LEARNING SCIENCES

sesp.northwestern.edu/ugrad/learning-sciences.html

The Learning Sciences concentration involves understanding and promoting learning in a wide range of social contexts. Students learn about the most up-to-date theories of learning and applied design, including new technologies, learning environments, curriculum, social arrangements, and space. Learning Sciences is an appropriate academic choice for students who are interested in education technology, instructional design, museum education, educational research, curriculum design, and workplace learning. Courses examine the role of social and cultural contexts in learning, cognition and the processes through which individual learning takes place, and design and evaluation of learning environments using a variety of tools, techniques, and theoretical perspectives. Students choose interdisciplinary courses from anthropology, linguistics, education, computer science, psychology, and cognitive science. Students must choose one specialization: learning in schools, out-of-school learning, or design of learning environments. Students are strongly encouraged to develop a senior-year capstone project based on one or more learning sciences courses.

Program of Study

- Learning Sciences Major (https://catalogs.northwestern.edu/undergraduate/education-social-policy/learning-sciences/learning-sciences-major/)

LRN_SCI 201-0 Cognition and Action (1 Unit)   Perspectives on thinking and learning; how individuals reason and accomplish tasks, both on their own and in interaction with each other and with their immediate environments.

LRN_SCI 202-0 Culture, Language, & Identity (1 Unit)   Social and cultural dimensions of learning, particularly how diverse linguistic and cultural tools mediate forms of identity, learning experiences, and participation in and transformation of social life.

LRN_SCI 214-0 Culture and Cognition (1 Unit)   Explore the cultural ground of cognition. How do cultural environments structure and orient our conceptual knowledge, and how do these cognitive processes feedback into cultural systems? Key topics include conceptual development, knowledge organization, causal reasoning, moral psychology, and environmental psychology. Jointly, the topics are integrated through a focus on social and ecological thought. We will engage in cultural artifact analyses, field experiences, and research inquiries. Combined with LOC 214-0; may not receive credit for both courses.

LRN_SCI 224-0 Holocaust Education Design (1 Unit)

LRN_SCI 251-0 Special Topics in Learning Sciences (1 Unit)

LRN_SCI 301-0 Design of Learning Environments (1 Unit)   Conceiving, building, and testing products and services to help people learn. Topics include the human-centered design process, principles for designing learning environments, and agile project management and communication techniques.

LRN_SCI 302-0 Social, Cultural, and Linguistic Contexts of Education (1 Unit)   This course focuses on the social and contextual influences of education, from a learning, teaching, research, and policy perspective. We will examine the role or race, ethnicity, class, gender, sexuality, and identity in the ways individuals and groups influence and are influenced by our education system.

LRN_SCI 308-0 Redesigning Everyday Organizations (1 Unit)   Concepts and methods for understanding and studying cognition and learning and putting these concepts and methods to use in a design/change project. Combined with LOC 308-0; may not receive credit for both courses.

LRN_SCI 309-0 Inclusive Making (1 Unit)   The goals of this course are to push students to 1) critically explore Making as a practice that promotes democratization, 2) develop interfaces that allow a broader population of students to participate in digital fabrication and 3) design artifacts that positively impact accessibility and inclusivity. The course will include guest speakers, laboratory portions and a projects that encourages students to develop publishable scholarship and/or functional prototypes, as they work in interdisciplinary teams. This is a hands-on project course. All students will design and implement interactive technologies. For this reason you will be expected to do computer programming and digital fabrication. However, all projects can be completed in teams. Hence, it is not essential that all students come with prior knowledge in computer programming and digital fabrication. Additionally, a portion of class and office hours will be devoted to helping students gain familiarity in basic digital fabrication and computer programming.

LRN_SCI 313-0 Tangible Interaction Design and Learning (1 Unit)   Explores the use of tangible interaction to create innovative learning experiences, including distributed cognition, embodied interaction, cultural forms, and design frameworks. Combined with COMP_SCI 313-0; may not receive credit for both courses. Prerequisite: COMP_SCI 110-0.

LRN_SCI 326-0 Design of Technological Tools for Thinking and Learning (1 Unit)   Constructionist approach to design. Participants discuss learning design literature, critique software, and design and build computer-based learning environments (CBLE).

LRN_SCI 338-0 Learning and Teaching with Technology (1 Unit)   Theory and practice of designing school environments that integrate new technologies and media. Combined with TEACH_ED 338-0; may not receive credit for both courses.

LRN_SCI 351-0 Topics in Learning Sciences (1 Unit)

LRN_SCI 372-0 Designing and Constructing Models with Multi-agent Languages (1 Unit)   Exploration and analysis of multi-agent models, which simulate "emergent" scientific phenomena in a wide variety of content domains. Combined with COMP_SCI 372-0; may not receive credit for both courses.

SESP 114-0 Summer Internship (0 Unit)

SESP 115-0 Internship (0 Unit)

SESP 195-0 Civic Engagement (1 Unit)   Critical reflection on community service experiences in relation to broader societal issues. Conceptual frameworks for understanding the meaning and nature of community. For Civic Engagement Certificate students only.

SESP 200-0 Understanding Knowledge (1 Unit)   What does it mean to know something? What are the different types of knowledge and what distinguishes them from one another? What counts as fact vs. opinion vs. belief and so on; who gets to decide and under what conditions? How is knowledge produced and how does it gain traction? How does the source and type of knowledge interact with socio-political-cultural constructs and systems of power and, in turn, how can "knowledge" be used to produce and/or perpetuate power and privilege or to empower those who are marginalized? Finally, how does what we do in SESP and at Northwestern as both consumers and producers of knowledge fit within the landscape of these questions? In this course students will explore these and other questions to gain insight into the social production, distribution, consumption, interpretation, and operationalization of

"knowledge." Using primarily seminar-style discussion, the first portion of the course focuses on building and analyzing theoretical frameworks and applied texts in order to generate a working understanding of "knowledge" in its myriad forms. Among our goals for the first portion of the course is to tie theoretical, academic, and "folk" knowledges to everyday experiences and the world around us writ large. The second portion of the class will involve a series of applied of cases studies, including welcoming members of the SESP faculty community to present on their research, which we will work to bring into conversation with our generated frameworks regarding the sources, types, and implications of knowledge.

SESP 201-0 Human Development: Childhood and Adolescence (1 Unit)   Personal, social, and cognitive development from birth through adolescence. Interplay of biological and experiential factors on linguistic and conceptual development, ego, and personality.

SESP 203-0 Human Development: Adulthood and Aging (1 Unit)   Psychological, sociological, and biological factors influencing socialization and development from young and middle adulthood through old age. Influences of family, school, and work on the individual.

SESP 204-0 Designing for Social Change (1 Unit)   A key goal of this course is to acquire an intellectual and applied understanding of the principles of program design and development, which include a sustained consideration of issues affecting the quality of program implementation. This course is best suited for FIRST AND SECOND YEAR students.

SESP 210-0 Introduction to Statistics and Research Methodology (1 Unit)   Definitions and classifications of terms used in quantitative methods; measures of typical and maximum performance, reliability, and validity checks; reporting and displaying data; interpreting results.

SESP 218-0 Leaders Lab (1 Unit)   N/A.

SESP 251-0 Special Topics (1 Unit)   N/A.

SESP 260-0 Community Based Research Methodologies: Educational Justice (1 Unit)   This course examines the histories, ideas, practices, relations and possible futures that shape struggles for educational justice and human thriving. The course is unique in that it brings together an intergenerational group of thinkers and learners (high school students, undergraduate students, youth workers, graduate students, professors, high school teachers and community members) to engage in collaborative study, reflection and design.

SESP 272-0 Field Research Methods (1 Unit)   Guided practice in systematic and participant observation. Observer bias, field notes, unobtrusive measures.

SESP 291-1 Peer-Led Learning: Theory and Practice (0.25 Unit)   SESP 291 is the training program for students working as first-time mentors in the Peer Leaders program. It is taken over two academic quarters, with each quarter offering .25 credit (a total of .5 credit). You will receive a "K" grade for fall quarter, which means you are continuing in the course. After winter quarter, you will receive a letter grade which will be retroactively applied to fall quarter.

SESP 291-2 Peer-Led Learning: Theory and Practice (0.25 Unit)

SESP 295-0 Advanced Civic Engagement (1 Unit)   Course on the importance of community capacity building and the community-consulting process; start of preliminary work for the Certificate in Civic Engagement capstone project.

SESP 298-0 Student Organized Seminar (1 Unit)   Courses proposed by students and supervised by faculty sponsors on special topics approved by the SESP undergraduate education director. May be taken only once

per quarter; pass/no credit only. Consultation with the SESP student affairs assistant dean advised.

SESP 299-1 Civic Engagement Capstone Research (1 Unit)   Independent study courses leading to completion of the Certificate in Civic Engagement capstone project.

SESP 299-2 Certificate in Civic Engagement- Capstone Project (1 Unit)   Independent study courses leading to completion of the Certificate in Civic Engagement capstone project.

SESP 310-0 Causal Methods for Evaluating Policy (1 Unit)   This course will provide students with a framework for understanding causal inference and a toolkit for making causal claims using quantitative data. Prerequisites: Students need to have taken SESP 210-0 or any 200-level STATS course.

SESP 320-0 Race and Education (1 Unit)   Conceptual underpinnings of the construct of race and how conceptions of race have influenced the course of education in the United States.

SESP 322-0 Crafting Child Policy (1 Unit)   N/A.

SESP 323-0 Trauma and Atrocity: Holocaust Memory, Memorial and Museums (1 Unit)   What is Holocaust memory? How has Holocaust memory changed over time, and how does the Holocaust continue to affect our understanding of trauma, atrocity, and human rights today? This seminar addresses individual memory, including survivor and witness testimony, memory and trauma, and the impact of the Holocaust on survivors' families and communities.

SESP 324-0 Pedagogies for History and Injustice: Holocaust Education Design (1 Unit)   N/A.

SESP 325-0 Race, Adolescence, and School Discipline (1 Unit)   In recent years, racial disparities in school discipline have attracted the attention of educators, policymakers, parents, and the general public. Why is it so hard for legal, political, and educational institutions to improve school discipline? How do intersections of race, gender, and social class matter for students' experiences of school discipline? Are there schools that are getting discipline right? What does that look like, and to what extent can other schools learn from their successes? In this course, we will learn about evidence-based policy improvements and imagine how to create schools where race does not predict discipline.

SESP 351-0 Special Topics (1 Unit)   Advanced work on special topics.

SESP 351-SA Special Topics (1 Unit)   Advanced work on special topics. This course is limited to students approved to study abroad through the Global Learning Office (GLO).

SESP 360-0 Magic Monsters & the Holocaust (1 Unit)   In this course, we'll explore public learning about the Holocaust through popular film and fiction. We'll question which historical narratives are being told and which are being ignored, and we'll ask why and how genres like fantasy, sci-fi, fairy tales, and time travel are commonly used to bring stories of mass-violence to the public.

SESP 381-0 BSED/BSJ Experiential Learning Community Workshop Series (0 Unit)   In their second year, students choose 1 experiential education requirement – either the SESP Practicum, Student Teaching, or Medill Journalism Residency for 4 units of credit. The students participate in the Community Workshop Series during the year they complete their experiential education requirement.

SESP 390-0 Research Apprenticeship (1 Unit)   Opportunity to participate in faculty research projects. Prerequisites: consent of the faculty member and the SESP assistant dean for student affairs; submission of completed Request for Independent Study/Special Courses Form at registration.

SESP 391-0 Advanced Research Design (1 Unit) Overview of research methods that may be used to design and implement the honors thesis. Prerequisites: SESP 210-0 and SESP 272-0 recommended.

SESP 392-0 Experiential Learning: Practicum (4 Units)

SESP 392-SA Experiential Learning: Practicum Study Abroad (4 Units)

SESP 398-0 Senior Thesis Seminar (1-3 Units) Students develop, design, implement, and evaluate a research project under a faculty advisor's guidance. Prerequisites: senior status, cumulative GPA by the end winter quarter of the junior year, recommendation for the honors program from SESP 391-0 instructor(s); consent of program director.

SESP 399-0 Independent Study (1 Unit) Faculty-supervised study of special topics of the student's own choosing and not covered in regular courses. Prerequisites: consent of the supervising faculty member(s) and the SESP assistant dean for student affairs; submission of completed Request for Independent Study/Special Courses Form at registration.