Department of Mathematics and Computer Sciences

Computer Science (MS)
Instructional Design and Technology (MS)

GRADUATE CERTIFICATES
Instructional Design and Technology
Mobile App Development and Computer Programming

The Department of Mathematics and Computer Science offers two master of science degrees: Computer Science and Instructional Design and Technology.

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.

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.

MASTER OF SCIENCE IN COMPUTER SCIENCE (CS)
Computer Science is a field with a continuously expanding need for advanced knowledge and expertise. A master of science (MS) degree in Computer Science from Fontbonne University will give you the tools needed to succeed and advance in this diverse industry. Fontbonne's MS in Computer Science degree offers two tracks: Cybersecurity and Data Mining. It also offers three study plans: all course work, a master's thesis or a master's project. Our small class sizes will offer you the personal attention you need

A student in the MS in Computer Science degree program may begin course work in fall or spring. There is no summer program start, however, summer courses will be offered.

The application deadline for fall is July 1; for spring is November 1.

ADMISSION
For the MS degree in Computer Science, these are the admission requirements:
1) Official transcripts from all universities attended
   a) Applicants must have completed a baccalaureate in Computer Science or a related discipline before beginning the master's program. Transcripts must show the following coursework, or students must complete the work prior to starting their MS degree.
      i) Calculus I and II
      ii) Discrete Math
      iii) Computer Architecture or Organization
      iv) Operating Systems
      v) C and (C++ or Java)
      vi) Data structures and algorithms
      vii) Database management
      viii) Elementary statistics course
2) Entrance examinations
   a) A minimum GRE score of 290 is required, with 150 quantitative and 140 verbal. The GRE test can be waived if any one of the following conditions is satisfied.
      i) BS in Computer Science from ABET accredited program
      ii) BS in Computer Science or related field with a gpa of 3.5/4.0
      iii) MS in related field
      iv) 3 years of field experience in IT related area
3) Grade Point Average
   a) 3.0/4.0 full acceptance as long as other criteria are met
   b) 2.75/4.0 conditional acceptance. Must maintain 3.0 gpa for first 6 hours of course work, with no grade below B-.
4) Personal Statement
   a) In 500 – 600 words, tell us your goals and reason(s) for pursuing graduate study in computer science.
5) In addition, the following applies to international students.
   a) GPA 3.0/4.0 (There is no "conditional" admission for international students based on their academic GPA.)
   b) If a student submits foreign university transcripts that we cannot evaluate, then the student must submit a WES evaluation of his/her transcripts. (WES is World Education Services, a professional organization that will help with foreign transcript evaluation.)
   c) Language requirement: 70 internet-based TOEFL (IBT)/ 6.0 IELTS/ 280 Fontbonne University Standardized exam.
   d) Copy of passport
   e) Completed international student application
   f) Proof of financial support in the amount of $23,330 (if student is not the sponsor, a sponsorship affidavit of support is required)

APPLICATION
Information and application materials may be found at www.fontbonne.edu/eveonlineapp. To schedule an appointment or to learn more about our MS degrees you may call 314-863-2220 or email. eveonline@fontbonne.edu In addition, you may contact Ms. Cheryl Burrus, administrative assistant, at cburrus@fontbonne.edu or 314-889-4508 or JoAnn Mattson, Director of the MS degree programs at jmattson@fontbonne.edu or 314-889-4514.

The application deadline for fall is June 1; for spring is October 1. There is no summer program start.

DEGREE REQUIREMENTS
The student must successfully complete 34 semester hours of graduate credit to earn a Master of Science degree in Computer Science.

Graduate Core Courses
Choose four of the following six courses (12 credits)
CIS 501 Advanced Algorithms and Data Structures (3 credits)
CIS 502 Advanced Operating Systems (3 credits)
CIS 503 Advanced Software Engineering (3 credits)
CIS 504 Advanced Computer Organization and Architecture (3 credits)
CIS 505 Advanced Database Systems (3 credits)
CIS 506 Advanced Computer Networks (3 credits)

Students must also take the Colloquium course:
CIS 510 Colloquium in Computer Science (1 credit)

Total of 13 hours of required course credit.

Elective Graduate Courses
Students can select elective graduate courses from within two different tracks or they may take a Special topics course or an internship.

Cybersecurity Track
CIS 530 Network Security (3 credits)
CIS 535 Applied Cryptography (3 credits)
CIS 539 Topics in Cybersecurity (3 credits)

Data Mining Track
CIS 550 Introduction to Data Mining (3 credits)
CIS 555 Advanced Data Mining (3 credits)
CIS 559 Data Mining and Digital Image Processing (3 credits)

General Courses
CIS 584 Internship in Computer Science (1-3 credits).
May be taken for a maximum of 3 credit hours.
CIS 585 Independent Study in Computer Science
(1-3 credits)
CIS 594 Special Topics in Computer Science (3 credits)

Students must choose from among three curriculum plans: A, B or C
Plan A – Course Work Only (21 credits)
Seven additional 3-credit courses selected from the core or elective courses listed above

Plan B – Master Project (21 credits)
Five additional 3-credit courses selected from the core or elective courses listed above
Two courses (six credits) devoted to a Master Project

Plan C – Master Thesis (21 credits)
Five additional 3-credit courses selected from the core or elective courses listed above
Two courses (six credits) devoted to a Master Thesis

MASTER OF SCIENCE IN INSTRUCTIONAL DESIGN AND TECHNOLOGY (IDT)

The master of science (MS) degree in Instructional Design and Technology is for adult learners who want to identify, plan, create and deliver instructional experiences to targeted audiences.

The MS in IDT has four areas of specializations: Learning Technologies, Learner Experience Design, Web Development/Multimedia Production and Mobile App Development/Computer Programming. Offering four areas of specialization allows students the opportunity to focus on a specific area within the instructional design process.

The four specializations are:
1. **Learning Technologies**: focuses on evaluating, designing, developing and implementing a variety of learning technologies in an educational setting to improve traditional classroom learning. This specialization is designed for individuals who want to work in the K-12 or higher education environment.
2. **Learner Experience Design** (LX Design): focuses on analyzing, designing, developing, implementing and evaluating technologies in a learning / training environment. This specialization is designed for individuals whose careers are in business, health fields or government.
3. **Web Development and Multimedia Production**: focuses on web design, site structure, web programming, graphic design and video editing. This specialization is for individuals who want to work in the instructional design field and focus on web design, graphic design, or video editing as it relates to the learning experience.
4. **Mobile App Development / Computer Programming**; focuses on computing programming and mobile app development. This specialization is designed for educators or others interested in applying the knowledge of computer programming, mobile app development and mobile learning to the curriculum and/or other learning environments.

TRANSFER OF CREDIT

For the master of science degrees in Instructional Design and Technology, 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 one of the master's programs offered by the department. 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 Instructional Design and Technology.

ADMISSION

For the MS degree in Instructional Design and Technology these are the admission requirements:

1. A minimum undergraduate GPA of 2.5 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.
2. Self-statement. In 500 – 600 words, tell us your goals and reason(s) for pursuing graduate study in instructional design & technology.

APPLICATION

Information and application materials may be found at www.fontbonne.edu/eveonlineapp. To schedule an appointment or to learn more about our MS degrees you may call 314-863-2220 or email eveonline@fontbonne.edu. In addition, you may contact Ms. Cheryl Burrus, administrative assistant, at cburrus@fontbonne.edu or 314-889-4508, Dr. Mary Abkemeier, chair of the department, at mary.abkemeier@fontbonne.edu or 314-889-1497or Ms. Jo Ann Mattson, Director of the MS in IDT program, at jmattson@fontbonne.edu or 314-889-4514.

DEGREE REQUIREMENTS

The student must successfully complete 34 semester hours of graduate credit to earn a master of science degree in Instructional Design and Technology at Fontbonne University. Twenty-two of the hours are required from the core and 12 additional hours selected from a chosen Specialization:

Required Graduate Core Courses:

IDT 500 Foundations of Instructional Design Systems (3 credits)
IDT 505 Teaching Technology and Learning Theory (3 credits)
IDT 507 Instructional Tools for the 21st Century (3 credits)
IDT 525 Legal and Ethical Technology Issue (3 credits)
IDT 535 Instructional Games and Simulations (3 credits)
IDT 565 The Internet and the Web (3 credits)
IDT 595 Capstone Portfolio (1 credit)

Plus one of the following two courses (3 credits):
IDT 577 Research in Instructional Design and Technology
IDT 584 Internship in Instructional Design and Technology

Specialization I: Learning Technologies

Required Courses (6 credits):
IDT 568 Differentiated Instruction (3 credits)
IDT 592 Online Course Design and Teaching (3 credits)

Two courses selected from the list below (6 credits):
IDT 501 Processes of Instructional Design and Technology Systems
IDT 515 Computer Applications for the Educator
IDT 540 Programming in C++
IDT 546 Industry-Standard Software Authoring Tools
IDT 547 Robotics
IDT 549 Programming in Java
IDT 560 Current Programming Languages (Scratch)
IDT 570 Emerging Technologies
IDT 572 Andriod Programming **OR** IDT 574 iOS Programming
IDT 581 Video Design, Production, and Editing
IDT 594 Special Topics in Instructional Design and Technology

Specialization II: Learner Experience Design

Required courses (9 credits):
IDT 501 Processes of Instructional Design and Technology Systems (3 credits)
IDT 546 Industry-Standard Software Authoring Tools (3 credits)
IDT 592 Online Course Design and Teaching (3 credits)

One course selected from the list below (3 credits):
IDT 581 Video Design, Production, and Editing
IDT 590 Current Topics in Instructional Design and Technology
IDT 594 Special Topics in Instructional Design and Technology

Specialization III: Web Development and Multimedia Production

Required courses (12 credits):
Two courses from the ART 50X level (6 credits)
ART 518 Digital Imaging (3 credits)
IDT 581 Video Design, Production, and Editing (3 credits)

Specialization IV: Mobile App/Computer Programming

Required courses (3 credits):
ART 518 Digital Images (3 credits)

Choose one pair of courses (6 credits):
IDT 540 Programming with C++ **AND**
IDT 574 iOS Programming
OR
IDT 549 Programming in Java **AND**
IDT 572 Andriod Programming

One course selected from the list below (3 credits):
IDT 540 Programming in C++
IDT 546 Industry Standard Software Authoring Tools
IDT 547 Robotics

IDT 549 Programming in Java
IDT 560 Current Programming Languages (Scratch)
IDT 570 Emerging Technologies
IDT 581 Video Design, Production and Editing
IDT 592 Online Course Design and Teaching
IDT 594 Special Topics in Instructional Design and
     Technology

GRADUATE CERTIFICATE REQUIREMENTS
Transfer of Credit

For the graduate certificates in this department, a student may transfer, at most, one graduate-level course from an accredited, degree-granting institution of higher education. The course content must be comparable to the content of a course within one of the master's programs offered by the department. The grade received must be B or higher. The course must have been taken within three years prior to admittance into the program.

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

INSTRUCTIONAL DESIGN AND TECHNOLOGY

Required Courses (9 credits):
IDT 500 Foundations of Instructional Design Systems (3
     credits)
IDT 501 Processes of Instructional Design and Technology
     Systems (3 credits)
IDT 507 Instructional Technology Tools for the 21st
     Century (3 credits)

Two courses from the following list (6 credits):
IDT 525 Legal and Ethical Technology Issues
IDT 535 Instructional Games and Simulations
IDT 546 Industry Standard Software
IDT 570 Emerging Technologies
IDT 577 Research in Instructional Design and Technology
IDT 581 Video Design, Production, and Editing
IDT 590 Current Topics in Instructional Design and
     Technology
IDT 592 Online Course Design and Teaching
IDT 594 Special Topics in Instructional Design and
     Technology

MOBILE APP DEVELOPMENT AND COMPUTER PROGRAMMING

This certificate is designed for students who want to become competent in computer programming and mobile app development. (12 credit hours)

Required Courses:
Choose at least one pair from the following two choices (6-12 credits):

IDT 540 C++ Programming **AND**
IDT 574 iOS Programming (6 credits)
OR
IDT 549 Java Programming **AND**
IDT 572 Andriod Programming (6 credits)

Choose two electives from the following if only one pair is chosen from the two listed above. (6 credits)

IDT 547 Robotics
IDT 560 Current Programming Languages
IDT 540 C++ Programming **OR** IDT 549 Java
     Programming
ART 518 Digital Images

Courses

CIS 501 Advanced Algorithms and Data Structures (3 credits)

Presents an in-depth study of algorithms and data structures. Topics include concepts and skills needed to analyze algorithms, advanced data structures, dynamic data structures, complexity theory and theories of computation. Prerequisite: CIS 250 or consent of instructor.

CIS 502 Advanced Operating Systems (3 credits)

Presents an in-depth study of advanced topics in the field of operating systems. Topics include distributed file systems and structures, multiprocessor operating systems, parallel and concurrent programming, scheduling and resource/memory management. Prerequisite: CIS 355 or consent of instructor.

CIS 503 Advanced Software Engineering (3 credits)

Presents an in-depth study of advanced topics in the field of software engineering. Topics include software requirements workflow, object-oriented analysis and design workflow, implementation workflow, testing workflow, quality assurance, software reliability and testing methods. Prerequisite: CIS 475 or consent of instructor.

CIS 504 Advanced Computer Organization and Architecture (3 credits)

Presents an in-depth study of computer organization and architecture. The focus of the course is on increasing the speed of processor execution and optimizing energy efficiency. Topics include parallel processing, multiple cores, pipelining and caching. Issues such as data synchronization and advanced mathematical structures are covered. Current advances in processor design that affect program execution speed are also presented. Prerequisite: CIS 310 or consent on instructor.

CIS 505 Advanced Database Systems (3 credits)

Presents an in-depth study of the foundations of designing and implementing relational database management systems. Topics include data representation, indexing, query processing and optimization. Prerequisite: CIS 330 or consent of instructor.

CIS 506 Advanced Computer Networks (3 credits)

Presents an in-depth study of the foundations of designing and implementing computer communication networks, network protocols and applications. Topics include network programming (e.g. sockets) and 5-layer network architecture: physical layer, data link protocols, network routing layer and transport layer protocols (e.g TCP and UDP), and application layer (e.g. http and https). Prerequisite: CIS 340 and Unix Programming or consent of instructor.

CIS 510 Colloquium in Computer Science (1 credit)

Seminars that consist of a series of individual presentations by faculty, students or guest speakers. Prerequisite: consent of the instructor. FA

CIS 530 Network Security (3 credits)

Presents an in-depth study of advanced topics in the field of network security. Topics include the applications of cryptographic concepts to the field of network security, risks and vulnerabilities of network data, countermeasures to fight cyber attacks, digital signatures, and various network security technologies that are applied to email, e-commerce, web transactions and IP networks. Prerequisites: CIS 340 and 345 or consent of instructor.

CIS 535 Applied Cryptography (3 credits)

Presents an in-depth study of advanced topics in the field of applied cryptography. Topics include mathematical background necessary to understand, implement, and break modern cryptographic algorithms such as prime number factoring, advanced/complex cryptographic algorithms and their implementations in software and hardware. Additional topics include advanced decryption and vulnerability, block modes, random and pseudorandom number generators, secret sharing, zero-knowledge, and quantum cryptography. Background knowledge in complexity of algorithms and theory of computation will be helpful for understanding the materials. Prerequisite: CIS 395 or consent of instructor.

CIS 539 Topics in Cybersecurity (3 credits)

Presents advanced topics in cybersecurity. Potential topics include "Computer Security and Privacy" and "Advanced Digital Forensics". Prerequisite: CIS 496 or consent of instructor.

CIS 540 Software Engineering in an Enterprise Environment (3 credits)

Presents the design and execution of large software projects. Topics include life cycle models, planning, resource and time estimation, and integration of large projects. Tools used in the design of projects, such as UML-based tools will also be presented. Team-design practices will be stressed in product definition, creation, analysis and testing. Prerequisite: CIS 503 or consent of instructor.

CIS 545 Software Quality Analysis and Testing (3 credits)

Presents the study and use of software analysis and testing. Topics include the requirements of test planning, white box and black box testing, bottom up and down testing

strategies and other industry standard test methods. Additional topics include automated and unit testing as well as COBRA. A variety of software quality analyses used in industry will be presented. Prerequisite: CIS 540 or consent of instructor.

CIS 549 Topics in Software Engineering (3 credits)

Presents advanced topics in software engineering. Potential topics include "reuse" and "reengineering" concepts and skills. Prerequisite: CIS 545 or consent of instructor.

CIS 550 Introduction to Data Mining and Its Applications (3 credits)

Presents an overview of big data concepts and computational methods in data mining with an emphasis on data mining applications. Topics include data exploration to detect patterns, clustering methods, decision trees and association rules. Prerequisite: Knoweldge of database systems, introductory statistics course and computer programming skills or consent of the instructor.

CIS 555 Machine Learning (3 credits)

Covers data analysis methods to recognize trends and patterns of big data. The emphasis will be on classification, regression and model fitting. Application areas such as healthcare, finance, game playing, marketing and internet fraud detection will be studied. Prerequisite: Introductory statistics and computer programming skills or consent of the instructor.

CIS 559 Data Mining and Digital Image Processing (3 credits)

Covers digital image processing computational methods to detect intricacy, edges, contrast and grey levels of digital images. Digital filtering, image boosting, noise recognition and image-to-data conversion methods will be covered in this course. Application areas that will be studied include biomedicine and finance. Prerequisite: CIS 550 or consent of the instructor.

CIS 584 Internship in Computer Science (1 - 3 credits)

Provides a supervised off-campus, field-based experience, in computer science, at an approved site specifically related to the career goal(s) of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. A maximum of three credit hours earned under the title of CIS 584 can be applied to the degree requirements. Prerequisite: successful completion of nine graduate credit hours with an overall GPAof 3.0. Offered on P/F basis.

CIS 585 Independent Study in Computer Science (1-3 credits)

Study in a specialized area, to be arranged according to the student need/interest and availability of instructor. Prerequisite: consent of program director.

CIS 590 Master Project (1 – 6 credits)

Research project conducted under the direction of major advisor. Students must take CIS 590 for at least 6 credit hours. Prerequisite: Successful completion of core courses

CIS 592: Master Thesis (1-6 credits)

Research on a thesis topic conducted under the direction of major advisor. Students must take CIS 592 for at least 6 credit hours. Prereq: Successful completion of core courses

CIS 594: Special Topics in Computer Science (3 credits)

Covers current and relevant topics not regularly covered in the set of required and elective courses for the MS in Computer Science degree. Prerequisite: Consent of the department chair

IDT 500 Foundations of Instructional Design Systems (3 credits)

Introduces students to the discipline of instructional design. Students learn to analyze professional development needs in educational and corporate environments and to translate those needs into the design and development of quality training opportunities. Students will be introduced to the elements of instructional design; needs analysis, task analysis, learner analysis, planning and creating instruction, and evaluation. FA

IDT 501 Processes of Instructional Design and Technology Systems (3 credits)

Provides students an opportunity to apply the instructional design principles studied in IDT 500. This course focuses on the design, development and assessment of instructional design products and on conducting formative and summative evaluations of the instructional design product. Prerequisite: IDT 500 SP

IDT 505 Teaching Technology and Learning Theory (3 credits)

Provides practical, effective ways to integrate technology resources and technology-based methods into instructional settings, both in the classroom and in corporate training settings. Topics include current theories of cognition and learning, cognitive load theory, and effective teaching practices for both traditional-age students and the adult learner. Emphasis is placed on using technology to produce a cognitive-active approach to learning and to design questioning strategies that develop critical thinking. Students connect theories of teaching and learning to the

use of technology in a variety of instructional settings. They learn to reflect on the use of instructional technology. Students develop professional alignments with national standards. FA

IDT 507 Instructional Technology Tools for the 21st Century (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. SU

IDT 515 Computer Applications for the Educator (3 credits)

Introduces the student to computer applications using Microsoft Office suite. The applications include Word, PowerPoint, Publisher, Excel, Publisher and online collaboration suites. The emphasis will be on the use of these applications in the educational environment. FA, SP, SU

IDT 525 Legal and Ethical Technology Issues (3 credits)

Introduces the ethical and legal issues related to the use of technology in instruction. Students will examine the current debates surrounding the integration of technology into the instructional process. They will study the issues of information and intellectual property, privacy in a digital environment, and accessibility and Universal Design. The relationship of individual, governmental and societal concerns in a constantly-changing electronic community will also be studied. SP

IDT 535 Instructional Games and Simulations (3 credits)

Provides and in-depth study of the theoretical and practical issues surrounding the use of games and simulations in learning environments. Methods and approaches for integrating existing games into learning environments and for developing new simulations and games around content will be researched, evaluated and developed. SP

IDT 540 Programming with C++ (3 credits)

Teaches structured programming design concepts using C++. Emphasizes programming to direct computer's actions in a structured manner. Prerequisite: Knowledge of operating system. FA

IDT 546 Industry Standard Software Authoring Tools (3 credits)

Provides students an opportunity to design and create software demonstrations, interactive simulations, branching scenarios, screencasts and interactive assessments for eLearning and mLearning content using industry standard software.

IDT 547 Robotics (3 credits)

Introduces students to the concepts, techniques and applications of robotics. Students will learn the basics of modeling, designing, planning, programming and controlling of robot systems. Students will learn to program a robot that can be used in their classes with their own students and how to teach the essentials of robotics to their students. SU

IDT 549 Programming in Java (3 credits)

Introduces students to the Java programming language in order to teach programming as a systematic discipline and as a problem-solving tool. Topics include fundamental concepts of object-oriented programming, encapsulation, inheritance and polymorphism, classes, objects, files and aggregation. Students in this course will learn how to teach the essentials of Java to their students.

IDT 560 Current Programming Languages (Scratch) (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

IDT 565 The Internet and the Web (3 credits)

Provides a survey of the four specializations within the Instructional Design and Technology program. Emphasis will be on creating Webpages using basic HTML and web-authoring programs. Students will begin the process of creating an ePortfolio that they build upon through the MS in IDT program.

IDT 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. FA

IDT 570 Emerging Technologies in Education

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. SU

IDT 572 Andriod Programming (3 credits)

Provides students with the fundamental knowledge and skills needed to design and build Andriod apps using the

most current Andriod programming platform. Students will complete multiple Andriod apps that run a real Andriod smartphone/tablet, starting from simpler ones to complex ones. Prerequisite: IDT 549

IDT 574 iOS Programming (3 credits)

Provides students with the fundamental knowledge and skills needed to design and build iOS apps using the most current iOS programming platform. Students will complete multiple iOS applications that run on iPhones/iPads, starting from simple ones to complex ones. Prerequsite: IDT 540

IDT 577 Research in Instructional Design and Technology (3 credits)

Introduces students to research in instructional design and technology (IDT). Students will investigate a variety of areas in which research in IDT takes place. Students will select topic(s) based on this original investigation and their own interests and perform a research study.

IDT 581 Video Design, Production, and Editing (3 credits)

Provides students the opportunity to learn design principles in digital video production. This is a project-based course where students practice all aspect of digital video production: storyboarding, capturing and editing their own graphics, video and audio multimedia assets using a variety of software. Project management and team collaboration will be practiced.

IDT 584 Internship in Instructional Design and Technology (3 credits)

Provides a supervised, off-campus, field-based experience at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment.

IDT 590 Current Topics in Instructional Design and Technology (3 credits)

Examines some of the current topics in IDT such as Accessibility and Universal Design, Learning Environments, and Project Management. Students will analyze issues affecting current and future implementations of instructional design. Current research on topics of IDT will be emphasized. SU

IDT 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

IDT 594 Special Topics in Instructional Design and Technology

Covers current and relevant topics not regularly covered in the set of required and elective courses for the MS in Instructional Design & Technology degree. Prereq: Completion of at least 12 semester hours and consent of department chair. Offered as needed.

IDT 595 Capstone Portfolio (3 credits)

Provides a framework for students to compile a capstone portfolio that will consist of three major components that will demonstrate the student's over-all knowledge, abilities, and progress throughout the master's degree process as well as a person reflection essay, and an assessment of the masters' program in Instructional Design and Technology.

RMD 500 Statistical Methods for Research (3 credits)

Exposure to a wide variety of descriptive and inferential statistics. Topics presented will include measure of central tendency and dispersion, t-tests, ANOVA, correlation and regression, non-parametric methods. Experimental design techniques such as blocking will be discussed. Reading and interpreting journal articles that use some of the methods from the course will be included. Use of a statistical software package is integrated into the course. Prerequisite: Competency in algebra. Some knowledge of basic statistical methods is helpful but not required. SP