LEARNING SCIENCES (LRN_SCI)

LRN_SCI 401-0 Knowledge Representation for the Learning Sciences (1 Unit)
Theoretical and methodological techniques for knowledge representation, primarily as practiced by cognitive scientists. Application of these techniques to issues of learning that are of interest to researchers in the learning sciences.

LRN_SCI 402-0 Social Dimensions of Teaching & Learning (1 Unit)
Students' relationships with one another and with teachers in school and nonschool settings. Implications for classroom instruction of social learning theory, student diversity, classroom climate, cooperative and competitive goal structures, and processes of attribution and achievement motivation.

LRN_SCI 403-0 Foundations of the Learning Science (1 Unit)
Cognitive and social science theories of how people learn to understand, reason, and solve problems. Implications for the design of classroom learning environments; learning in real scenarios for investigating central issues in cognitive science. Learning in mathematics, science, reading/writing, and informal reasoning.

LRN_SCI 410-0 Quantitative Methods I: Probability and Statistics (1 Unit)

LRN_SCI 411-0 Quantitative Methods II: Regression Analysis (1 Unit)

LRN_SCI 413-0 Tangible Interaction Design and Learning (1 Unit)
This course will explore the use of tangible interaction to create innovative learning experiences. It will review both theoretical and technological foundations of the field. Topics include creative expression, embodied interaction, cultural forms, and design frameworks.

LRN_SCI 415-0 Field Methods (1 Unit)
The purpose of this course is to introduce students to the world of qualitative research so that they will be able to read qualitative studies intelligently, and learn to design and conduct qualitatively oriented studies themselves. Beginning with an overview of the epistemological assumptions behind different kinds of research, the course will explore various types of qualitative research approaches and the kinds of topics and queries they support. Students will read and critique examples of published research of various kinds. Next, students will investigate the various methods of collecting qualitative data. The course touches on analysis, the main focus is on developing a qualitative research project and collecting data for it.

LRN_SCI 416-0 Advanced Qualitative Methods (1 Unit)

LRN_SCI 425-0 Introduction to Design for the Learning Sciences (1 Unit)
Building the skills and knowledge necessary to support the design of educational experiences. Exploration of general design principles and learning sciences theoretical perspectives through examination of existing cases of instructional design. A design project involving needs analysis, specifying learning objectives, and designing a new educational experience.

LRN_SCI 426-0 Design of Technological Tools for Thinking and Learning (1 Unit)

LRN_SCI 429-0 Design of Learning Environments (1 Unit)
Issues in designing and studying innovative learning environments. New models of classroom interaction, particularly using technology to enable...