

Spring 2021

STS 205-H02: Intro to Research Methods

Theresa Hunt

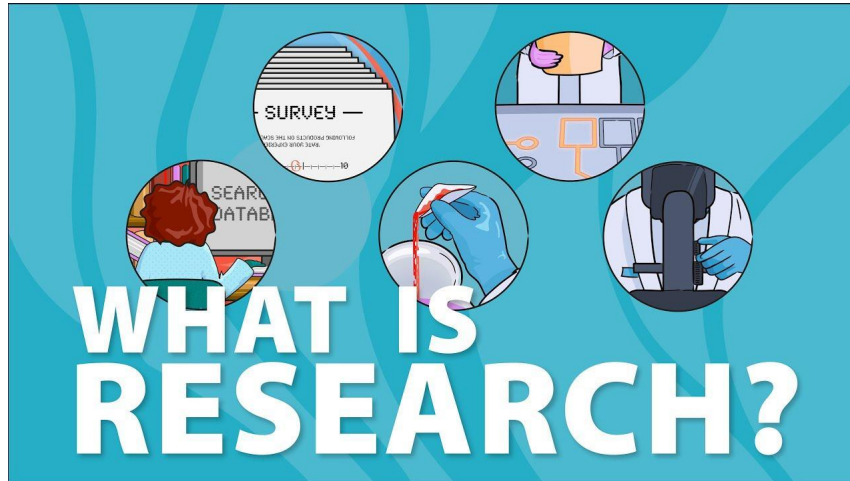
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STS 205: Intro to Research Methods – Honors



Monday/Wednesday 11-2:20pm

Converged Class Location: Honors College 210

Synchronous Online Sessions: Check email for WebEx Meeting Link

Facilitator: Dr. Theresa Hunt

Email: thunt@njit.edu

Office: 425 Cullimore Hall

Office Hours: by appointment

Prerequisites: HUM 101 and 102 or equivalent

Faculty Mentors:

[Professor Maurie Cohen](#) [STS]

[Professor Yelda Semizer](#) [Cyberpsychology]

[Professor Yvette Wohn](#) [Informatics]

[Professor Shawn Chester](#) [Mechanical & Industrial Engineering]

[Professor Michael Ehrlich](#) [Finance & Management]

[Professor Michael Lee](#) [Informatics]

[Professor Ravi Ravindra](#) [Physics]

[Professor Wen Zhang](#) [Civil & Environmental Engineering]

[Professor Britt Holbrook](#) [STS]

Course Description:

This course is intended to give first and second year undergraduate honors students an understanding of what research is, what it is used for, how it is conducted, and how it is reported. It provides an overview of applying the scientific method to real-life research, including ethical concerns, qualitative and quantitative methods (and how and when they should be used), and how to critically evaluate published research findings. Students work with faculty mentors on research projects, while writing proposals for the support of future research.

Objectives:

By the end of this course students will be able to:

- Define science
- Identify a research problem
- Identify and mitigate ethical issues associated with a research project
- Conduct a thorough literature review and critique published research
- Develop research questions and hypotheses
- Determine which type of data is most appropriate to answer the research questions
- Assess multiple formats for organizing, developing, and presenting research
- Develop a research network and understand how to communicate with faculty, graduate students, peers, etc. about research

Required Readings:

Excerpts from the following text, as well as several other articles and book chapters available on Canvas, will be assigned periodically throughout the class:

[Dixon, Jeffrey, Singleton, Royce, and Straits, Bruce \(2019\). *The Process of Social Research*. New York: Oxford UP. ISBN 9780190876654](#)

Course Requirements:

Research Project: 40%

Draft 5%

Peer Review Activities 5%

Short talks 10%

Project (Poster/Proposal) 20%

Course Participation / Lab Practicum Faculty Mentor Evaluation: 20%

Final Presentation: 20%

Literature Review: 15%

Task #1 5%

Final 10%

CITI Responsible Conduct of Research course: 5%

Late Paper Submissions: Papers and other tasks will lose one grade for every day late (A to A-, A- to B+). Assignments will not be accepted more than 1 week late.

Paper Formatting: All papers should be typed, double-spaced, 12 pt standard font (Times, Helvetica, Arial, etc), 1" margins. For digital submission, only the following file types are accepted: pdf, doc, docx.

Grading Scale (for assignments only, course grades will not include: A+, A-, B-, C-, D+):
96-100:A+; 93-95: A; 89-92: A-; 86-88:B+; 83-85:B; 79-82:B-; 76-78:C+; 73-75:C; 69-72:C-
66-68:D+; 60-65:D; 0-60: F

Academic Integrity:

Students are expected to follow the University Code on Academic Integrity. Plagiarism will not be tolerated. All cases of suspected plagiarism/cheating will be reported for investigation. For

details, see: <http://www.njit.edu/academics/integrity.php>

Technology Rules and Participation Expectations:

Students may use technology (ie laptops, tablets, phones) in this course for class-related activities only. Texting, using Twitter, playing games, etc. interrupts the flow of discussion, distracts other students, and will inevitably embarrass you when I have to call you out. When we meet via WebEx for synchronous sessions, students are expected to be **actively engaged**, and various methods will be employed to assess engagement during the class period. Students are **encouraged to turn cameras on** during synchronous sessions, and to use the chat or “raise hand” feature to contribute to class discussion.

Students with Disabilities or Special Needs:

Students who have disabilities or special needs should contact NJIT's Student Disability Services to help procure accommodations in completing coursework. The center can be found at <http://www.njit.edu/counseling/services/disabilities.php>.

Class Schedule

subject to change if/as needed

GREEN days in the schedule are offered as converged class meetings, which you can join in person (HC 210) or via WebEx

BLUE days in the schedule are faculty mentor OR student presentations, and will take place remotely via WebEx

BLACK days in the schedule are spent conducting research with your faculty mentor, and no M/W class meeting is required

RED notifications below indicate an assignment is due

Week 1: Introduction – CONVERGED CLASSROOM

1/20 – Introduction to Research and Class Procedures

Week 2: Research Foundations – CONVERGED CLASSROOM

1/25 – Research Questions and Social Research Methods

- Dixon, Singleton, and Straits, chapters 2 (“Science and Social Research”) and 4 (“Research Designs”)

1/27 – Literature Reviews and the Scientific Method

- Dixon, Singleton, and Straits, chapter 5 (“Measurement”) and 7 (“Experiments”)

Week 3: Choosing a Research Project – WEBEX MEETING

2/1 – Faculty Mentor Guest Lectures

- D Yvette Wohn [Informatics]

2/3 – Faculty Mentor Guest Lectures

- Yelda Semizer [Cyberpsychology]
- Maurie Cohen [STS]

Week 4: Choosing a Research Project – WEBEX MEETING

2/8 – Faculty Mentor Guest Lecture

- Michael Lee [Informatics]
- Michael Ehrlich [Finance & Management]

2/10 – Faculty Mentor Guest Lecture

- Wen Zhang [Civil & Environmental Engineering]

Task #1 Due

Week 5: Building a Research Network – CONVERGED CLASSROOM

2/15 – Preparing to Join Labs

- Barwich, “The Value of Failure in Science”
- Eise, “What Institutions Can Do To Improve Science Communication”

Task #2 Due

2/17 – Ethics in Research

- Dixon, Singleton, and Straits, chapters 3 (“The Ethics and Politics of Research”)
- Review CITI Procedures

Week 6: Mentor Meetings – MEET IN LABS/ALTERNATE LEARNING SPACE, AS DIRECTED BY MENTOR

2/22 – Lab Practicum

2/24 – Lab Practicum

Week 7: Mentor Meetings – MEET IN LABS/ALTERNATE LEARNING SPACE, AS DIRECTED BY MENTOR

3/1 – Lab Practicum

3/3 – Lab Practicum

Task #3 Due

Week 8: Mentor Meetings – MEET IN LABS/ALTERNATE LEARNING SPACE, AS DIRECTED BY MENTOR

3/8 – Lab Practicum

3/10 – Lab Practicum

Task #4 Due

Week 9: SPRING BREAK

Week 10: Research Proposal Workshop - CONVERGED CLASSROOM

3/22 – Writing a Research Proposal Part 1

- Sample Research Proposal 1 (with comments)

- ["Organizing Your Social Sciences Research Paper: Writing a Research Proposal."](#) University of Southern California Libraries, Jan. 15, 2019.
- ["How To Prepare a Research Proposal."](#) Al-Riyami, *Oman Medical Journal* 2008 PMID: [22379539](#).
- [3/24 – Writing a Research Proposal Part 2](#)

Week 11: Rough Draft Workshop & Lab Work

[3/29 – Peer Review](#)

Task #5 Due

3/31 – Lab Practicum

Week 12: ‘Short Talk’ Presentations – WEBEX MEETING

[4/5 – Group A Presenting via WebEx](#)

[4/7 – Group B Presenting via WebEx](#)

Week 13: Mentor Meetings – MEET IN LABS/ALTERNATE LEARNING SPACE, AS DIRECTED BY MENTOR

4/12 – Lab Practicum

4/14 - Lab Practicum

Week 14: Presentations and Poster Sessions

[4/19 – Presentations – First Cycle](#)

[4/21 – Presentations – Second Cycle](#)

Week 15: Student Presentations

[4/26 – Presentations – Third Cycle](#)

[4/28 – Presentations – Fourth Cycle](#)

[Final Proposal/Poster and Literature Review Due by midnight on Friday, May 7](#)

Helpful Links

- The NJIT Undergraduate Research and Innovation Program’s website has information aimed at the undergraduate researcher. The research proposal assignment for this course will follow the formatting and content instructions for the NJIT Provost Summer Undergraduate Research and Innovation Program. Alternatively, with permission of the instructor, the proposal can follow the guidelines for the Undergraduate Research and Innovation Student Grant.

<http://centers.njit.edu/uri/programs/index.php>

- To participate in research at NJIT, certain safety-related training courses offered by Environmental Health and Safety may be required. Students are encouraged to attend both the “Lab Safety Training” AND the “Biological Safety and BBP Training” at the beginning of the Spring 2020 semester. The course schedule can be found at the following link:

<http://www.njit.edu/environmentalsafety/training-0/>

- NJIT offers the Collaborative Institutional Training Initiative (CITI) Program to provide online, interactive courses on topics related to research (administration, ethics, safety). The CITI course on the “Responsible Conduct of Research” (<https://about.citiprogram.org/en/series/responsible-conduct-of-research-rcr/>) is required as a way of providing thorough training on research ethics.