**PhD Program Area of Study (PAS) in Learning, Design, and Technology (LD&T)**

**Department of Teacher Education and Learning Sciences (TELS)**

**Total Credit Hours = 60** (minimum)

**College Core Courses minimum of 21 hours**

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| **Scholar Leader Required Courses** | 6 hours |
| Scholar Leader 1*:* Diversity and Equity in Schools and Communities | 3 |
| Scholar Leader 2: Systemic Change in Education and Society | 3 |
| **College Research Methods** | 15 hours |
| ED 710: Applied Quantitative Methods in Education, or its equivalent | 3 |
| ED 730:  Introduction to Qualitative Research in Education, or its equivalent | 3 |
| ED 711: Applied Quantitative Methods in Education II OR  ED 731: Advanced Qualitative Research and Data Analysis in Education OR  ED 750: Mixed Methods Research in Education | 3 |
| Two more advanced research methods courses taken from the following:   * ED 711 Applied Quantitative Methods in Education II * ED 731 Advanced Qualitative Research and Data Analysis in Education * ED 750 Mixed Methods Research in Education * ED 712 Survey Methods in Educational Research * ED 795 Special Topics in Education Research * Courses in the Department of Statistics or Psychology at the 500 level or above | 6 |

**Department Core Seminars minimum of 6 hours**

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| **Teacher Education and Learning Sciences (TELS) Required Seminars** | 6 hours |
| ECI 709: Special Problems, Seminar in Teacher Education | 3 |
| ECI 709: Special Problems, Seminar in Learning Sciences | 3 |

**Learning, Design, and Technology (LD&T) Courses minimum of 24 hours**

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| **LD&T Learning Theories and Processes Strand: (choose \*ECI 716--required, and 1 other)** | 6 hours |
| ECI 517 Theoretical Foundations of Advanced Learning Environments  ECI 700 Curriculum Theory and Development  ECI 716 Design & Evaluation of Instructional Materials\*  ECI 719 Special Problems LD&T: Comp-Supp Collab Lrng: Theories, Models & Processes  ECI 719 Special Problems LD&T: Informal After-School Technology Environments  EDP 704 Theories and Research in Educational Psychology  EDP 723 Motivation in Education  PSY 710 Cognition and Learning Technologies | 6 |

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| **LD&T Specialization Areas: (choose 1 specialization area, 3-4 courses, or consult with advisor on mixing across specializations†)** | 12 hours |
| *Distance Learning*  ECI 719 Special Problems LD&T: Teaching & Learning at a Distance  ECI 515 Online Collaborations in Education  EAC 539 Teaching in the Online Environment  *Game/Educational Software Design*  ECI 719 Special Problems LD&T: Game-Based Learning  ECI 719 Special Problems LD&T: Modeling, Simulation, & Games for Complex Problem Solving  EAC 595 Special Topics: Game-Based Learning Design  ECI 519/CSC 591 Special Topics in CS: Serious Games CSC 591 Special Topics in CS: Machine Learning for User-Adaptive Systems  *Digital Media Design for Learning*  ECI 513 Teaching and Learning with Digital Video  ECI 514 Multimedia Design & Apps in Instruction  ECI 512 Emerging Technologies for Teaching & Learning--Mobile Learning  *Technology in the Disciplines*  EMS 573 Technology Tools for Science Teaching EMS 580 Teaching Mathematics with Technology EMS 581 Advanced Applications of Technology in Mathematics Education  ECI 519 Integrating Writing and Technology  ECI 546 New Literacies and Media  FL 506 Instructional Technology in Foreign Language Education  *Instructional Design/Training* EAC 580 Designing Instructional Systems in Training & Development EAC 581 Advanced Instructional Design in Training and Development EAC 585 Integrating Technology into Training Programs  EAC 731 Technology in Adult, Higher, and Human Resource Education | 12 |

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| **LD&T Digital-Applied Research Methods Strand: (choose 2 courses˘)** | 6 hours |
| ECI 719 Special Problems LD&T: Design-Based Research  ECI 719 Special Problems LD&T: Learning Analytics  ECI 719 Special Problems LD&T: User-Exper. Research & Meth for Eductl. Software  ECI 502 Continuous Improvement of School Technology Initiatives--Evaluation  ECI 652 Field-Based Applications of Digital Learning & Teaching--Action Research  EMS 792 Special Topics in Math: Digital Learning Systems & Agile Methodologies  CSC 591 Special Topics in CS: Educational Data Mining | 6 |

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| **Independent Study Strand: (optional)**  These optional courses are selected with advisor approval and can substitute for some of the 24 credit hours in the Learning, Design, & Technology cognate areas. | 0 hours |
| ECI 830 Independent Study in Curriculum and Instruction  ECI 840 Practicum in Curriculum and Instruction  ECI 880 Directed Study in Curriculum and Instruction  ECI 885 Doctoral Supervised Teaching  ECI 892 Research Projects In Curriculum and Instruction  ECI 893 Doctoral Supervised Research | 0 |

**Dissertation Research minimum of 9 hours**

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| ECI 895 Doctoral Dissertation Research | 9 |

**NOTE**: For doctoral students either part-time or full-time who are working on their dissertation.

Writing the dissertation requires a major commitment of time and effort on both the part of the doctoral student and the faculty advisor. There should be consultation between the student and the dissertation chair about what is expected to be accomplished, and how much time is to be invested before the student registers. The College of Education strongly recommends that students who are registering for dissertation research (895) or preparation (899) register for at least 3 semester hours per semester, when appropriate.

**Other Course Substitutions**

With advisor approval, students may be able to substitute other technology-focused courses at the university for a course in this curriculum display. Our students may not be eligible to take all of the listed courses; consult with the individual department and instructor offering the course before asking for a substitute.

*\*Other Learning Theories and Processes Courses*

EAC 559 The Adult Learner

PSY 508 Cognitive Processes

PSY 525 Introduction to Cognitive Science

COM 561 Human Communication Theory

*†Other Specialization Courses*

COM 528 Communication Culture and Technology

COM 537 Gaming and Social Networks

COM 547 Mobile Technologies and Social Practices

CSC 554 Human-Computer Interaction

GD 571 Design as a Cognitive Artifact

GD 573 New Information Environments

HI 585 History of American Technology

HI 589 Interpretation in Historic Sites and Parks

HI 591 Museum Studies

TED 530 Foundations for Teaching Technology

*˘Other Digital-Applied Research Methods Courses*

COM 543 Visual Content Analysis