

INSTRUCTIONAL TECHNOLOGY ED.D.

Degree: Doctor of Education

<https://www.towson.edu/coe/departments/edtech/grad/instructiontech/>

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The Doctor of Education (Ed.D.) degree in Instructional Technology will review applications twice per year, July 15th and November 1. The Ed.D. is based upon the understanding of education settings (schools and beyond) as learning communities immersed in a world of technology within which students are nurtured and challenged to meet the high expectations established for them; community leaders are engaged in these communities to support them; and teachers, supervisors and administrators must take the lead in integrating technology into these communities through continuous professional development. Thus, the program focuses on the development of instructional technology expertise to meet the present and future needs of technology integration in instruction across the educational spectrum.

This program is available to be taken fully online or face-to-face with courses offered in synchronous and asynchronous formats.

The objectives of the Ed.D. in Instructional Technology are to:

- Develop knowledge and skills in the theory, foundation and philosophy to employ instructional technology in a wide range of educational practice.
- Provide advanced skills and abilities for teachers and trainers who are innovative change agents for integrating technology into education and human resource development organizations.
- Acquire advanced skills in research, assessment and evaluation strategies in the applications of technology in education and training environments.
- Provide experiences for employing technology effectively in pre-K through 16 learning environments to promote reform and enhance learning.
- Develop knowledge, skills and abilities for teaching via online and digital environments to create and ensure high-quality and effective learning communities.
- Create skilled and highly capable professionals who are able to lead educational organizations to make effective decisions about the appropriate uses of technology in learning and teaching.

Admission Requirements

- Successful completion of a master's degree in instructional technology or related field from a regionally accredited college or university**.
- An overall GPA of 3.00 or above for undergraduate degree work is required. Graduate work should be at a GPA level of 3.75, though GPAs as low as 3.40 can be considered.

- For international students, a TOEFL score of 600 or above is required.
- Interview may be required upon the request of the Admissions Committee of the Instructional Technology faculty.

Please complete the online application, including the following:

- Letter of intent describing professional goals in seeking the degree, areas of interest/specialization and why the candidate sees the program as a good fit for him/her.
- GRE general scores in analytic, quantitative and verbal areas.
- Letters of recommendation from two professionals, including one from a professional familiar with the academic work of the candidate. **Only letters on organizational letterhead will be accepted.**
- Academic writing sample (APA style)
- Digital learning sample and reflection paper that demonstrates the integration of technology into the applicant's field of expertise (such as instruction or training)

Application materials are reviewed by the admission committee using a competitive review process. In reviewing applications, the committee will seek evidence of prerequisite knowledge in the following areas: instructional design, educational psychology, research design and statistics. Students who do not have this prerequisite knowledge may be asked to complete one unit-directed reading activity to improve background knowledge and help prepare for doctoral course work.

A limited number of students are accepted into the doctoral program each year in order to maintain a low student-to-faculty ratio. Application materials must be submitted in full by the following deadlines for consideration of acceptance for fall and spring terms:

- Fall admission: July 15
- Spring admission: November 1

Non-immigrant International Students

Program Enrollment: F-1 and J-1 students are required to be enrolled full-time. The majority of their classes must be in-person and on campus. See the list of programs that satisfy these requirements, and contact the International Student and Scholars Office with questions.

Admission Procedures: See additional information regarding Graduate Admission policies and International Graduate Application online.

See **Exceptions to Policy in Graduate Admissions.

Degree Requirements

The doctoral program requires 63 graduate units beyond the master's degree. Course work in the program includes 15 units in the program core, 9 units in research methodology, 18 units of elective course work, 9 units of doctoral seminar and 12 units of dissertation research.

After completing all course work and prior to beginning the dissertation, students must pass a comprehensive written exam and/or submit a portfolio based upon the core courses and electives. Upon passing/approval, students will be admitted to the dissertation sequence.

Code	Title	Units
Required Courses		
ISTC 700	ASSESSMENT IN INSTRUCTIONAL TECHNOLOGY	3

ISTC 707	LEARNING ENVIRONMENTS IN A DIGITAL AGE	3
ISTC 709	LEGAL AND ETHICAL ISSUES IN INSTRUCTIONAL TECHNOLOGY	3
ISTC 711	INNOVATION, CHANGE AND ORGANIZATIONAL STRUCTURES	3
ISTC 741	RESEARCH FOUNDATIONS OF INSTRUCTIONAL TECHNOLOGY	3

Research Methodology Courses

EDUC 789	RESEARCH METHODS, DESIGN, AND ANALYSIS	3
EDUC 790	ADVANCED MEASUREMENTS AND STATISTICS IN EDUCATION	3
EDUC 791	ADVANCED QUALITATIVE RESEARCH METHODS	3

Seminars and Internship

ISTC 780	SEMINAR I: INVESTIGATING AND EVALUATING RESEARCH IN INSTRUCTIONAL TECHNOLOGY	3
ISTC 782	INVESTIGATING AND EVALUATING RESEARCH IN ISTC II	3
ISTC 797	GRADUATE INTERNSHIP IN INSTRUCTIONAL TECHNOLOGY	3

Dissertation Research

ISTC 998	INSTRUCTIONAL TECHNOLOGY DISSERTATION	12
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Elective Courses

Selection of elective courses must be made with the advice and approval of the student's doctoral adviser. All elective units may be in instructional technology. With prior permission, 12 units may be taken outside the College of Education. All elective course work must be at the 600 level or higher. With approval, courses completed as part of a Towson University C.A.S. program may be applied.	18
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Total Units **63**

1. Students will develop the ability to implement instructional technology in a wide range of educational settings, based on their knowledge of the theory, foundation and philosophy of the discipline, as well as their skills in synthesizing such information.
2. Students will enhance their skills and abilities for integrating technology into education and human resource development organizations.
3. Students will acquire advanced skills in research, assessments, and evaluation strategies in the applications of technology in education and training environments.
4. Students will, through experience, improve their ability to employ technology effectively in Pre-K through 16 learning environments in order to promote reform and enhance learning.
5. Students will become highly skilled and capable professionals who are able to lead educational organizations into making effective decisions about the appropriate uses of technology in learning and teaching.

Courses**ISTC 501 INTEGRATING INSTRUCTIONAL TECHNOLOGY (3)**

Examines operations, applications, and affordances of technologies for learning and teaching. Offers hands-on experience in integrating learning technology into classroom activities. Critically examines strategies that use a variety of technology tools to create learning environments that actively engage students in projects where technology tools enhance the learning process. Laboratory experiences are provided in the operation of instructional hardware and software. Lab/Class fee will be assessed.

ISTC 541 FOUNDATIONS IN LEARNING TECHNOLOGY AND DESIGN (3)

Exploration of conceptual and theoretical foundations of learning design and application in learning technologies. An Examination of a broad range of current learning design research and theory, the role of learning technologies, and their affordances to create innovative learning solutions to performance problems.

ISTC 601 SCHOOL LIBRARY MEDIA ADMINISTRATION (3)

The evaluation, planning, and policy development for the school library media center. Prerequisites: Graduate standing and completion of all level one and two school library media courses.

ISTC 603 FOUNDATIONS OF DISTANCE EDUCATION (3)

Analysis of the history and evolution of distance education. Examination of theories, principles, learning design models, and technologies used in teaching and learning of distance education and e-learning. Opportunities to apply conceptual frameworks, instructional design guidelines, and principles, current technologies in planning, development, and implementation of distance education.

ISTC 605 E-LEARNING DESIGN AND DEVELOPMENT (3)

Application of learning design principles and research-based best practices for distance education and online learning in designing, developing, and evaluating e-learning environments for a wide range of learners. A variety of online tools and applications will be evaluated and used to support learning. Prerequisite: ISTC 603 or equivalent.

ISTC 615 COLLECTION DEVELOPMENT (3)

Concepts, processes, guidelines and resources for the development of a high quality school library media center collection. Prerequisite: Graduate standing.

ISTC 633 VISUAL DESIGN AND DEVELOPMENT (3)

Application of visual design principles and introduction to elements of graphic and user interface design. Examination of how various elements of graphic and interface design work together and how learners interact with digital materials. Prerequisites: ISTC 667 and ISTC 655.

ISTC 651 INFORMATION LITERACY AND ACCESS (3)

Access and evaluation of information sources relevant to school library media centers. Prerequisites: Graduate standing and completion of level one school library media courses.

ISTC 653 THE ORGANIZATION OF KNOWLEDGE (3)

The organization of knowledge in all formats including cataloging, subject analysis and bibliographic control. Prerequisite: Graduate standing.

ISTC 655 DEVELOPING DIGITAL MULTIMEDIA MATERIALS FOR LEARNING DESIGN (3)

Design and develop digital multimedia learning materials for various learning environments. Specifically, use advanced authoring technology applications. Students apply basic principles of visual design and gain practical experience with text, graphics, and web design for the creation of interactive learning materials.

ISTC 663 INTRODUCTION TO LEARNING SCIENCES (3)

Introduction to influential and powerful ideas in learning sciences. Examination of unique research approaches used by learning scientists to study and to design new learning environments. Study of the nature of knowledge, new research on expert activity and underlying explanations and causes of how to solve complex, real-world problems.

ISTC 667 INSTRUCTIONAL DESIGN AND DEVELOPMENT (3)

A hands-on, project-based approach to the analysis, design, development, and evaluation of instructional solutions to address performance gaps. Includes instructional design, content development, configuration and testing of learning environments, and use of appropriate current technologies.

ISTC 674 SPECIAL TOPICS IN INSTRUCTIONAL TECHNOLOGIES (3-6)

Topics selected from the instructional technology field which are innovative and of immediate concern to existing instructional needs. May be repeated to a maximum of 6 units with no topic repeated. Prerequisite: bachelor's degree.

ISTC 685 RESEARCH IN INSTRUCTIONAL TECHNOLOGY (3)

Application and examination of elements of research design. Students will write a research proposal applying accepted procedures in qualitative and quantitative inquiry in the field of instructional technology. Prerequisites: 12 units of ISTC courses at 600-700 level.

ISTC 687 COMPUTER-BASED INSTRUCTION (3)

The relationship between programmed instruction and computer-assisted instruction is examined. Students are required to demonstrate competencies in the design and production of computer-assisted instruction. Prerequisite: ISTC 541 or equivalent.

ISTC 688 AUGMENTED AND VIRTUAL REALITY LEARNING & DESIGN (3)

Foundational understanding of VR (Virtual Reality), MR (Mixed Reality), and AR (Augmented Reality) technologies. Students will learn how to design and implement immersive 3D content for AR and VR environments that provides rich user experiences. The industry-standard tools will be used for developing successful interactive VR/AR software. Prerequisites: completion of core level 1 and ISTC 767.

ISTC 691 DIRECT READINGS IN INSTRUCTIONAL TECHNOLOGY (1-4)

Independent readings and research in selected areas of instructional technology. Prerequisite: consent of program director.

ISTC 692 DIRECTED READINGS IN INSTRUCTIONAL TECHNOLOGY (1-4)

Independent readings and research in selected areas of instructional technology. May be repeated for a maximum of 4 units. Prerequisite: consent of program director.

ISTC 693 DIRECTED READINGS IN INSTRUCTIONAL TECHNOLOGY (1-4)

Independent readings and research in selected areas of instructional technology. May be repeated for a maximum of 4 units. Prerequisite: consent of program director.

ISTC 694 DIRECTED READINGS IN INSTRUCTIONAL TECHNOLOGY (1-4)

Independent readings and research in selected areas of instructional technology. May be repeated for a maximum of 4 units. Prerequisites: Consent of program director.

ISTC 695 INDEPENDENT STUDY IN INSTRUCTIONAL TECHNOLOGY (1-4)

Independent readings and research in selected areas of instructional technology. Prerequisite: Consent of chairperson or program director.

ISTC 700 ASSESSMENT IN INSTRUCTIONAL TECHNOLOGY (3)

Contemporary theories and methodologies of assessment in instructional technology, including terminology and concepts, measurement principles and assessment instruments, with emphasis upon assessment of technology learning, technology integration, technology attitudes, performance, educational software designs and management of technology resource. Prerequisites: Admission to doctoral program or completion of level I: core sequence.

ISTC 702 EDUCATIONAL LEADERSHIP AND TECHNOLOGY (3)

Explores current research and theory related to technology policy, planning and leadership in education settings. Focus will include development of technology plans at the school district and state levels. Prerequisite: Admission to doctoral program or completion of level I: core sequence.

ISTC 705 ADVANCED WEB APPLICATIONS IN EDUCATION (3)

Includes contemporary theories, methodologies and advanced techniques of using Web applications in the field of education and related disciplines. Course covers application of using scripting language to produce dynamic Web pages for educational purposes. Current Web design software and graphing tools will be used. An online learning environment using course management tools will be developed. Prerequisites: Admission to doctoral program or completion of level I: core sequence.

ISTC 707 LEARNING ENVIRONMENTS IN A DIGITAL AGE (3)

Contemporary learning theory will be used to design and evaluate interactive learning environments that reflect the qualities of active, constructive, collaborative, intentional, complex, contextual, conversational and reflective learning. Prerequisites: Admission to doctoral program or completion of level I: core sequence.

ISTC 709 LEGAL AND ETHICAL ISSUES IN INSTRUCTIONAL TECHNOLOGY (3)

Legal, ethical and intellectual property issues related to the use of technology in education. Analysis of case studies related to technology use policies for education and human resource organizations. Prerequisites: Successful completion of 15 credits of graduate courses in instructional technology or education. Prerequisites: Admission to doctoral program or completion of level I: core sequence.

ISTC 711 INNOVATION, CHANGE AND ORGANIZATIONAL STRUCTURES (3)

Planning and management of successful technology innovations and change through training, professional development, and technological projects in public or private schools as well as government, non-profit and for-profit organizations. Topical areas include planning and developing technology innovation projects, evaluating and analyzing organizations, analyzing capacity and readiness for a new technology project, organizing and managing human resources and support systems, scheduling, budgeting, team structures, defining project requirements, and quality assurance. Prerequisites: completion of level 1 Core (ISTC 663 or EDUC 755 and ISTC 541, ISTC 655, ISTC 667), admission to doctoral program, or completion of ISTC 715.

ISTC 715 PROJECT MANAGEMENT (3)

Foundational understanding of project management concepts, principles, skills, tools, and techniques necessary to effectively manage projects. Key components of project management, including integration, scope, time, cost, quality, human resource consideration, communications, risk, and procurement management. Prerequisite: ISTC 667.

ISTC 718 CRITICAL PERSPECTIVES OF TECHNOLOGY IN EDUCATION (3)

A reflective view of the moral, historical, social, and political views of technology in education. Students will examine technology's broader impact on society. The content to be covered by this course will not overlap with any other courses currently offered by the College of Education. Prerequisites: Admission to doctoral program or completion of level I: core sequence.

ISTC 729 SIMULATION AND GAME-BASED LEARNING AND DESIGN (3)

Examination of theories and practices of games and simulations as learning technologies. Emphasis is placed on the process of designing and selecting educational games, and simulations. including issues associated with assessment and implementation will be addressed. Prerequisites: ISTC 667 and ISTC 655 are recommended.

ISTC 731 THEORY AND PRACTICE FOR INTEGRATING DIGITAL RESOURCES INTO LEARNING AND TEACHING (3)

Focuses on current theoretical perspectives on learning that underlies decisions about technology integration in diverse educational settings. Students will examine recent technological innovations surrounding technology integration for teaching and learning; analyze effective design of computer-based instructional materials; create and evaluate case studies relating to technology integration, and critically examine their own personal and professional values as an aspect of their work as educator and instructional designers. Prerequisites: Admission to doctoral program or completion of level I: core sequence.

ISTC 735 TECHNOLOGY, LEARNING, AND DESIGN (3)

Focuses on the design and implementation of effective instruction in the 21st Century classroom. Studies the practical application of current and emerging technologies, one to one device learning techniques for students and teachers, and explores adult uses of learning technology. Culminates in a guided technology use self-reflection activity. Prerequisites: ISTC 541, ISTC 667, ISTC 663.

ISTC 741 RESEARCH FOUNDATIONS OF INSTRUCTIONAL TECHNOLOGY (3)

This seminar course will focus on examining philosophies and discourse upon which the field of instructional technology is built. This course will examine historical research, organizational and governmental standards, alternative and critical theories, and paradigms and philosophies of learning, design and technology. Prerequisite: Admission to doctoral program or completion of level I: core sequence.

ISTC 767 ADVANCED INSTRUCTIONAL DESIGN AND DEVELOPMENT (3)

Intended for those who already have an existing foundation in the basic principles of instructional design and development of learning solutions. Analysis of a variety of advanced instructional design models. Provides an opportunity for creating, implementing, managing and evaluating digital learning solutions. Prerequisites: ISTC 667 and ISTC 655 or admission to Doctoral program.

ISTC 780 SEMINAR I: INVESTIGATING AND EVALUATING RESEARCH IN INSTRUCTIONAL TECHNOLOGY (3)

This seminar course will focus on a critical review and evaluation of current research findings and methodology. The emphasis is upon the development of a critical perspective of ongoing research in the field of instructional technology and related specialization areas. The intent of the course is that doctoral students will develop a review of literature related to their dissertation proposal. Open only to students who have completed the required doctoral core courses and have been admitted to the ISTC doctoral program.

ISTC 782 INVESTIGATING AND EVALUATING RESEARCH IN ISTC II (3)

This seminar course will focus on a critical review and evaluation of current research findings and methodology. The emphasis is upon the development of critical perspective of ongoing research in the field of instructional technology and related specialization areas. The intent of this course is that doctoral student will develop products related to their dissertation proposal. This course may be repeated for a maximum of 6 credits. Prerequisites: ISTC 780.

ISTC 787 INSTRUCTIONAL TECHNOLOGY CAPSTONE (3)

Opportunity to demonstrate mastery of required coursework by designing, developing, implementing, or evaluating technology-mediated learning solutions. Proposal and completion of a comprehensive technology-intensive project or portfolio is required. Prerequisites: 21 units in ISTC program.

ISTC 789 PRACTICUM AND PORTFOLIO IN SCHOOL LIBRARY MEDIA (3-6)

Students serve under the supervision of a school library media center director. Students present graduate portfolios to level one students and faculty in school library media. Prerequisite: completion of all level one and level two school library media courses.

ISTC 797 GRADUATE INTERNSHIP IN INSTRUCTIONAL TECHNOLOGY (3)

Individually supervised field experience in a setting that provides direct experience with the design, development, implementation, or evaluation of technology-mediated learning experiences. Proposal and completion of a technology comprehensive project are required. Prerequisite: 21 units in ISTC Master's or Doctoral program.

ISTC 897 INSTRUCTIONAL TECHNOLOGY THESIS (6)

An original investigation, using research method and design, of a research problem. Credit granted after thesis accepted. Prerequisite: Consent of chairperson.

ISTC 898 INSTRUCTIONAL TECHNOLOGY THESIS (3)

An original investigation, using research method and design, of a research problem. Taken over two consecutive semesters. Credit granted after thesis accepted. Prerequisite: The previous course, ISTC 897, taken over two consecutive terms.

ISTC 899 THESIS CONTINUUM (1)

Continuation of thesis research. Prerequisite: ISTC 898.

ISTC 998 INSTRUCTIONAL TECHNOLOGY DISSERTATION (1-9)

An original research investigation using research literature, methods, analysis, and design. Prerequisite: consent of advisor.

ISTC 999 DISSERTATION CONTINUUM (1)

Continuing work on dissertation after completion of basic dissertation credits. May be repeated as necessary.