LEHIGH
UNIVERSITY®

COLLEGE OF EDUCATION
Programs in Teaching, Learning, and Technology

DOCTORATE IN LEARNING SCIENCES AND TECHNOLOGY

Increasingly, technology permeates all aspects of society. As its influence increases, it affects what we can do, how we do it, and how we interact with one another. For instance, computer-mediated communication, once rare and now so pervasive in society, has had a profound effect on social and cultural interaction. Clearly, technology also affects education. Computer-supported collaborative learning environments, three-dimensional workspaces, and electronic performance support systems are but a few of the ways in which technology facilitates new ways of communicating and learning. At the same time, such uses of technology make new demands on educators and learners and require that we learn more about how we may apply what we know about cognition, social learning, and information processing to such settings and investigate new applications of existing knowledge.

The Learning Sciences and Technology (LST) Ph.D. program focuses on the systematic study of these psychological, social, and technological processes that support learning. This incorporates three major components: socio-cultural context, cognition, and designing for learning. We seek to identify, describe, and apply what we know about learning from two distinctive —but highly related— perspectives: human and technological. Our investigations recognize the importance of the socio-cultural context of learning and the professional and personal needs of teachers and learners, whether they are face-to-face or separated by many miles and time zones. We see the human and the technological as inextricably interwoven in designing for learning and seek to explore ways to make the most of what the past has shown us while addressing the challenges the future poses. Using a multidisciplinary, integrative research model, the program engages in active pursuit of ways to enhance what we know about how learning occurs in diverse settings, including traditional ones (like school classrooms and business training programs) and less traditional ones (like online museums and virtual worlds).

The LST program employs a scientist/practitioner model of learning. That is, research is not separate from application or practice. Our doctoral students collaborate closely with faculty to generate new theories and classification systems, innovative curricula that make the most of promising technologies, authentic approaches to assessing learning, and a wide range of creative methods of teaching and learning in a global world highly interconnected by technology.

In keeping with the scientist/practitioner model, our doctoral students learn through innovative approaches, including modular strategies for curriculum delivery, online synchronous and asynchronous environments, and a wide range of other technology-enhanced designs for learning.

The College of Education is a nationally ranked graduate school at Lehigh University, a private institution located in the Lehigh Valley between Philadelphia and New York City. Lehigh actively recruits a diverse student body and welcomes inquiries from all interested students.

To learn more about the LST degree program, visit www.lehigh.edu/education/tlt or contact the TLT Program Director (TLTProgram@Lehigh.edu 610-758-3230).

Application

The LST program admits students at both the post-bachelor's level and the post-master's level. The degree program for students admitted with a bachelor's degree differs in duration and foundational coursework from that of students admitted post-master's. Applicants may come from a wide range of prior academic backgrounds. Admitted students may, however, be required to take additional courses to remediate specific academic deficiencies.

Admission is from a competitive pool with admission consideration once per year. Completed applications must be submitted no later than close-of-business on February 1.

Elements of a Complete Application

To be considered for admission, applicants to the LST doctoral program must submit all of the following:

1. Completed application form.
2. GRE scores (current within the last 5 years).
3. At least two letters of recommendation.
4. Official transcripts from all colleges or universities attended.

Please note: Transcripts from a foreign institution MUST be evaluated for equivalency before being sent to Lehigh University. Credential evaluation means converting foreign academic credentials into their U.S. educational equivalents. By converting your educational qualifications into their U.S. equivalents, the evaluation allows academic institutions or employers in the U.S. to understand them. Lehigh University does not promote these services; we inform you of their existence. Please request that these services mail you a course-by-course evaluation converted to U.S. credits and grades.

- World Education Services http://www.wes.org/
- Educational Credentials Evaluators, Inc. http://www.ece.org/
- Global Credential Evaluators, Inc. http://www.gcevaluators.com

5. A statement that discusses the following:
   a. Why the applicant believes Lehigh's LST program is the best place for him/her.
   b. What they hope to be able to do with the degree when they finish.
   c. A clearly identified research interest and a clear linkage between that interest and the research agenda (research, publications, presentations) of a specific faculty member in the Teaching, Learning, and Technology Program.
6. Copies of two extended student papers or publications demonstrating strong writing ability and the potential to develop persuasive written arguments in English.
7. Foreign students must also supply TOEFL (Test of English as a Foreign Language) scores.

Admissions Interview

Applicants may be asked to come to campus for a face-to-face interview or to participate in a conference call or other electronically mediated interview where an in-person interview is impractical.

LST Curriculum

All LST students take a common core of 15 credits of coursework, a minimum of 48 credits past the master's or 72 credits past the bachelor's degree, and a combination of cross-discipline credits and concentration credits.

The common 15-credit LST Core consists of:

- LST 401. Overview of Learning Sciences, and Technology (3)
- LST 403. Learning Environments (3)
- Qualitative research methods course (for example, Educ 405) (3)
- Statistics/quantitative research methods course (for example, Educ 408, 409, 410) (3)
- Diversity/multicultural perspectives course (for example, Educ 471) (3)

As noted above, other requirements differ for those admitted with a bachelor's and those admitted with a master's degree. This is detailed below.

For those admitted with a bachelor's degree

Total of 72 credits past bachelor's (minimum), including:

- 15 credits of LST Core coursework
- 24 credits of cross-discipline coursework or directed research
- Successful completion of a Qualifying Project
- 33 credits of concentration coursework or research credits (requirements vary by concentration, qualifying and dissertation credits included)
- Successful completion of Comprehensive Examinations
- Dissertation proposal, completion, and successful defense

For those admitted with a master's degree

Total of 48 credits past the master's (minimum) [42-credit minimum if applicable master's from Lehigh], including:

- 15 credits of required foundational coursework
- 9 credits of cross-discipline coursework or directed research
- Successful completion of a Qualifying Project
- 24 credits of concentration coursework or directed research (requirements vary by concentration, qualifying and dissertation credits included)
- Successful completion of Comprehensive Examinations
- Dissertation proposal, completion, and successful defense

There currently is only one concentration in *Teaching, Learning, and Technology*. The concentration requirements are detailed below:

For those admitted with a BACHELOR'S degree (72 credits)		
LST Foundational Coursework (15)	**TL&T cross-discipline credits (24)**	**TL&T concentration credits (33)**
LST 401. Overview of LST (3)	TLT 406. Tools for Teaching & Learning (3)	TLT 480. Curriculum Design and Innovation. (3)
LST 403. Designing Learning Environments (3)	21 credits from the cross-discipline course list	Statistics course (Educ 409, 410, 411, or equivalent) (3)
Educ 405. Qualitative Research Methods (3)		Research methods / Statistics course elective (3)
Educ 408. Introduction to Statistics [or equivalent] (3)		TLT 450. Technology in School Settings: [Subtitle] (6 total)
		TLT 458. Website and Resource Development for Learning (3)
Educ 471. (CPsy 471) Diversity and Multicultural Issues [or equivalent] (3)		Field experience (Educ 493, 494, or 495), additional topic seminars (TLT 450), Qualifying Project (Educ 486), Dissertation proposal or maintenance of candidacy, or electives (15 total)

For those admitted with a MASTER'S degree (48 credits)		
LST Foundational Coursework (15)	**TL&T cross-discipline credits (9)**	**TL&T concentration credits (24)**
LST 401. Overview of LST (3)	TLT 406. Tools for Teaching & Learning (3)	TLT 480. Curriculum Design and Innovation. (3)
LST 403. Designing Learning Environments (3)	6 credits from the cross-discipline course list	Statistics course (Educ 409, 410, 411, or equivalent) (3)
Educ 405. Qualitative Research Methods (3)		Research methods / Statistics course elective (3)
Educ 408. Introduction to Statistics [or equivalent] (3)		TLT 450. Technology in School Settings: [Subtitle] (3 total)
		TLT 458. Website and Resource Development for Learning (3)
Educ 471. (CPsy 471) Diversity and Multicultural Issues [or equivalent] (3)		Field experience (Educ 493, 494, or 495), additional topic seminars (TLT 450), Qualifying Project (Educ 486), Dissertation proposal or maintenance of candidacy, or electives (9 total)

Clearances

Depending upon the specific courses you choose or research activities you engage in while pursuing your master's degree program, it may become necessary to obtain proper school placement clearances in accordance with Pennsylvania Department of Education regulations. See the TLT website for more information.

Qualifying Project

The qualifying project is designed to demonstrate that a currently enrolled LST student is likely later to be capable of completing a high quality dissertation in a timely fashion. This project requires students to apply the same types of research and writing skills they will need to complete their dissertations and typically takes the form of a small empirical pilot study on the topic of the intended dissertation. This pilot enables the student to answer some question or set of questions that help in the design of the later dissertation.

The Qualifying Project is completed under the direction of a faculty member in the concentration and its success is judged by a committee composed of at least three members. Once a student completes the Qualifying Project satisfactorily, he or she is reclassified from *graduate student* to *doctoral student* and moves on to complete study in the concentration.

Comprehensive Examinations

Comprehensive Examinations may be either written or oral, or both, and are tailored to the individual student's program of study. Comprehensive Examinations are designed to measure both mastery within the concentration and mastery across the LST

field (as acquired in the LST Core and in other cross-discipline courses and experiences).

Student success on the Comprehensive Examination is judged by a committee of at least three members. Once a student completes these examinations satisfactorily, he or she moves on to dissertation proposal, completion, and defense.

Frequently Asked Questions

How much of the doctoral program is class-based and how much is independent research?

As shown in the table, above, you will take about 39 credits of coursework in addition to your independent qualifying research project, comprehensive examination preparation, and dissertation project.

I live some distance away and am hoping to continue working while I pursue my doctorate. Do you have online classes? When do your classes meet?

With the exception of an occasional course or two, this is not an online program, so most of the classes you take will meet F2F on campus. However, those meetings are only once per week for 3 hours from either 4-7:00 or 7-10:00 p.m. to accommodate folks who are working full time.

How much room is there to customize one's program of study?

Your coursework will be individualized according to the cross-disciplinary classes you choose to take. Also, many of your course assignments will be project based, which will allow you to apply concepts you are learning to your particular area of interest. And your choice of research topic and projects are also up to you --in consultation with your faculty adviser and within the broader context of Learning Sciences and Technology, of course.

How long does the doctoral program generally take to complete and will working stretch out my time-to-completion a lot longer?

Part-time students who are working full time typically take 3 credits per "regular semester" (Fall/Spring) and 3 credits each of the two summer sessions for a total of 12 credits per year. Full time students take 9 credits per regular semester and 3 credits each summer session for a total of 24 credits per year. So, yes, continuing to work will stretch out time-to-completion for your doctoral program.

The total amount of time it takes to finish, however, is contingent upon how many credits you are able to take each year and how long it takes you to get through the qualifier, comps, and dissertation. There are a lot of variables involved here… so, as you might imagine, time-to-completion for a doctoral program varies widely among individuals. That said, the university does place a 7-year limit from start to finish.

How many students are in the program?

The number of students in our doctoral program is intentionally limited by the number faculty we have available to mentor them through their research projects. Therefore, we currently keep enrollments at approximately 20-25 students.

Are there graduate assistantships available?

Yes, we typically are able to provide assistantships for full-time students who are interested. Those positions are usually to work on some sort of grant-funded project, so we are often looking for students who have some coursework under their belts first.

How "techie" do I need to be coming into the program?

The LST doctoral program coursework assumes that students coming into the program are very interested in technology and have a basic level of technology skill. This doctoral program then builds on those interests/skills and expects students to be developing their own research agenda that explores how technology's affordances might facilitate teaching and learning processes.

I'm not sure what I want to do, but am very interested in technology and student learning/teaching. Is that enough?

High interest is good, but keep in mind that Lehigh's LST Ph.D. program is designed to prepare *researchers* in the field of Learning Sciences and Technology for academic jobs... most likely at research-intensive institutions. This is not an applied/practitioner's degree program, like our master's programs and many Ed.D. programs would be. Before applying, you'll want to be sure your ultimate goals are a good match with the intended outcome of this curriculum. Also, as you'll see on the second page of this brochure, your application will need to include your "clearly indentified research interest" and a linkage between that interest and our faculty members' current research programs... So, you'll want to be pretty clear about this before applying. Our faculty will be happy to discuss this with you further.

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