**Research in the Curriculum Department of Natural Sciences**

Research in the curriculum in the Department of Natl. Sc. at LaGuardia CC, is understood as the practice where research activities or projects, embedded in the curriculum and incorporated into the classroom, are designed to move students from observers of science to science practitioners, promoting critical thinking, contributing new information to the body of scientific knowledge, building communities both within and outside the classroom, sparking curiosity and understanding of the interrelationship between science and society.

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| **Course** | **Research Project** | **Nature** **of Activities** | **Description** | **Semester(s) Implemented** |  **# of sections** | **Faculty developing/****implementing** | **Larger Initiative/Other notes or comments** | **Core Competency/ability** |
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| BiologySCB 201 | Effect of Newtown Creek water on *Drosophila* viability |   | Project work outside regular lab |   |   | Dr. Charles KellerDr. Na Xu |   |  |
| BiologySCB 201 | Water QualityEast River/Oyster BayEast River/Oyster Bay Metagenomics | Laboratory based analysisSemester-long Research Project | Modification of 9 labs, flipped class -course, objectives not modified. Students learn concepts and apply different techniques to discover physical, chemical and biological characteristics, of water samples (results of experiments are unknown to them or their instructors) | Fall 2017Spring 2018 | 41 | Dr. Maria EntezariDr. Lucía Fuentes |   | Inquiry and Problem SolvingIntegrativedigital/oral<https://www.tandfonline.com/doi/full/10.1080/20004508.2020.1716542>[http://academicworks.cuny.edu/lg\_oers/8](http://academicworks.cuny.edu/lg_oers/8/) |
| Cell BiologySCB-255 |  Molecular cell biology of reproduction and development | Lab and lectures | Project done over weeks 4-12 of the course | Ongoing, since 2012  | 1 or 2 sections/semester offered  | Dr. Thomas Onorato  | Was funded TRAIN Grant (just ended)  | Inquiry and Problem SolvingWritten communication |
| MicroSCB-260 | 1. Soil microbiology2. Microbes in Organic vs. non-organic produce3. Isolation, ID of Microbes from money4. Microbes in my kitchen sink Newtown Creek Water Metagenomics | Laboratory based Analysis  Laboratory based Analysis  | Alternative molecular methods of microbial identification are introduced in lab. Course objectives are modified slightly to encourage scientific research, & development of analytical and critical thinking skills during the identification of individual unknown project  | Fall 2014Fall 2015Fall 2016 Spring 2017 Fall 2017 | 11 11  4 | Dr. Olga Calderón Dr. Olga Calderón Dr. Olga Calderón Dr. Olga CalderónDr. Ingrid Veras  Dr. Joby Jacob Dr. Olga Calderón Dr. Olga Calderón |  CCURI  | IPS - WID IPS - WID IPS - WID  IPS   IPS IPS IPS IPS - WID |
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| Envi. ScieCapstone(SCG250) | Newtown Creek, Hudson River, Flushing Creek/Bay, other NYC waterways | Laboratory based analysis  |  Students collect weekly water samples and test them for metals and polyatomic ions in lab every week as independent, semester-long, research projects. |  Every Spring semester since 2012 (course runs only in Spring) |  1 (only 1 section currently offered) | Dr. Holly Porter-Morgan  |   |  |
|  GIS (SCG150) | New York City Environmental Hazard  | Lab-based (GIS is a computer skill, so…)  | Students collect online data on environmental hazards (TRIs, brownfields, csos) map it and do spatial analysis to determine who lives near it and if there is an environmental justice issue. Expanding to include field component with air pollution data collection this fall with Keller and Alberts. |  Either Fall I or II since 2012 | 1 or 2 sections.  | Dr. Holly Porter-Morgan  |   |  |
| ChemistrySCC-201 | Chemistry of Newtown Creek water | Laboratory based analysis  | Modification of 3 labs |  Fall 2017 |  2? | (Dr. Jennifer Vance)Dr. Kevin Mark | CCURI? | Inquiry and Problem Solving Written |
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Research initiatives “out of classroom”

CRSP

NIH-Bridges

CCURI