

2018
Learning in Informal Contexts

15:262:620

3 Credits

Wednesdays, 4:50 – 7:30 pm, Lipman Learning House
71 Lipman Drive

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Office Hours by appointment Office: Marine Sciences Building Room 103 (71 Dudley Road)	Prerequisites or other limitations: Graduate Student Status, permission of instructor
Mode of Instruction: <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input checked="" type="checkbox"/> Hybrid <input type="checkbox"/> Online <input type="checkbox"/> Other	Permission required: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Directions about where to get permission numbers:

Learning goals: In this course you will develop an understanding of the theoretical and practical aspects of researching and facilitating learning in out of school contexts. We will draw upon learning theory from sociocultural perspectives of knowing and learning and seek to connect these theories and concepts to informal learning experiences. Through readings, experiential learning activities, writing assignments, discussion/reflection, and applied projects, students will gain first hand knowledge and experience about the current state of research and practice in “informal learning”.

By the end of the course students will:

- 1) Develop knowledge and appreciation for the complexity of learning in informal learning environments that fall outside traditional classroom learning.
- 2) Understand and apply basic tenets of socio-cultural learning theory to designing learning experiences in informal or out-of-school contexts.
- 3) Explore through reading and discussing primary literature how the science of everyday life contribute to understanding, expertise, and identity.

The course will focus most heavily on **Design of Learning Environments Goals:**

- **Understand the process of design and how it applies specifically to the design of learning environments.** Students will apply the design process to informal learning environments and discuss how the process can be adapted to target typical learning outcomes such as conceptual understanding, effective strategy use, and increased motivation.
- **Engage in the process of designing learning environments.** Students will engage in a hands-on project (designing a program or field trip) that will include (a) thinking theoretically about the mechanisms by which particular approaches or

features of a design support learning and address a particular need in context, (b) drawing on prior research in fields such as design, psychology, and education to explain, refine, and justify those approaches or features, and (c) reporting these approaches in a end-of-course paper.

Course catalog description: The seminar-style course focuses on theoretical components of learning in out-of-school contexts. Learning theory in this area draws heavily from sociocultural perspectives on knowing and learning. Students will read and discuss primary and secondary literature on learning sciences research focused on learning in out-of-school settings, including science centers, art museums, after-school programs, scouting and hobbyist groups, aquariums, and life-long learning settings, among other out-of-school contexts.

Class materials/ Textbooks:

Required: Bell, P. Lewenstein, B. Shouse, A.W. & Felder, M.A. (2009) Learning Science in Informal Environments: People, Places and Pursuits. Washington DC. National Academies Press.
http://www.nap.edu/catalog.php?record_id=12190#toc

Falk, J.H. and Dierking, L.D. (2013). The Museum Experience Revisited. Left Coast Press Inc.

Highly Recommended:

Diamond, J. J. Luke, and D. Uttal. (2009). Practical Evaluation Guide: Tools for Museums and Other Informal Education Settings. Alta Mira Press.

Fenichel, M., & Schweingruber, H. A. (2009). Surrounded by science: Learning science in informal environments. National Academies Press. Chicago.

About the Course:

As a class, we will work to develop an understanding of researching and facilitating learning in a variety of out-of-school settings. Through readings, experiential learning activities, class discussions, observations, and writing assignments, students will gain a first hand knowledge and experience about the current state of research and practice in “informal learning”. The course will follow a combination of seminar-style format (reading and discussing seminal literature), hands on activities, reflection and learning experiences in informal learning spaces (see criteria for observations).

Graduate students who are following a research trajectory will develop an understanding of research methodologies on informal learning and gain an appreciation for the rich sets of contexts and opportunities available for studying various aspects of “education” (cognition, instruction, teacher learning, professional development, etc) in non-traditional out-of-school settings. For those graduate students with applied trajectories, this course

will expose you to the research on the use of field trips, after-school programs, and other informal contexts as both teaching/learning tools and professional development tools. Graduate students in teacher credentialing programs will gain both theoretical and practical knowledge of leading field trips as a critical component of educational practice.

In addition to weekly readings and online reading reactions, students complete three course assignments: (1) two observations at an informal learning institution(s), (2) a project focused on either (a) creating a coherent school-based field trip experience, or (b) a plan for an informal education program, or (c) a literature review or /research proposal including a minimum of 10 references on a topic of your choice related to informal learning, (3) one literature hunt (brief) presented to the class that focuses new literature in informal learning, and (4) a reflection paper for the course detailing what you have taken away from the course and how you think you will apply the information.

Online Component of the Course: We will follow a hybrid model with some of our discussions and reflections conveyed through an online course system (see website information).

Grading policy:

Grading Breakdown by Assignment	Grade	Due Date
Participation	15%	Ongoing
Reading Prompts	5%	Ongoing
Observation & Evaluation	20%	Feb 14 th Before class
Project Proposal	5%	March 7th
Literature Hunt Topic selection Literature presentation	25%	March 28 th April 25 th or May 2nd
Project	25%	May 2nd
Reflection Paper	5%	May 2nd

Grading Scale:

- A = 90-100
- B+ = 85-89
- B = 80-84
- C+ = 75-79
- C = 70-74
- D = 73-70
- F = Below 70

Assignments¹:

Course Requirements and Assignments

- 1) **Class Participation and Attendance:**
Your participation is critical to your success in the class. *It is important that you are present and actively participating in the class activities and discussions as well as online.* Class participation will involve the discussion of assigned readings. You are expected to attend all class sessions. If for some reason you must miss class, please contact me prior to class.
- 2) **Reading and Prompts:** You are expected to reply to a reading prompt on Sakai on a weekly basis. These prompts are designed to help you get the most out of the reading and to prepare for class.
- 3) **Literature Hunts:** Each student will be asked to search out a relevant set of research literature (1-2 papers) related to the course themes of how people learn in informal learning context. Some of these papers may form the focus of the “Choice Week” readings. Students will provide very brief overview of the annotated bibliography of these papers in class. Literature selections can come from references embedded in course readings or can be “novel finds” from new pockets of research that relate to the themes of the course.
- 4) **Observations:** Students will conduct a 2-3 hour observations in an informal context outside of class time. You will be provided with methodologies for conducting your observations. One of our observations will be together with an Exhibit Design expert at Liberty Science Center.
- 5) **Projects:** Students will be able to choose one of the following projects to be completed by the end of the course.
 - a) You will **create a coherent school field trip** experience on a topic of your choice and aimed at a grade level of your choice. You will not need to conduct the field trip.
 - b) You will create an **informal science education program** (e.g. After school, eco-tourism, docent-led, museum, café science program, etc.).
 - c) **Literature review or a research proposal.** *Literature reviews* should draw on at least ten references, a few of which may be readings we have covered together in class. Your paper (8-10 pages) should define your topic and then summarize and synthesize different approaches scholars have taken. *Research proposals* should also define the topic, give a brief overview of some existing literature, and explain in detail the project you

¹ Including exams, papers etc.

envision. Include a description of the project's significance and potential contribution to relevant fields.

- 6) **Individual reflection paper:** The last assignment of this course is an individual reflection paper 3 pages long (double-spaced, 12pt font, 1" margins) in which you (individually) reflect on what you have learned in this course. This reflection should be based on the contribution of the readings, class activities, and final project to your developing understanding of what it means to teach and learn science in informal contexts.

Submitting Assignments

All work should be submitted through the class Sakai Dropbox tool.

In addition to the content/substance of your writing, each major assignment will be evaluated based on a writing rubric that assesses the following:

1. *Organization* - The writing is clear and focused. The organization is obvious throughout, and the reader is skillfully guided through the document (i.e. using appropriate headings, thesis statements, and transitions).
2. *Argumentation and Analysis* - All sentences and paragraphs are fully developed and coherently connected. The writer makes clear, strong, and logical points supported with rich and relevant details from the data or related research literature (i.e., course readings).
3. *Technical Correctness* - There are almost no major or minor technical writing errors with regard to APA conventions, sentence structure, spelling or punctuation.

Each major assignment should be formatted using the formal standards articulated by APA publication manual for a manuscript. Those standards include, but are not limited to:

- Times New Roman, 12 point font
- One inch margins on all sides
- Page numbers
- Cover page that includes title, course, student, professor, date
- Left alignment with default spacing between words and letters
- Double spaced lines with only one hard return between indented paragraphs
- Proper in-text citations and a separate bibliography or reference section

Refer to the APA publication manual for further details. Also, the following website is a good resource, although it is not as complete as the APA publication manual:

<https://owl.english.purdue.edu/owl/resource/560/01/>

Web site: <http://sakai.rutgers.edu>

Academic Integrity Policy:

The Office of Student Conduct supervises issues related to violations of academic integrity (see <http://academicintegrity.rutgers.edu>). Please familiarize yourself with the university policy on academic integrity at

http://academicintegrity.rutgers.edu/files/documents/AI_Policy_2013.pdf

Office of Disability Services:

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Course Schedule

Class	Topic <i>Location</i>	Activity <i>We will do in class</i>	Assignment <i>To be completed prior to this class</i>
Week 1 Jan 17	Introduction Course Overview Meeting at Lipman House	<ul style="list-style-type: none"> Review course syllabus Discuss what is informal learning Review foundational ideas of learning. How are they similar/different in learning contexts (in and out of school)? 	<ul style="list-style-type: none"> Introduce yourself in online icebreaker Respond to the prompt in the forum section.
I. Conceptualizing Informal Learning			
Week 2 Jan 24	What is informal learning? Relating Formal and Informal Learning Lipman House	<ul style="list-style-type: none"> Group activities/discussion on learning across diverse settings, Strands of Informal Science Learning, common characteristics of Informal Learning Environments (ISEs). 	<ul style="list-style-type: none"> Answer online discussion question 1 (post by Friday Jan 19th and respond to at least 2 classmates' posts before Jan 24th). Write a short literature brief using our class template on one article you would like to lead the discussion on for the class.
Week 3 Jan 31	Design for Learning: Assessment, Evaluation and Research Lipman House	<ul style="list-style-type: none"> Introduction to LSC Exhibit Designer – Jonn McCollum Work as a group to construct a topical framework Discuss how museums design for learning <i>Plan your individual observation of learning in an informal space (when and where). Complete observation form by February 21st.</i> 	<ul style="list-style-type: none"> Answer online discussion question 2 (post by Friday Jan 26th and respond to at least 2 classmates' posts before Jan 31st). Review Hudson Home exhibit plan. Field Trip -- Meet at Liberty Science Center for class observation in Hudson Home (February 3rd 10 am – 12).

Week 4 February 7	Sociocultural Theory Lipman House	<ul style="list-style-type: none"> • Discuss how we promote learning with and from others • Discuss Situated learning, and cultural practices. • “Situated Frames” exercise with Dr. Shawn Rowe. 	<ul style="list-style-type: none"> • Answer online discussion question 3 (post by Friday Feb 2nd and respond to at least 2 classmates’ posts before Feb 7th). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class. •
Week 5 February 14	Methodology Lipman House	<ul style="list-style-type: none"> • What are the differences and similarities for planning and carrying out evaluation and research projects? • What tools and evidence can we use? • Guest Speaker Dr. Deborah Perry, Author of What Makes Learning Fun? 	<ul style="list-style-type: none"> • Answer online discussion question 4 (post by Friday Feb 9th and respond to at least 2 classmates’ posts before Feb 14th). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class.
Week 6 February 21	Learning Interest and Identity Development Lipman House	<ul style="list-style-type: none"> • Explore the variety of tools learning scientists and evaluators use to understand when and how learning is happening. 	<ul style="list-style-type: none"> • <i>Submit Observation Paper online or in class.</i> • Answer online discussion question 5 (post by Friday Feb 16th and respond to at least 2 classmates’ posts before Feb 21st). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class.
II. Practicing Informal Learning			
Week 7 February 28	Learning with and from Others Lipman House	<ul style="list-style-type: none"> • How do interest, attitude, and identities of learning affect student ISE learning? • Guest Speaker Dr. Joan Middendorf, Indiana University (invited)- Author of Overcoming Student Learning Bottlenecks: Decode the Critical Thinking of Your Discipline • Review final project requirements 	<ul style="list-style-type: none"> • Answer online discussion question 6 (post by Friday Feb 23rd and respond to at least 2 classmates’ posts before Feb 28th). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class.
Week 8 March 7	Designing Learning Spaces in Informal Learning Contexts (Object Learning Theory) Lipman House	<ul style="list-style-type: none"> • Design considerations, family learning, and creating learning spaces outside schools. • Group discussion on • Guest Speaker - Object Learning Theory, Dr. Shawn Rowe, Oregon State University 	<ul style="list-style-type: none"> • <i>Submit Paragraph on Final Project Idea</i> • Answer online discussion question 7 (post by Friday March 2nd and respond to at least 2 classmates’ posts before March 7th). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class.
Week 9 March 14th Spring Break. Enjoy your time off!			

<p>Week 10 March 21</p>	<p>Broadening Participation Diversity and Equity Lipman House</p>	<ul style="list-style-type: none"> • Providing quality learning experiences for all • How can we ensure we are inclusion in our design of learning experiences? • Guest Speaker Dr. Corey Garza, California State University Monterey Bay 	<ul style="list-style-type: none"> • Answer online discussion question 8 (post by Friday March 23rd and respond to at least 2 classmates' posts before March 28th). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class.
<p>Week 11 March 28th</p>	<p>Life –Long, Life Wide, Life –Deep Learning Lipman House</p>	<ul style="list-style-type: none"> • Life-long learning refers to the acquisition of fundamental behaviors; Life-wide learning involves a breadth of experiences; and Life-deep learning embraces religious, moral, ethical, and social values that guide what people believe, how they act, and how they judge themselves and others. 	<ul style="list-style-type: none"> • Answer online question 9 by Friday March 30th and respond to at least two classmates by April 4th. • Use the Literature brief template to write a brief summary of the literature selections for this week. (1-2 pages total).
<p>Week 12 April 4</p>	<p>Learning through Digital and Visual Media Lipman House</p>	<ul style="list-style-type: none"> • We will explore how Internet based learning materials impact learning • Q&A with Ari Daniel from NOVA- value of storytelling in helping people learn in free choice environments (invited). 	<ul style="list-style-type: none"> • Answer online discussion question 10 (post by Friday March 27th and respond to at least 2 classmates' posts before April 4th). • Write a literature brief using our class template on one article you would like to lead the discussion on for the class.
<p>Week 13 April 11</p>	<p>Teaching and Learning in Informal Settings Lipman House</p>	<ul style="list-style-type: none"> • We will explore learning in outdoors, school field trips, Citizen Science, and the latest literature on Makers Space. 	<ul style="list-style-type: none"> • Answer online discussion question 11 (post by Friday April 6th and respond to at least 2 classmates' posts before April 11th). • Write a literature brief using our class template on one article you would like to lead the discussion.
<p>Week 14 April 18</p>	<p>Youth and STEM Learning Lipman House</p>	<p>We will explore the latest literature on out of school (afterschool) learning environments.</p>	<ul style="list-style-type: none"> • Answer online discussion question 12 (post by Friday April 13th and respond to at least 2 classmates' posts before April 18th). • Write a literature brief using our class template on one article you would like to lead the discussion.
<p>Week 15 April 25</p>	<p>Free Choice Week Literature Hunt Lipman House</p>	<p>Prepare a literature brief on paper(s) that relate to specific learning contexts of interest to you – Examples include afterschool programs, museums, online spaces community contexts, school field trips, etc.</p>	<ul style="list-style-type: none"> • Presentations on Literature Hunt
<p>Week 16 May 2</p>	<p>Free Choice Week Literature Hunt Lipman House</p>	<p>Prepare a literature brief on paper(s) that relate to specific learning contexts of interest to you.</p>	<ul style="list-style-type: none"> • Presentations on Literature Hunt • Final Project Due • Reflection Paper Due

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