Seminar: Introduction to STEM Research
INDS 1001 (39234)
Spring 2020
(1-credit)

Instructors: Prof. Lesley Davenport (ldvnport@brooklyn.cuny.edu) and

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Class Schedule: Weekly on Thurs. (1:00-2:00pm) in 3408BH, Boylan Hall

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Course Description:

Introduction to STEM Research is a pass/fail 1-credit seminar course designed for Freshman students interested in pursuing careers in the science, technology, engineering and mathematics (STEM) fields. This seminar is broad-ranging and intends to give students exposure to the many possible STEM careers, both in and outside of academia. The course will consist of a mixture between in-class lessons and activities, attendance of departmental seminar talks and presentations given by invited guests, which may include undergraduate and graduate research students, departmental representatives, faculty, industry members and representatives from various governmental agencies. Emphasis will be placed on undergraduate research opportunities and how to leverage that experience in pursuing post-graduate opportunities.

Learning Objectives:

After completing this seminar students should:
- Have basic understanding of the scientific process and fundamental research principles
- Have basic knowledge about the potential benefits of undergraduate research in pursuing careers in STEM
- Obtain exposure to the different types of STEM research being conducted on campus
- Learn about funding opportunities on campus for undergraduate research

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Course Schedule and Topics:

Class meets weekly on Thursdays, 1:00pm–2:00pm in the Chemistry Office Library located in 3408BH.

Office Hours:
Weekly office hours for both Professor Davenport will follow immediately after the seminar class (2:30pm – 3:30pm) in 344NE. You may also attend general office hours posted for the professors if more convenient for you:

Prof. Davenport (Tues: 6:30pm–7:30pm; Thursday: 2.30pm-3:30pm and 6:30pm-7:30pm, or by appointment) in 344NE.

Week	Date (Thurs)	Topic	Assignment
1	January 30	*Syllabus Review and Introductions*	None.
2	February 6	*How do Researchers Communicate (Part I)?* New York Times to Peer-Reviewed Research Articles. <u>In-Class Activity</u>: Includes a visit to the Brooklyn College Library for a presentation by Prof. Jane Cramer on using the library for scientific research; Interlibrary loans; Remote access to electronic research journals.	Write a summary of presentation.
3	February 13	*Fundamental Research Principles* Introduction to the scientific method; The lab notebook; Introduction to Peer-Review; Safety.	Write a summary of discussions.
4	February 20	*The Importance of Time-Management.* <u>In-Class Activity</u>: Includes a visit to the Brooklyn College Learning Center (1300 Boylan) for a presentation by Professor Richard Vento on tutoring services in STEM-based courses.	Write summary of presentation/talk.
5	February 27	*Introduction to Scientific Ethics* Conflicts of Interest; Protecting your discoveries. <u>In-Class Activity</u>: Reading and analyzing a case study	Write a summary of discussions.
6	March 5	*Sharing Research and Class Data with Colleagues* Use of Dropbox, Blackboard, etc. <u>In-Class activity</u>: Includes a visit to the BC-Library for a workshop on the use of Blackboard	Write summary of presentation/talk.
7	March 12	*How do researchers communicate (Part II)?* Journal articles, presentations, conferences <u>In-Class Activity</u>: Reading and dissecting journal articles. Selection of journal articles for review.	Write summary of article assigned in class. Select a journal article for review.
8	March 19	*How do researchers communicate (Part III)?* <u>In-Class Activity</u>: Review of chosen journal articles. Student presentations/talk.	Write evaluation of one of the presentations.
9	March 26	*How to Present Data.* Class will meet in the Chemistry Computer room. Critical evaluation of data; Significance of data <u>In-Class Activity</u>: Use of Excel to plot X,Y data; Linear Regression.	Prepare a linear plot of assigned data set.
10	April 2	*How do researchers fund their projects?* Introduction to types and sources of research funding. Focus on available undergraduate research programs available (at Brooklyn and outside). <u>In Class Activity</u>: Visit by BC-STEM program coordinator.	Write a summary of presentation/talk
	April 9 & 16	Spring Recess – NO class	
11	April 23	*Identifying Research Interests* Selection of two Faculty members in your department of interest for interview. <u>In-Class Activity</u>: Preparation of questions for faculty interviews; Practice interviews.	Identification of research interests.
12	April 30	Introduction of final project: writing a research statement of interest. <u>In-Class Activity</u>: Organization of the research statement.	Start research for written statement of interest
13	May 7	Hand-in draft of research statement of interest Student Research Symposium <u>In-Class Activity</u>: Attend Science Day, the Brooklyn Student Research Poster Presentations.	Write a brief summary of three poster presentations which interested you.
14	May 14	*You like STEM – now what?* Exploring advance studies, career paths and job opportunities open to students with STEM degrees. Meet with doctoral students. Hand in final research statement of interest.	None

Required Readings:
Any required reading materials will be distributed in class by instructors.

Attendance Policy:
Attendance is mandatory. Documentation is required for excused absences.

Grading:
Grading is pass/fail, which will be determined by attendance, in-class participation, completion of in-class and homework assignments, attendance of Student Research Symposium and the final project (research statement of interest).

Accommodating Disabilities:
In order to receive disability-related academic accommodations, students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell (vstewart@brooklyn.cuny.edu) at 718-951-5538. If you have already registered with the Center for Student Disability Services, please provide your professor with the course accommodation form at the **beginning of the semester**, and discuss your specific accommodation with him/her.

Student Bereavement Policy:
Students who experience the death of a loved one must contact the Division of Student Affairs, 2113 Boylan Hall, if they wish to implement either the Standard Bereavement Procedure or the Leave of Absence Bereavement Procedure:
(http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php).

Academic Integrity:
The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Policy on Academic Integrity and the Brooklyn College procedure for implementing that policy can be found at this site: http://www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation confirms that violation, or if the student admits the violation, the faculty member MUST report the violation. All students should read carefully and thoroughly the 2019-2020 Brooklyn College Bulletin for a complete listing of academic regulations of the College:
(http://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php).

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