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**THE PROCESS OF DISCOVERY**  
**KHC HC401 – Section A2**  
**FRIDAY 8.30-10.45, ROOM TBD**

**COURSE DESCRIPTION** This course has three aims: to continue your general education by introducing you to field-changing research drawn from different fields of inquiry, to assist you in designing your Keystone project, and to help you express field-specific insights in language accessible to a general audience. The course is structured around three basic activities: individual and group analysis; writing exercises aimed at promoting intellectual discovery, methodological rigor, and project design; and group activities aimed at honing project design and presentation skills.

During the first seven weeks, the class will meet together to discuss innovative research projects undertaken by scholars from a variety of disciplines. One essential purpose of these case studies is to fulfill your general education requirements, which are central to Kilachand's mission. In addition, we will use these readings to explore the structure of the discovery process, focusing on how researchers embed imaginative questions in viable research projects and balance creative ambition with intellectual modesty by selecting rigorous methodologies. But the test of innovative research or a creative project is not simply how well it demonstrates the explanatory power of an imaginative leap; a project of this scale must also be clearly presented so that others can appreciate the intellectual insights it offers. In addition to helping students design their research or creative project, then, the class will also teach students how to present technical ideas in clear language that anyone outside their chosen discipline can understand.

After meeting together to consider best practices, students will focus on their Keystone proposals. In addition to working on your projects individually, you will also be partnered with another student from a different intellectual discipline to provide you with feedback on your design. This exercise will also help you develop your skills in communicating across disciplinary boundaries. At this stage, you should meet regularly not only with your partner, but also with your intended faculty advisor to discuss your project in detail. The more input your advisor can provide, the better the project design. In the final weeks, each student will present the project they will undertake as seniors. You can find more information on Keystone projects, including project guidelines, funding opportunities, instructions for submitting your proposals, and the relevant forms at <http://www.bu.edu/khc/current-students/keystone-project-resources/>.

**REQUIREMENTS** Grades are based on your performance on the following required assignments:

Four two-page précis 20 percent  
Project pitch paper (no more than 5 pages) 5 percent  
5-page methods paper 10 percent  
10-page research paper proposal 20 percent  
One five-minute oral presentation 10 percent  
One 10-minute oral presentation 20 percent  
Participation during class meetings 15 percent

Please turn papers in on paper and on time. "On time" means at the beginning of class on the day they are due. **No extensions** will be granted. Late papers will be marked down one third of a letter grade per day.

**PARTICIPATION** This course is a seminar, which means that during the weeks the class meets together attendance is required and participation in class discussion is essential. **Class participation** includes substantive analysis of the assigned texts, engaging your peers in constructive debate, and demonstrating a willingness to make mistakes. Making mistakes is integral to the learning process; it is only through mistakes that we are able to understand how and what we think. For this reason, you will not be graded on the content of what you say, but rather on how much you contribute constructively to the class. But please note: your final grade is highly dependent on your willingness to engage your instructor and classmates on substantive issues.

**FACULTY ADVISER** By the end of the semester, students **must** have selected a **tenure-track faculty member** in their chosen field who is willing to advise them on their senior project. It is **strongly recommended** that students identify an adviser as early as they can. There are a variety of ways of doing this, including working with Kilachand faculty in their areas of interest to identify an appropriate mentor. Furthermore, students are encouraged to seek out their **faculty adviser** on a regular basis for guidance and feedback on the formulation of their project proposals. Finally, it is **required** that your faculty adviser **read** the final project proposal described below and **sign** the **faculty adviser form**.

**PRESENTATIONS** Students are responsible for two presentations. The first presentation consists of a **short oral presentation** (about 5 minutes) of your research partner's proposed Keystone project. To explain your partner's project proposal effectively, you must grasp the core questions and design of your partner's research project and communicate them to the rest of the class in language that captures the project's purpose and method without permitting the technical aspects of their field of study to obscure what is important about the project.

The second oral presentation, due in the **final weeks** of class, entails a **10-minute explanation** of your own proposed Keystone project. Students are encouraged to make creative use of audio and visual media to assist them in presenting their projects, provided that these aids do not interfere with the task of communicating the goals and methods of your project in a clear and intelligible manner. The aim of this exercise is to improve your presentation skills and benefit from the constructive criticism of your peers.

**WRITTEN WORK** During the first seven weeks, each student will be required to write **four précis** based on the assigned texts. The purpose of the précis is to hone your writing skills and help you think critically about the process of discovery. Each précis should be no more than **two pages long** and focus on **one text/research agenda**. It is **not a book review**. Instead, it should identify one of the researchers' main arguments, evaluate the kinds of evidence presented to support that argument, and then assess how effective the research design is in articulating and testing a given problem. Since you only have two pages in which to accomplish this task – which is much less than you think – you should avoid trying to generalize about the entire text/research project. Instead, focus on one or two aspects that struck you as insightful or problematic, evaluate the kind of evidence offered, explain whether the data supports the claims made, and suggest whether the example you have chosen is representative of the researchers' approach. Remember: the précis is a close reading of one aspect of someone else's research project. It should analyze a question the text poses, the methodology it applies, and/or source base it uses.

Students will also be asked to write a **short project pitch** and a **five-page methods paper**. You should think of the project pitch paper as a chance to explore and toy with some ideas rather than a more formal exercise resulting in a polished product. In contrast, the methods paper requires you to evaluate the methodologies deployed in the assigned readings **or** present the methodologies you intend to use in your Keystone project. The methods papers are designed to get you thinking clearly about the relationship between the questions your research projects raise and what tools you will use to answer those questions.

On **March 24th**, you must submit a **draft of your 10-page research proposal** laying out an original research or creative project that you will undertake in the senior year. For those undertaking research projects, your proposal must focus on a problem you think is under-researched, articulate the reasons the problem is of interest to others, outline an experiment that defines the problem and illustrates an argument about it, identify methodologies and sources that are best suited to a **viable** demonstration of your hypothesis, and where relevant include a bibliography. If your project is related to the arts, you should outline a project that permits you to explore a specific problem and test your creativity. Every proposal should include a **250-word abstract** describing your project, a **timeline**, and a **budget** if you are requesting funds to support your research.

Whatever you do, your project should be fun; after all, you'll be spending a lot of time on it next year. It should also be imaginative, but subject to the rigorous research designs you have learned about during the semester. Last but not least, your project should also be "doable." Don't expect to use CERN's super collider or to undertake 1500 interviews in a remote central Asian republic! During the semester, you are strongly advised to consult your **faculty adviser** in your chosen field of intellectual inquiry and discuss your project proposal with him/her at length and frequently. Part of the fun of a project on this scale is the working relationship you develop with an older and more experienced person.

At the end of the semester, you must submit a **final version** of your research proposal **electronically**. **The final proposal must include the following items:**

- 1) **an abstract of no more than 250 words describing your project**
- 2) **a timeline** embedded in the proposal
- 2) **a budget and narrative justification if you are requesting funds** submitted separately from the proposal
- 4) **a signed faculty adviser form.**

You must *upload* the abstract, proposal and timeline, budget where relevant, and signed adviser form to the Keystone project information site (<http://www.bu.edu/khc/current-students/keystone-project-resources/>) by 5 p.m. on May 8th.

*More information about the keystone project and faculty advisers, as well as the relevant forms for submission, can be found at: <http://www.bu.edu/khc/current-students/keystone-project-resources/>.*

**CHEATING** Cheating is a serious infraction of scholarly conduct, and will earn an automatic F for the course. **Cheating includes plagiarism**, which is defined as the use of intellectual material produced by another person without appropriate acknowledgment. Students are expected to adhere to the Kilachand Honors College and Boston University Academic Codes of Conduct (<http://www.bu.edu/khc/current-students/policies/>).

**ACADEMIC ACCOMODATION** In keeping with University policy, any student with a disability who needs or thinks they need academic accommodations must call the Office of Disability Services at 353-3658 or stop by 19 Deerfield Street to arrange a confidential appointment with its staff member. Accommodation letters must be delivered to me in a timely fashion (within two weeks of the date on the letter and not later than two weeks after the start of class.

## READINGS

**Required Texts:** The following books are available for purchase at Barnes and Noble BU.

Émile Durkheim, *The Elementary Forms of Religious Life*, trans. Carol Cosman (Oxford and New York: Oxford University Press, 2008) ISBN-13: 978-0199540129

Jay Macleod, *Ain't No Makin' It. Aspirations And Attainment In A Low-income Neighborhood* (Boulder, Colorado: Westview Press, 2008) ISBN-13: 978-0813343587

## SESSION DETAILS

*Part 1: Best Research Practices (Group meetings around readings in different fields)*

January 20: **Introduction: Knowledge vs. Interpretation**

Excerpt from Monty Python, *The Holy Grail* (witch scene)

Excerpt from David Hume

January 27: **Designing a Research Agenda** (Social Psychology)

Readings:

Daniel Kahneman and Amos Tversky, "Judgment under Uncertainty: Heuristics and Biases," *Science* 185:4157 (Sept. 27, 1974): 1124-1131

Amos Tversky and Daniel Kahneman, "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology* 4 (1973): 207-232, abridged version

Daniel G. Goldstein and Gerd Gigerenzer, "Models of Ecological Rationality: The Recognition Heuristic," *Psychological Review* 109 (2002): 75-90

Shlomo Benartzi and Richard Thaler, "Myopic Risk Aversion and the Equity Premium Puzzle," *The Quarterly Journal of Economics* 110:1 (February 1995): 73-92

**First précis due before class**

February 3: **Collecting and Analyzing Data** (Sociology)

Reading:

Jay Macleod, *Ain't No Makin' It. Aspirations And Attainment In A Low-income Neighborhood*: preface-chapter 3; chapter 5; chapter 7-page 276; skim methodological appendix

Group 1: chapter 4 and one unanalyzed interview transcript from Macleod's final field visit

Group 2: chapter 6 and one unanalyzed interview transcript from Macleod's final field visit

**Second précis due before class**

February 10: **Research Questions**

Students are asked to **submit three research questions from their chosen field of study, explain** to the class why they are worth asking, and **propose** a method of answering them.

**Presentation: Institutional Review Board**

## **SESSION DETAILS (cont.)**

February 17: **Reframing Questions** (Neuroscience)

Readings:

- A.J. Parker and W.T. Newsome, “Sense and the Single Neuron: Probing the Physiology of Perception,” *Annual Review of Neuroscience* (1998:21): 227-77
- R. Romo and E. Salinas, “Flutter Discrimination: Neural Codes, Perception, and Decision Making,” *Nature Reviews Neuroscience* (2003:4): 203-18
- K. H. Britten, M. N. Shadlen, W. T. Newsome and J.A. Movshon, “The Analysis of Visual Motion: A Comparison of Neuronal and Psychophysical Performance,” *Journal of Neuroscience* (1992:12): 4745-4755
- R. Romo, A. Hernandez, A. Zainos and E. Salinas, “Somatosensory Discrimination based on Cortical Microstimulation,” *Nature* (1998:392): 387-90

**Project pitch paper due before class**

February 24: **Categories of Analysis** (Religion)

Reading:

- Émile Durkheim, *The Elementary Forms of Religious Life*, introduction (*Durkheim’s* introduction, not the translator’s or editor’s); book I.1; skim book II.1-5; book II. 6-7; book III (read III.2 especially closely); conclusion

**Third précis due before class**

March 3: No class

March 17: **Observation** (Inductive Reasoning)

Reading:

- Samuel H. Scudder, “In the Laboratory with Agassiz” (1874)

**Fourth précis due before class**

**Methods Paper due on March 17 – check if this is OK**

### ***Part II: Presenting Research Projects***

March 24 and 31: **Short oral presentation** of student projects **by research partners**

**All drafts of research proposals due on March 24**

April 7: **10-minute oral presentations by student researchers** (first group)

April 14: **10-minute oral presentations by student researchers** (second group)

April 21: **10-minute oral presentations by student researchers** (third group)

April 28: No Class, but a field trip will be scheduled either on April 29 or April 30th

**NOTE: Students must *upload* their abstract, proposal, budget (where relevant), and signed adviser form to the Keystone website (<http://www.bu.edu/khc/current-students/keystone-project-resources/>) by 5 p.m. on May 8th**