual, social, emotional, physical, linguistic, cultural, spiritual and moral development of students
- demonstrating knowledge of theoretical foundations and methodologies necessary to plan, implement and assess Mathematics programs for students
- promoting an awareness of current research in Mathematics and an understanding of its implications for teaching and learning
- demonstrating and analysing strategies to create an inclusive, equitable and safe learning environment that addresses the diversity of learners, both children and adults

- demonstrating leadership in accommodating and/or modifying expectations, teaching strategies and assessment practices to address the developmental and/or special needs of students
- modelling and implementing assessment and evaluation practices based on data analysis and research to improve student achievement and learning
- demonstrating leadership in accessing and assessing a variety of resources, including technology, within and beyond the educational system to enhance and support student learning
- demonstrating the ability to integrate information and communication technology into teaching practice
- demonstrating the organizational and interpersonal skills necessary as a curriculum leader in Mathematics
- understanding ways to facilitate reflective practice as a means to improve teaching and learning
- demonstrating the knowledge and skills to facilitate innovation and change to improve learning
- understanding the issues and challenges related to the teaching of Mathematics
- understanding how to create and sustain professional learning communities at the school, district and/or provincial level
- understanding how to develop communication networks that promote collaboration with in-school personnel, parents/guardians and the community.

5. Curriculum Content

The Additional Qualification course Honour Specialist Mathematics supports the following Ministry of Education documents:

Choices into Action

Ontario Secondary Schools, Grades 9-12

Program Planning and Assessment, Grades 9-12

The Ontario Curriculum, Grades 9 and 10: Mathematics

The Ontario Curriculum, Grades 11 and 12: Mathematics

The Ontario Curriculum, Grades 11 and 12: Interdisciplinary Studies

The Ontario Curriculum, Grades 1-8: Mathematics

Individual Education Plans: Standards for Development, Program Planning and Implementation

At least one half of the course content needs to have a subject specific focus.

Successful candidates will demonstrate their understanding and ability to apply the following:

- A. *The Standards of Practice for the Teaching Profession and the Ethical Standards for the Teaching Profession*
- B. Theoretical Foundations
- understanding the context (historical, philosophical, sociological, psychological) related to the study of Mathematics
 - understanding and applying human development theories and research (social, emotional, physical, intellectual, linguistic, cultural, spiritual and moral) about the learner and the study of Mathematics
 - understanding theories of exceptionalities related to the learner
 - demonstrating an awareness of local, provincial and international developments in the teaching of Mathematics
 - reflecting on personal teaching practice and engaging in professional dialogue on the relationship of theory and practice in the teaching of Mathematics
- C. Program Planning, Development, Implementation and Review
- analyzing Ministry of Education elementary and secondary curriculum policies and identifying implications for program planning and implementation
 - designing review processes for continuous program improvement and currency
 - exploring teaching and learning strategies related to the learning styles of students
 - assisting colleagues to modify learning expectations and teaching practices and to make accommodations for the learner based on developmental and/or special needs
 - exploring opportunities for cross-curricular literacy and interdisciplinary studies in Mathematics education
 - examining the use of appropriate technology to implement the Mathematics curriculum and facilitate student learning
 - promoting the safe, ethical and legal use of technology and other resources in Mathematics programs
- D. Student Assessment and Evaluation
- modelling the development and use of an array of assessment and evaluation strategies suitable for teaching Mathematics

- generating strategies to facilitate student learning and enhance student achievement based on research, data analysis and Ministry of Education policies
- assisting others to develop performance criteria that measure students' achievement of curriculum expectations
- assisting others in developing methods that provide continuous, meaningful, detailed and supportive feedback to students
- demonstrating leadership in modifying assessment practices based on the developmental and/or special needs of students

E. Leadership and Ongoing Professional Learning

- promoting the benefits of participating in local, provincial, national and international organizations related to the teaching of Mathematics
- assisting others to access organizational, print and electronic resources which support curriculum, professional growth and leadership
- promoting the use of information and communication technologies as teaching and learning tools where appropriate
- modelling strategies to initiate and manage change related to Mathematics education
- modelling team building and decision-making skills necessary as a curriculum leader in Mathematics
- promoting effective teaching strategies and assisting new teachers and others to improve and refine classroom practice in the delivery of Mathematics programs
- encouraging and supporting colleagues' interests in professional growth opportunities related to the teaching of Mathematics
- planning and organizing subject-specific professional development for others
- demonstrating skills and strategies that facilitate the establishment of networks with school and board personnel, subject associations, parents/guardians and the community to support Mathematics education
- demonstrating leadership in the application of provincial regulations and policies, and local policies and procedures
- informing others about policies, guidelines, and legal and ethical issues related to the teaching of Mathematics
- demonstrating knowledge and skills required to manage an area of responsibility including staffing, budgets and the selection of texts, software and media.

6. Instructional Practice

In the delivery of this Additional Qualification course, instructional practices are relevant, meaningful, practical and supported by academic literature. These include, but are not limited to: small group interaction; action research; peer presentations; independent inquiry; problem solving; co-operative learning and direct instruction. Instructors 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, receive feedback from peers and instructors and share their learning with others. Opportunities for professional reading, reflection, collaboration and discussion are also integral parts of the course.

Instructors model effective instructional practices and employ a variety of strategies for formative assessment and summative evaluation. Instructors are encouraged to use information and communication technology to support pedagogical effectiveness.

7. Assessment and Evaluation of Candidates

At the beginning of the course, candidates are provided with the specific expectations and forms of assessment and evaluation that will be used throughout the course. A balanced approach to candidate assessment and evaluation is used. It includes a combination of self, peer and instructor formative assessment, instructor evaluation, and models best practice.

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

- a) Performance assessment: designing a unit that is based on Ministry of Education curriculum expectations, includes assessment and evaluation tools, and incorporates a variety of technologies and resources
- b) Written assessment: reflecting critically on issues arising from articles, publications, research and/or other resources related to the teaching of Mathematics
- c) Written test: responding to questions or writing an essay on an aspect of leadership in Mathematics education
- d) Oral presentation: presenting a topic related to Mathematics that could be replicated for a presentation to parents and/or school community
- e) Portfolio: creating a portfolio of practical resources and recording critical reflections on the delivery of the Mathematics curriculum
- f) Action research: engaging in reflective practice through personal research and its application within the context of Mathematics education
- g) Leadership project: developing a comprehensive plan for a curriculum-related project at the school or board level.