

Fontbonne University's master of science (MS) degree in computer education is for educators who want to integrate technology into their teaching and curriculum in order to help prepare their students for the 21st century. Educators include everyone interested in enhancing teaching and learning by the use of technology; K-12 teachers, community and four-year college instructors, as well as those in business and industry who are charged with the professional development of their colleagues.

Our program helps educators develop the professional skills, knowledge, and perspective necessary to stay current and relevant in today's electronic age. Our students learn to work with computers and computer-supported technologies as educators – not as technology experts. Our faculty members prepare educators to handle differentiated learning styles and the numerous challenges that they face daily in an educational environment.

At Fontbonne, we believe in teaching by example. Classes are small. Our faculty members are educational leaders who combine strong academic credentials with relevant experience. They are experts with years of experience using technology in the classroom of local school districts and colleges. Professors are knowledgeable and committed to the success of their students. They share effective contemporary techniques that prepare all educators to excel and inspire their own students.

ONLINE PROGRAMS

Fontbonne University's computer education graduate degree and certificate programs are both available completely online, and, like our traditional programs, our online programs are accredited by the Higher Learning Commission, North Central Association of Colleges and Schools. Students receive the same high-quality education online as students who attend classes on campus. They learn from the same outstanding faculty and share the same curriculum. The difference is optimum flexibility, an important factor that makes it possible for our students to reach their higher education goals.

Opportunities to Advance and Excel

The master of science degree in computer education can be earned in 33 credit hours. The department offers three graduate certificates, one of which can be earned in 18 hours and the other two in 15 credit hours each. Experienced educators with masters' degrees can advance their professional development and salaries. Our computer education graduate degree challenges our students to remain professionally current.

Our graduates are in demand in the evolving landscape of modern education. For K-12 teachers, earning this degree is an excellent way to complete their continuing education requirement and learn new technology that will enhance their classroom teaching.

For information and for application materials contact:

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FACULTY

Most faculty members in the master of science degree program in computer education are full-time educators who are experts in specific areas of using technology in learning environments. These teachers bring years of experience in using technology to enhance student learning.

ADMISSION

For detailed information on university admission policies and regulations, please refer to the graduate program information section in this catalog. In addition:

- A minimum undergraduate GPA of 3.0 on a 4.0 scale is required for full acceptance. Others may be admitted on probationary status pending demonstration of ability to perform quality work at the graduate level.
- Three letters of recommendation, one of which is from a supervisor or recent academic advisor, are required. If this is not possible, please contact the director of the master of science degree program in computer education.
- A self-statement, indicating the reasons for desiring to earn a master's degree in computer education is required.

All credentials submitted for admission must be on file no later than one week prior to final registration for the term in which the applicant wishes to begin.

ACADEMIC POLICIES AND REGULATIONS

For detailed information on academic policies and regulations, including information relative to grade definitions, satisfactory progress, transfer of credit, etc., please refer to the graduate program information section in this catalog.

TRANSFER OF CREDIT AND COMPETENCY TESTING

For the master of science degree, a student may transfer a maximum of two graduate-level courses into the program from an accredited, degree-granting institution of higher education. The course content must be comparable to the content of a course within Fontbonne's master's program. The grade received must be B or higher. The course must have been taken within three years prior to admittance into the master of science degree program in computer education. For the graduate certificates, a student may transfer, at most, one graduate-level course with the same stipulations as above.

For the master of science degree in computer education, a maximum of two competency tests may be taken as substitutes for some courses before the student has completed nine hours of coursework in the program. For the graduate certificates, a maximum of one competency test may be taken as a substitute for a course before the student has completed three hours of coursework in the program. A fee of \$50 per credit hour is currently charged for taking a competency test. The total number of courses transferred and competency tests taken may not exceed two for the master degree and one for the graduate certificate.

DUAL UNDERGRADUATE/GRADUATE ENROLLMENT

For detailed information on dual undergraduate/graduate enrollment, please refer to the graduate program information section in this catalog.

EDUCATOR'S DISCOUNT

Please refer to the graduate program information section in this catalog for detailed information on discounts.

DEGREE REQUIREMENTS

The student must successfully complete 33 semester hours of graduate credit to earn a master of science degree in computer education at Fontbonne University.

Four required courses:

- CED 505 Teaching Technology and Learning Theory
- CED 515 Computer Applications for Educators
(CED 515 and 565 are prerequisites for all other courses)
- CED 565 The Internet and Education
- CED 595 Curriculum Design and Capstone Portfolio
(*must be taken during final semester*)

Seven remaining elective courses from the following online courses:

- CED 507 Enhancing Instruction with Technology
- CED 525 Legal and Ethical Technology Issues
- CED 551 Virtual Worlds in Education
- CED 552 Creating a Presence in a Virtual World
- CED 553 An Immersive Experience in a Virtual Learning Community

- CED 560 Current Programming Languages
- CED 563 Visual Basic
- CED 566 Web Project Design Principles
- CED 568 Differentiated Instruction Using Technology
- CED 570 Emerging Technologies in Education
- CED 575 Multimedia Productions
- CED 577 Research in Computer Education
- CED 580 Web Technology (Classroom 2.0)
- CED 587 Instructional Design and Technology
- CED 592 Online Course Design and Teaching

The student may choose electives from the following courses that are not yet online:

- CED 510 A Multidimensional View of Computer Education
- CED 540 Structured Programming for the Educator
- CED 544 Advanced Placement Programming
- CED 571 Computer Networks

NOTE: At times CED 594 Special Topics in Computer Education may be offered.

GRADUATE CERTIFICATE REQUIREMENTS

The student must complete 15-18 semester hours of graduate credit with a cumulative GPA of 3.0 or higher.

Required courses:

- CED 505 Teaching Technology and Learning Theory
 - CED 515 Computer Applications for Educators
 - CED 565 The Internet and Education
- Two elective courses chosen from among the other courses offered within the program.

Required courses for the graduate certificate in Virtual Worlds in Education:

- CED 515 Computer Applications for Educators
- CED 565 The Internet and Education
- CED 551 Virtual Worlds in Education
- CED 552 Creating a Presence in a Virtual World
- CED 553 An Immersive Experience in a Virtual Learning Community

Required courses for the graduate certificate in Instructional Technology:

- CED 515 Computer Applications for Educators
- CED 565 The Internet and Education
- CED 566 Web Project Design Principles
- CED 575 Multimedia Productions
- CED 587 Instructional Design and Technology
- CED 592 Online Course Design and Teaching

COURSES**CED 505 Teaching Technology and Learning Theory (3 credits)**

Provides practical, effective ways to integrate technology resources and technology-based methods into everyday classroom practices. Topics will be considered in the context of current theories of learning, effective school practices and reflective teaching. Objectives of the course are to develop web-based instructional lessons and/or units to support a cognitive-active approach to learning, learn to modify questioning strategies in order to create essential questions that develop critical thinking and problem-solving skills, connect theories of teaching and learning to the use of technology in classrooms, recognize web-based resources as an instructional tool, integrate the Internet in content-area instruction, and develop professional alignments with national standards in technology. FA

CED 507 Enhancing Instruction with Technology (3 credits)

Provides educators with knowledge and guided practice to effectively use software, the Internet and other technology resources available in education. Activities completed in this class act as a springboard for a future of a technology rich curriculum with the aim of transforming students into lifelong learners. SP

CED 510 A Multidimensional View of Computer Education (3 credits)

Provides overview of how computers can be used as educational tools. Reviews hardware, software, and other materials for classroom use and potential use. SU

CED 515 Computer Applications for Educators (3 credits)

Introduces the student to computer applications using the Windows operating system, Microsoft Office and various other personal software packages for the Windows platform. The applications include Word, PowerPoint, Publisher, Excel and Access. The emphasis will be on the use of these applications in the educational environment. FA, SP, SU

CED 525 Legal and Ethical Technology Issues (3 credits)

Introduces the ethical issues relating to the use of technology in education. Examines the present and future controversies surrounding the integration of technology into the instructional process and educational institutions. SP

CED 540 Structured Programming for the Educator (3 credits)

Teaches structured programming design concepts using various programming languages. Emphasis on programming to direct computer's actions in a structured manner. Prerequisite: Knowledge of operating system. As needed.

CED 551 Virtual Worlds in Education (3 credits)

Provides an introduction to virtual worlds and their application to learning environments. Students will learn the psychology and philosophies of virtual environments and

their impact on learning both now and in the future. Students will investigate and participate in various virtual worlds, learn the basic skills necessary to create their own virtual environments, and integrate learning activities into a virtual world in order to motivate and challenge their audience. Since virtual environments promise to be a significant component of our online existence, this course is an opportunity to experience them firsthand and discover their potential. FA

CED 552 Creating a Presence in a Virtual World (3 credits)

This course will provide students with the opportunity to become participating citizens of one of the most innovative and creative virtual worlds. Students will go beyond the basics to become competent builders, scriptors, animators, designers, machinima makers, etc. They will also apply the basic elements of game design to produce quality educational activities and simulations for use in both the virtual and real worlds. Prerequisite: CED 551. SP

CED 553 An Immersive Experience in a Virtual Learning Community (3 credits)

Students will have the opportunity to define their own presence in a virtual world by creating their own learning path. Based on the skills and experiences gained from previous courses, the students will explore and examine individual interests in the virtual environment with the guidance and direction of the instructor. Areas of interest could include such topics as: Researching Behavior in the virtual world, Creating a Unique Environment or Learning Community in the Virtual World, Designing Educational Strategies for use in the Virtual World, Starting a Business in the Virtual World, etc. Prerequisite: CED 552. SU

CED 560 Current Programming Languages (3 credits)

Introduces students to a programming language in order to teach students a systematic discipline and as a problem-solving tool. Acquaints students with fundamental concepts of computers, information processing, algorithms, and programs. SP

CED 563 Visual Basic (3 credits)

Introduces topics of event-driven programming and OOP (Object Oriented Programming) and related programming applications. Students learn how to construct Visual Basic programs that can be used in their classrooms or place of employment. FA

CED 565 The Internet and Education (3 credits)

Provides basic knowledge and guided practice to effectively use the Internet and telecommunications resources. Course-work will act as a springboard for valuable communication in the classroom and for personal use. FA, SP, SU

CED 566 Web Project Design Principles (3 credits)

Covers how to design web pages for a web site utilizing HTML programming and a current web page design tool. Students will learn professional web design rules and guide-

lines in addition to the creation and manipulation of original graphics and audio files. They will also learn how to evaluate web sites and address accessibility issues. SU

CED 568 Differentiated Instruction Using Technology (3 credits)

Explores the ways technology tools are used to differentiate instruction in all content areas. Based on research, educators will devise practical learning strategies to engage their students. Those educators that are not in classroom settings will focus on how differentiated instruction fits with adult learning and training models. As needed.

CED 570 Emerging Technologies in Education (3 credits)

Provides a foundation for the understanding of computer hardware, including internal parts and peripherals. Develops criteria for the selection and the appropriate utilization of computer hardware within an educational environment. Promotes discussions on the selection of computer hardware and offers video streaming to assist in the explanation of specific working parts of a computer. FA

CED 571 Computer Networks (3 credits)

Provides terminology, purpose, design, specifications, and implementation of computer networks for instructional and/or administrative goals. Focuses on local area network architecture and applicability to design of larger network systems. Alternatives to networking are studied and placed in context. Prerequisite: CED 570. As needed.

CED 575 Multimedia Productions (3 credits)

Provides students with a foundation in design, development and strategies to produce effective multimedia presentations. Students choose from available multimedia tools to produce digital creations for use in multimedia presentations or lessons. This course is project-based. SP

CED 577 Research in Computer Education (3 credits)

Introduces students to research in computer education. Students will investigate at least 5 areas in which research in computer education takes place. Students will select topic(s) based on this original investigation and their own interests and perform a research study. As a result of the course, students will advance both their Internet and database research skills and their skills as an educator integrating technology into the educational environment. Interpretation, analysis, and synthesis of current research in computer will be focal points of this course.

CED 580 Web Technology (Classroom 2.0) (3 credits)

Provides students with the opportunity to explore the newest web tools and discuss and evaluate their impact in terms of student learning, professional development and pedagogy. Students will learn to think critically about the use of web tools in their classrooms. Students will generate creative learning formats and harness the potential of the read/write web to provide an environment of engaged and interactive learning in their classrooms. SU

CED 592 Online Course Design and Teaching (3 credits)

Provides students with the basis for designing and teaching an online course. Topics will include the following: creating a welcoming environment, developing a detailed syllabus for online students, stating measurable learning objectives, creating an online course that is easy to navigate, communication, assessment in an online course and methods of presenting content in an online course. The mechanics of using an online course management tool will also be presented. FA

CED 594 Special Topics in Computer Education (3 credits)

Addresses current, relevant topics in computer education not covered in previous coursework. Topics may include creating digitally, teaching online, programming, assistive technologies, and research in computer education. May be taken more than once. Prerequisite: Completion of at least 12 semester hours.

CED 595 Curriculum Design and Capstone Portfolio (3 credits)

This course consists of two main parts:

1. Extends students' knowledge of the instructional applications of computers and technology. Research into current curriculum theory and development will be the basis for modeling educational activities that enhance classroom instruction. Recognition and design of specific technological applications and resources will be emphasized in order to produce effective and practical classroom and professional applications.
2. Provides a framework for students to compile a Capstone Portfolio that will consist of three major components. The portfolio will demonstrate the student's over-all knowledge, abilities, and progress throughout the master's degree process as well as a personal reflection essay and an assessment of the masters program in computer education. FA, SP, SU