



**Urban Advantage Professional Learning:
Description of Course Formats
and Professional Learning Category Descriptions and Goals**

for

**Continuing Teachers
In Years 2 through 5**

And

Alumni Teachers

2023-2024

updated on 08/31/2023

***Full course descriptions can also be found when you click the green CTPL Preference button
in myUA (<https://myua.amnh.org>)***



American Museum
of Natural History

Bronx Zoo
A Wildlife Conservation Society Park



New York Aquarium
A Wildlife Conservation Society Park

NYBG



Queens Botanical
Garden

ZOO
Staten Island

NYC
Public Schools

This document is subject to revision; for the most current version consult the UA Portal:

<https://myua.amnh.org>

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Course Formats: Definitions

All Urban Advantage Professional Learning will take a wide variety of formats. We hope this mix will provide you with options that suit your learning preferences and schedule. In the course descriptions you will see the following terms used:

- **IP (In-person)**: The course is in-person at one or more institutions
- **IPO (In-Person & Online)**: Some in-person sessions and some online work, either on Zoom or Moodle
- **OZM (Online Zoom & Moodle)**: All online via Zoom and some self-paced work on Moodle
- **OM (Online Moodle)**: All self-paced work on Moodle
- **OZ (Online Zoom)**: All online via Zoom

For courses with an online component (OZM, OM, OZ), pay special attention to these terms which describe how you will participate in learning for a specific day of the course:

- **Zoom**: All course participants are online at the same time, **LIVE via Zoom**.
- **Moodle**: Can work on assignments on own schedule within a given span of days. This will happen via our “Moodle” online platform (more on that below).

Other Terms:

- **Hosting Institution**: This is the institution that will be organizing and facilitating the course.
- **Moodle**: The platform that we use to host our written course discussions, share videos and other resources, hand in assignments, and complete various online activities.

To access Moodle for the self-paced parts of courses, you will log-in to the portal via your “myUA” account at <https://myua.amnh.org> and, once registered, your courses will appear in the “My Events” table on the right of your “Dashboard” or home screen, an example here:

View / Download UA Policy Documents

My Events 2019 - 2020 ▼				
Please click on column header to sort.				
Export ▼				
View	Event Name & Dates	Att. Status	Change	Unregister
Q Details Go to Course	Science Practices in Darwins Garden Day 1 (136) updated • 4/19/2020	Attended Instr		

You will click on the yellow “**Go to Course**” button to get to the self-paced online portion of your course on Moodle.

Computers vs Phones:

For the live sessions, we use Zoom and often a variety of tools such as “Padlets” and “Jam Boards” which can be tricky on mobile phones and small screens; for example Jam Boards require you to download an App to be used on cell phones. **We recommend using a computer**, but we do understand that is not always possible.

Course Category Descriptions and Goals

The following pages contain general descriptions and goals for each course level in our Continuing Teacher Professional Learning catalog. Please note that your instructors will be sharing your course specific goals, and specific deadlines for completing course work in the logistics email that goes out to you once you are officially registered.

Category 100: Using the science and engineering practices to explain phenomena and design solutions: focusing on 4 methods of explaining phenomena and solving design problems

- Planning and carrying out experiments to construct explanations of phenomena
- Planning and carrying out field studies to construct explanations of phenomena
- Using the engineering practices to solve design problems
- Planning and carrying out secondary research with online data to construct explanations of phenomena

Course description:

Participants will learn to support students in constructing explanations of phenomena and solving authentic problems while engaging in the science and engineering practices described in the New York State P-12 Science Learning Standards. Participants will learn in the context of high-leverage teaching practices used to model UA scaffolding tools (such as the IDD and DSET). Pedagogical practices and strategies will be foregrounded that support student sense-making in science over time, and ultimately support students asking questions (for science) and defining problems (for engineering), planning and carrying out investigations, analyzing and interpreting data, and constructing explanations (for science) and designing solutions (for engineering).

Two- and Four-day courses available:

Two-day equivalent courses (10 hours of work) are intended for teachers in their **2nd year or more** of UA.

Four-day equivalent courses (20 hours of work) are intended for teachers in their **2nd and 3rd years** of UA.

Prerequisites:

These courses are intended for teachers who have been in UA for 1 or more years with an interest in learning to plan and carry out specific types of scientific investigations that they DID NOT explore during previous PL courses (Cycle 2 or Continuing Teacher PL).

Learning goals for this course type may include:

- Improve teachers' capacity to access high-quality science content online and in-person through NYC's science-rich UA partner institutions, and to access additional resources beyond the classroom, both virtually and in-person, especially in NYC's natural and built setting, with the goal of growing students' science literacy.
- Develop and deepen teachers' capacity to integrate learning tools that support student dialogue, observations, and scientific investigation.

- Develop and deepen teachers' capacity to integrate into their classrooms high-leverage teaching practices that support student sense-making in science over time, and more broadly support the new NYS P-12 Science Learning Standards.
- Develop and deepen teachers' capacity to employ UA scaffolds to engage with their students in the practice of planning and carrying out science and engineering investigations, including controlled experiments, field studies, design problems and secondary research (NYS P-12 Science Learning Standards).
- Develop and deepen teachers' capacity to employ UA scaffolds, such as the IDD and DSET, to support students engaging in other key practices such as asking questions (for science) and defining problems (for engineering), analyzing and interpreting data, and constructing explanations (for science) and designing solutions (for engineering).
- Deepen teachers' understanding of the 3 dimensions of science instruction, including disciplinary core ideas, science and engineering practices, and cross-cutting concepts.
- Deepen teachers' capacity to share with, collaborate and seek assistance from their UA community.

Participation in this course will include one or more of the following:

- The 4-day versions of the Category 100 courses will introduce how to plan and carry out a complete investigation to explain a specific type of phenomenon, including how to construct an explanation.
- The 2-day versions of the Category 100 courses will introduce how to plan an investigation with the goal of explaining a specific type of phenomenon or design a solution. However, a culminating explanation or design solution may be outside the scope of the course. The priority will be to ask questions (for science) and define problems (for engineering), and to plan the investigation or design solution.
- Participants may be introduced to UA scaffolding tools (such as the IDD and DSET) that have been modified to support explaining specific types of phenomena or design problems.
- Participants may use institutional resources to deepen knowledge of science content and practices to support explaining a phenomenon.

Category 200: Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course description:

Participants take a deeper dive into teaching practices and scaffolding tools that help students construct explanations (for science) and design solutions (for engineering). This work includes explorations of related practices that support gathering scientific evidence, such as planning and carrying out investigations, and analyzing and interpreting data, among others. Scaffolding and teaching practices, presented in the context of resources at UA partner institutions, will be explored in support of the New York State P-12 Science Learning Standards.

Prerequisites:

Possible prerequisites around specific methods of figuring out phenomena and solving design problems may apply. See specific course prerequisites for details.

Learning goals for this course type may include:

- Improve teachers' capacity to access high-quality science content online and in-person through NYC's science-rich UA partner institutions, and to access additional resources beyond the classroom, both virtually and in-person, especially NYC's natural and built settings, with the goal of growing students' science literacy.
- Develop and deepen teachers' capacity to integrate learning tools that support student dialogue, observations, and scientific investigations.
- Develop and deepen teachers' capacity to integrate into their classrooms high-leverage teaching practices that support student sense-making in science over time, and more broadly support the new NYS P-12 Science Learning Standards.
- Develop and deepen teachers' capacity to employ UA scaffolds to engage with their students in the practice of planning and carrying out science and engineering investigations, including controlled experiments, field studies, design problems, and secondary research (NYS P-12 Science Learning Standards).
- Develop and deepen teachers' capacity to employ UA scaffolds, such as the IDD and DSET, to support students engaging in other key practices such as asking questions (for science) and defining problems (for engineering), analyzing and interpreting data, and constructing explanations (for science), and designing solutions (for engineering).
- Develop and deepen teachers' capacity to modify and differentiate UA scaffolds to support students with special learning and language needs.
- Deepen teachers' understanding of the 3 dimensions of science instruction, including disciplinary core ideas, science and engineering practices, and cross-cutting concepts.
- Deepen teachers' capacity to share with, collaborate, and seek assistance from their UA community.

Participation in this course will include one or more of the following:

- Exploration of various strategies to support ELL students and Special Education students
- Application of various teaching strategies and scaffolding tools, such as the IDD, DSET and others, that support analyzing and interpreting data sets, and support student sense-making in science over time.
- Exploration of new content areas beyond a previous experience with a particular investigation strategy.

Category 300: Courses on science content and practices

Course description:

Participants will reflect on how research on learning can inform their teaching practice and support 3-dimensional learning based on science and engineering practices (SEPs), cross-cutting concepts (CCCs), and disciplinary core ideas (DCIs). Using research on teaching and learning, the NSTA Atlas of the Three Dimensions, other NGSS resources and UA Partner institutional resources, participants will explore a given science topic and/or science practice, including:

- the development of SEPs, CCCs, and DCIs across grade levels (learning progressions)
- common misconceptions
- connections to UA Partner institutional resources and SEPs foregrounded in UA professional learning

Following a variety of strategies to explore science content, we will utilize diverse resources, including the NGSS Standards and Appendices, A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas, The NSTA Atlas of the Three Dimensions, The NSTA Quick-Reference Guide to the NGSS, K-12, and Disciplinary Core Ideas: Reshaping Teaching and Learning, as well as partner institutional resources, to explore these topics.

Prerequisites:

Available to teachers who have completed 3 or more years of Urban Advantage. These courses are intended for teachers who have been implementing UA tools and practices in their classrooms and are ready to take a deeper look at current research on teaching practices, learners' needs, and goals in particular science content areas.

Learning goals for this course type may include:

- Improving teachers' capacity to access high-quality science content online and in-person through NYC's science-rich UA partner institutions, and to access additional resources beyond the classroom, both virtually and in-person, especially NYC's natural and built settings, with the goal of growing students' science literacy.
- Developing and expanding upon teachers' capacity to integrate learning tools that support student dialogue, observations, and scientific investigation.
- Deepening teachers' understanding of the 3 dimensions of science instruction, including disciplinary core ideas, science and engineering practices, and cross-cutting concepts.
- Developing teachers' capacity to surface student ideas and support ongoing growth in student conceptions through readings on topics such as developmental sequences, common misconceptions, and what a scientifically literate adult should know about a content area.
- Engaging teachers with their UA community to share, collaborate, and seek assistance from their UA peers.

Participation in this course will include one or more of the following:

- Participants may read from a variety of references on topics such as developmental sequences, common misconceptions, and what a scientifically literate adult should know about a content area.
- Participants may utilize resources of Science-Rich Cultural Institutions to explore science content; for example: doing activities in the AMNH Birds of the World Hall to explore concepts around adaptation.

Related References:

- [The NSTA Atlas of the Three Dimensions](#), by Ted Willard, ISBN: 9781938946080
- [Disciplinary Core Ideas – Reshaping Teaching and Learning](#)

- [Next Generation Science Standards](#)
- NSTA Quick Reference Guide to the NGSS, K-12 ([Elementary](#), [Middle School](#), [High School](#), [K-12](#))
- [Uncovering Student Ideas series](#)
- NSDL Strand Maps <http://strandmaps.nsdl.org/>
- American Association for the Advancement of Science
- [Benchmarks for Science Literacy](#) & [Science for all Americans](#)
- [Curriculum Topic Study Project](#)
- Diver, Rosalind et al., Making Sense of Secondary Science, Routledge, 1993
- [A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas \(2012\)](#)
- [Surrounded by Science: Learning Science in Informal Environments \(2010\)](#)
- [Teaching for Conceptual Understanding in Science, NSTA \(2015\)](#)

Category 400: Courses on reflective practice

Course description:

Using protocols for analyzing and reflecting on student work and teaching practices, participants will engage in opportunities to address key questions around student learning of science content, and will reflect on high-leverage teaching practices that support student sense-making in science over time. Teachers will engage in collaborative, critical, and supportive dialogue using methods that may include examinations of student work, lesson plans, a puzzle of practice, and/or video of classroom teaching.

Note: These are 3-day (15 hour) professional development courses.

Prerequisites:

Available to teachers who have completed 3 or more years of Urban Advantage. These courses are intended for teachers who have been implementing UA tools in their classroom for 3 or more years and are ready to reflect on their teaching and student learning and refine their teaching practice.

Learning goals for this course type may include:

- Developing and deepening teachers' capacity to employ UA scaffolds to engage their students in explaining phenomena and designing solutions through applying the SEPs, DCIs and CCCs (NYS P-12 Science Learning Standards)
- Deepening teachers' capacity to improve their pedagogical practices through purposeful reflection that supports students in science by developing inclusive, equitable practices in the classroom
- Engage teachers with their UA community to share, collaborate, and seek assistance from their UA peers.

Participation in this course will include one or more of the following:

- Participants, with the support of protocols and community building exercises, will examine and reflect on student work with the goal of surfacing student thinking.
- Participants will engage in a collegial and collaborative learning experience where teachers will explore a puzzle of practice related to their teaching, and identify and develop opportunities to provide additional support and scaffolds to their students.
- Participants will present a puzzle of practice related to explaining scientific phenomena, and engage in a protocol to think about ways to improve their work.
- Participants will use video of themselves teaching to provide feedback to each other through protocols about specific instructional practices related to explaining scientific phenomena

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 111

Title: Controlled Investigations: Investigating Water Turbidity

Host Institution: NYA

Course Format: IP: All In-Person (key below)

Dates 5/5/2024, 5/19/2024

Course Description: Use the shore as your personal classroom, while investigating reasons to explain the turbidity – or cloudiness – of our local waters. Participants will be introduced to the ecological phenomenon of water turbidity, as well as the tools and techniques necessary to plan and carry out a controlled investigation at the beach. Skills to be covered include identifying variables, designing a controlled investigation, and collecting data.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 116

Title: Surveying Animal Populations

Host Institution: BXZ

Course Format: IP: All In-Person (key below)

Dates 10/16/2023, 10/23/2023

Course Description: One of the first steps that scientists take in designing a species conservation plan is determining how many individuals are in a given location. In this course, participants will learn about some of the tools and techniques that conservation biologists use to determine the relative abundance of organisms in a specific area, including using transects and quadrats. By conducting their own population survey at the Zoo, participants will gain additional content and pedagogical knowledge to aid students in designing strong field investigations that will help them to develop a better understanding of the nature of science, local species, and urban ecosystems.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 121

Title: Introduction to Field Studies in Phenology

Host Institution: BBG

Course Format: IP: All In-Person (key below)

Dates 4/13/2024, 5/4/2024

Course Description: Participants will learn strategies for developing questions about the relationship between a tree's environment and its life cycle. Phenology is the study of how plant life cycle events are affected by seasonal change. In exploring the trees at BBG and in our own backyards and school communities, we will build facility with both content and the science practices while thinking about the ecological significance of the timing of life cycle events in plants native to our region. This course will also provide an introduction to Place-based pedagogy and its potential value in the science classroom and prepare teachers to extend tree exploration to their school communities.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 129

Title: Secondary Research Investigating Amphibian Populations

Host Institution: BXZ

Course Format: IP: All In-Person (key below)

Dates 12/9/2023, 12/16/2023

Course Description: Amphibians are considered to be strong indicators of environmental health and their populations have declined significantly in recent decades. In this course, participants will gain additional content knowledge and pedagogical skills to aid their students in investigating evidence obtained from secondary data sets from FrogWatch, a citizen science program of the Akron Zoo. Participants will study frog and toad populations by observing amphibians at the zoo and using secondary data to create and analyze graphs. Participants will also learn about information and resources that will help them to use this free online software in their classrooms and to plan field trips to the Zoo that link scientific investigations to the curriculum.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 132

Title: Controlled Investigation Bounce Factor

Host Institution: NYSCI

Course Format: IPO: In-Person and Online (Zoom and/or Moodle) (key below)

Dates 4/7/2024, 4/14/2024

Course Description: This experience focuses on the development of controlled experiments using sixth grade content. Using how balls bounce as an anchor phenomenon, participants will explore how to plan and carry out controlled experiments using handballs bouncing on a variety of different surfaces. Using background research and the data collected from these experiments, participants will construct strong scientific explanations that support their experimental claim with scientific reasoning and evidence.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 139

Title: Investigating Plant Pigments

Host Institution: QBG

Course Format: IP: All In-Person (key below)

Dates 1/10/2024, 1/17/2024

Course Description: What can you do with plant pigments and what do they have in common with photographs?
In this course we will engage in multiple science demonstrations involving light and plant pigments and work together to turn these fun models into in-depth classroom explorations of science practices and make curricular connections that can support students' sense making.

The PL will be conducted in person at the Queens Botanical Garden.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 140

Title: Wildlife CSI: Uncovering Evidence of Illegal Wildlife Trade

Host Institution: SIZ

Course Format: IP: All In-Person (key below)

Dates 11/15/2023, 11/29/2023

Course Description: Global trade is in constant motion, but what happens when trade shifts into illegal activity? How does this illegal activity impact ecosystems, and the daily lives of people around the world? In this course we will explore the answers to these questions by investigating the inner workings of the Illegal Wildlife Trade, examining global efforts to combat this illegal activity, and evaluating the relationship between society and conservation. This course is presented in partnership with the US Fish & Wildlife Service, and participants will hear from Wildlife Inspectors about the toolsets and observational skills they employ to identify, seize, and prosecute those individuals involved in illegal trade. During the sessions participants will analyze how to make connections between the unique and sad phenomena of wildlife trafficking and classroom curriculum. While this topic can be heavy, it highlights the intersection of zoos and conservation which if taught in a way that supports science learning can empower students to use their knowledge and their voice to make a positive impact on the world.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 141

Title: Not Your Average Scientist: Engaging in Community Science

Host Institution: SIZ

Course Format: IP: All In-Person (key below)

Dates 10/18/2023, 11/1/2023

Course Description: If you were asked to describe a scientist, what would you say? You may automatically think of someone in a long white coat with goggles carrying out precise experiments in a lab full of expensive equipment. There are many scientists who would fit that description, but truly ANYONE can be a scientist and science learning can happen in the most unlikely places. In this course, participants will learn about various ways to experience science learning in these unlikely places, and how they can engage their students in community science projects that make an impact on the greater scientific community. In-person sessions will give participants the opportunity to explore how to make connections between community science and curriculum and choose projects that will help support students' science learning. Participants will also discover ways to utilize community organizations and institutions as resources for the classroom, and begin to foster relationships that can support them in engaging in community science with their students. Come join SIZ, along with other community organizations, to learn more about the impact that community science can have on your classroom!

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 142

Title: Science Practices in Turners Lab

Host Institution: AMNH

Course Format: IP: All In-Person (key below)

Dates 1/20/2024, 2/3/2024

Course Description: Participants will explore NGSS Science Practices and the Nature of Science through observing the world around us, and exploring investigations conducted by the incredible African American Biologist, Charles H. Turner, PhD, on ants and cockroaches around the turn of the century. We will utilize Museum exhibitions, primary source documents (some of his over 70 research papers), and insect observations of our own. This course explores characteristic behaviors in insects (LS1.B) and focuses on developing an understanding of the enterprise of science as a whole—the wondering, investigating, questioning, and data collecting and analyzing (Appendix H).

Prerequisites:

For teachers who have been in UA for 1 or more.

Special Reference(s):

[APPENDIX F – Science and Engineering Practices in the NGSS](#)

[NGSS APPENDIX H – Understanding the Scientific Enterprise: The Nature of Science in the NGSS](#)

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 143

Title: Exploring Local Phenomena: The Bronx River

Host Institution: NYBG

Course Format: IP: All In-Person (key below)

Dates 5/5/2024, 5/19/2024

Course Description: The Bronx River, the only freshwater river in NYC, has been undergoing environmental restoration for decades. However, NYS Department of Environmental Conservation data shows water quality remains impaired. Now, waterfront development may impact what improvement has been made. Participants will explore a local watershed and use models to predict environmental impact.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 100 Using the science and engineering practices to explain phenomena and design solutions

Course Number: 144

Title: Enriching Design: Engineering Enrichments for Animals in Human Care

Host Institution: NYSCI, SIZ

Course Format: IP: All In-Person (key below)

Dates 3/5/2024, 3/26/2024, 4/16/2024, 5/7/2024

Course Description: This dynamic course focuses on integrating innovative strategies encompassing animals in human care and NGSS engineering practices. Offering a unique perspective that bridges biology and engineering, participants will have the opportunity to create enrichments for animals in human care. Participants will engage in a four-day experience, immersing themselves in sessions at both the Staten Island Zoo (SIZ) and the New York Hall of Science (NYSCI), in order to explore a diverse range of insights and resources, exemplifying the interdisciplinary nature of science instruction.

*Please note that you will be required to go to BOTH institutions IN-PERSON (2 sessions at each institution). Participants are required to attend all 4 sessions.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
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OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 201

Title: Analyzing and Interpreting Data: Field Study Investigations

Host Institution: NYA

Course Format: IP: All In-Person (key below)

Dates 2/27/2024, 3/5/2024

Course Description: Dive into the science practices! Participants will expand on statistical skills that are necessary to analyze and interpret field study investigation data and graphs. Skills to be covered will focus on utilizing graph options more appropriate for frequency data, as well as breaking down graph interpretation. This course assumes that participants already have a basic familiarity doing field study investigations. Participants will model using the aquarium and reference data for studies that can be investigated on field trips.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
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OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 203

Title: Analyzing and Interpreting Data:
Secondary Research Investigations

Host Institution: BXZ

Course Format: IP: All In-Person (key below)

Dates 11/1/2023, 11/8/2023

Course Description: Engage in a secondary research investigation to strengthen your own competency in analyzing complex animal behavior data in order to develop a strong scientific explanation rooted in empirical evidence. This workshop will include analyzing animal data using measures of center and variation while using scaffolding techniques. There will be opportunities to share ideas with colleagues and to examine student work, and each participant will receive valuable resources for reference at the conclusion of the workshop.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 222

Title: Asking Questions About Reproduction & Heredity

Host Institution: BBG

Course Format: IP: All In-Person (key below)

Dates 12/5/2023, 12/12/2023

Course Description: Using research-based findings on teaching and learning, participants will focus on the practice of Asking Questions as defined in "A Framework for K-12 Science Education". Keeping with the spirit of the new standards, we will be exploring a naturally-occurring phenomenon that arises when organisms reproduce and pass traits to offspring. This phenomenon will be the frame for our examination of how student questions can be harnessed to drive instruction that in turn, guides them toward constructing their own explanations.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 225

Title: Amplifying Underrepresented Voices in Nature

Host Institution: QBG

Course Format: OM: All Online- Self-Paced (All Moodle) (key below)

Dates 1/8/2024 through 1/24/2024

Course Description: Teachers will participate in observation activities in the outdoors and consider how to incorporate observation routines and nature in their classrooms, for both online and in-person instruction. Through background readings, videos, and other resources, teachers will reflect on the ways in which aspects of their identity shape their varied relationships with nature, as well as the relationships that their students have with nature and the outdoors. Teachers will engage with elements of the Culturally Responsive-Sustaining Education (CR-SE) Framework and create an actionable plan to amplify the voices of those who are underrepresented in nature within existing science curriculum.

This course is open from 1/8/2024 to 1/24/2024. While it is fully self-paced work online via Moodle, instructors will be available throughout the course to support you.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 226

Title: Developing Models with the Cultural Framework

Host Institution: BBG

Course Format: IP: All In-Person (key below)

Dates 2/4/2024, 2/11/2024

Course Description: Participants will take a deep dive into the practice of Developing & Using Models by constructing and revising a model to explain local phenomena. We will also explore ideas from the NYS Culturally Responsive-Sustaining Education Framework to consider how cultural perspective influences the types of models we develop and the arguments we construct about the effects of ecosystem change on populations of organisms.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 227

Title: March Mammal Madness: Bring the Madness to Your Classroom

Host Institution: SIZ

Course Format: OZ: All Online- Facilitated (All Zoom) (key below)

Dates 1/7/2024, 1/14/2024, 1/21/2024, 1/28/2024 (all via Zoom meeting)

Course Description: This course is all about bringing the madness of March Mammal Madness into your classroom! And by madness, we mean exciting, educational, and structured animal madness. Each year in March, animals from around the globe go head-to-head in a simulated battle called March Mammal Madness to determine the ultimate champion. This battle, inspired by the NCAA March Madness College Basketball Tournament, was created by Dr. Katie Hinde in 2013 as an exciting, unique tournament-style game backed by actual science. Through the use of storytelling (narrated by a talented team of scientists from universities around the US) participants learn about “interspecies interactions, the importance of ecological context, how natural selection has shaped adaptations, and conservation management of endangered species.” In this course, you will learn all about this fun, educational immersion into a virtual world of animal encounters and will receive tips and tricks for facilitating student engagement and incorporating March Mammal Madness into your curriculum.

*Please note that this course will be completely held ONLINE in the form of FOUR 2.5 hour facilitated Zoom sessions. Attendance and active participation in these Zoom sessions is required.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 228

Title: Developing and using models to make sense of systems through Hudson River Ecology

Host Institution: AMNH

Course Format: IP: All In-Person (key below)

Dates 10/28/2023, 11/4/2023

Course Description: Participants will explore several science practices, especially developing and using models to generate questions and explain phenomena, through a series of online resources developed by the Museum which include short documentary videos of scientists, parallel readings and real data collected by the Cary Institute of Ecosystem Studies and embedded in an online graphing tool for ease of use. The focus phenomenon is the arrival of the zebra mussel in the Hudson River and how it will affect various parts of the ecosystem.

Prerequisites:

Intended for teachers who have been in UA for 1 or more years with an interest in learning more about secondary research investigations and exploring the science practice of “Developing and Using Models”.

Special Reference(s):

<http://www.amnh.org/education/resources/rfl/web/riverecology/>

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 234

Title: Soils and Scientific Explanations

Host Institution: QBG

Course Format: IP: All In-Person (key below)

Dates 4/2/2024, 4/9/2024

Course Description: This course will examine the phenomena of flooding in Queens by examining the relationship between different types of soil and water. We will investigate properties of soil including permeability, particle size, and compaction. As we explore our phenomena we'll learn how to support students in constructing scientific explanations using claims, evidence, and reasoning.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 236

Title: Making Thinking Visible Through Models: Plant Structures and Functions

Host Institution: NYBG

Course Format: IP: All In-Person (key below)

Dates 3/3/2024, 3/17/2024, 4/7/2024, 4/14/2024

Course Description: Participants will engage as science learners in creating and revising scientific models to make sense of a physiological plant process. Learners will work together to consider various explanations and make arguments as they gather new evidence through direct interactions with plants, water and other materials as well as information from readings, diagrams and instruction. As teachers, participants will examine how the learning sequence was structured to support learners in activating and expressing prior understanding, guide learners in sense-making talk around new evidence, and scaffold efforts to integrate and articulate new understandings. Participants will be able to apply these structures and strategies to their own teaching in various content areas.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 200 Using science and engineering practices to explain phenomena and design solutions: diving deeper into scaffolding and teaching practices

Course Number: 243

Title: Making Thinking Visible

Host Institution: NYSCI

Course Format: OZM: All Online (Zoom and Moodle) (key below)

Dates 5/5/2024, 5/19/2024

Course Description: This experience focuses on broadening your definition of what student participation looks like. Sharing ideas, engaging in dialogue, and collaborating with peers are all fundamental components of how students construct and revise understanding in science. How can we support equity of voice and diverse ways of demonstrating understanding? Participants will identify teaching moves rooted in Ambitious Science Teaching to support students in sharing their science thinking in a range of ways.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 302

Title: CTS Science Content in Adaptation and Natural Selection

Host Institution: BXZ

Course Format: IP: All In-Person (key below)

Dates 4/6/2024, 4/13/2024

Course Description: Following the Curriculum Topic Studies (CTS) format we will utilize the AAAS Benchmarks for Science Literacy, the Atlas for Science Literacy, and a variety of other resources including exhibits at the Bronx Zoo and activities to explore the content goals and misconceptions surrounding adaptation and natural selection. Participants will explore research based findings on what students and adults should know about this topic, deepen content knowledge and reflect on what the research tells us and how that might impact our practice and our students' long term science investigations.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 308

Title: Shark Coexistence: Evidence and Explanation for Local Shark Interactions

Host Institution: NYA

Course Format: IP: All In-Person (key below)

Dates 5/3/2024, 5/10/2024

Course Description: How do we determine fact from frenzy? Making claims based on solid evidence and explanation enhances credibility. Sharks are fascinating to the public, yet media perception can cause mass misconceptions around these top ocean predators. The primary evidence being examined in this course will highlight the relationship between media coverage, shark incidents, and population changes. Shark perception will be explored in our Ocean Wonders: Sharks! exhibit. Based in the Curriculum Topic Study (CTS) model, participants will use research findings on teaching and learning to reflect on the impact of evidence and explanations in arguments. Participants will also work towards developing effective teaching strategies for strengthening science literacy in these areas.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 310

Title: EngineerED: Amplifying NGSS in Curriculum Planning

Host Institution: NYSCI

Course Format: IPO: In-Person and Online (Zoom and/or Moodle) (key below)

Dates 12/3/2023, 12/10/2023

Course Description: This UA course is designed to empower teachers with the essential skills and knowledge to enhance science instruction in two important areas: integrating engineering design components into lessons and promoting relevance and student-led discourse through the intentional adaptation of pre-created curriculum materials. This course will equip teachers with the tools they need to create an enriched learning environment that aligns with the Next Generation Science Standards (NGSS) and promotes active student engagement in the learning process.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 315

Title: Human Impact on Climate

Host Institution: NYA

Course Format: IP: All In-Person (key below)

Dates 2/6/2024, 2/13/2024

Course Description: How do human actions drive climate change? What effect does climate change have on New York City? How can humans work to mitigate the effects of climate change? In this course we will explore what it means to have a conceptual understanding of the cause and effects of climate change, as well as what students should understand in middle school. We will pay special attention to making learning personal and relevant, using the New York Aquarium itself to frame our learning about our changing climate.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 318

Title: CTS: Phases of the Moon

Host Institution: NYBG

Course Format: IP: All In-Person (key below)

Dates 1/14/2024, 1/28/2024

Course Description: How can we support students in constructing an understanding of moon phases, and how can we advance students' ability to engage in science learning by doing so? We will use the Curriculum Topic Study (CTS) format to explore research into what middle school students are developmentally capable of understanding about this topic and commonly held misconceptions; examine the core science ideas, cross-cutting concepts and science practices that students can use to make sense of this phenomenon; and consider implications for teaching this topic. We will examine how this topic is typically handled in classrooms and in commercially designed curricula such as Amplify, and consider how best to make modifications. This course will be mainly in-person. Two hours of asynchronous time before we meet will be used to begin to engage with your classmates around the topic of the moon, and to keep a moon journal.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 319

Title: Exploring Discourse and Seed Germination

Host Institution: QBG

Course Format: IP: All In-Person (key below)

Dates 2/8/2024, 2/15/2024

Course Description: How can you use conversation to explore the ins and outs of why and how seeds sprout? This course will use a discourse-based, constructivist approach that will lead to participants creating their own knowledge about seed germination.

Once we've explored the science we'll engage in deep exploration of the pedagogical research on student discourse in the classroom. We will work together to plan to increase student discourse and create a plan for implementation in your classroom.

The PL will be conducted in person at Queens Botanical Garden.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 320

Title: Unpacking the Culturally-Responsive Sustaining Framework

Host Institution: AMNH

Course Format: IP: All In-Person (key below)

Dates 12/3/2023, 12/17/2023

Course Description: What is CRSE (Culturally Responsive-Sustaining Education)? How might it look in our science classrooms? In this course, participants will unpack some of the research behind the NYS Culturally Responsive and Sustaining Framework and consider its implications for the science classroom. Some questions we may ask ourselves include: What is culture and what role does it play in the curriculum? What does SEL mean? How are we already supporting this with students? Teachers across grade levels will engage in collaborative, critical, and supportive dialogue as they self-examine aspects of their practice to exhume and reflect on their own cultural practices and how they manifest in their teaching. Open to Middle School Continuing Teachers and Elementary Alumni

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 323

Title: Evolving Landscapes: Exploring Biodiversity and Human Impact Through the Lens of Teaching and Learning

Host Institution: SIZ

Course Format: IP: All In-Person (key below)

Dates 12/2/2023, 12/16/2023

Course Description: This course is a Curriculum Topic Study (CTS), which is structured differently than other courses in Urban Advantage. While there will be some authentic science learning during the sessions, CTS work involves the systematic study of research and standards about science learning. As you progress through the CTS, the process provides resources that help improve classroom instruction, curriculum, and assessments. The topic for this course is Biodiversity and Human Impact. As we go through each session we will be unpacking misconceptions, diving into how students learn about this topic, and exploring how knowledge builds through grade levels. Join us in this course as we work to collectively develop a shared knowledge base that elevates teaching and deepens student understanding of the complex relationship between biodiversity and human activities.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 300 Courses on science content and practices

Course Number: 324

Title: Life at the Water's Edge: Ecosystem Stability, Disruptions, and Change

Host Institution: BBG

Course Format: IP: All In-Person (key below)

Dates 3/19/2024, 3/26/2024

Course Description: New York City is made up of numerous local wetland ecosystems. There have been disruptions to these throughout history, but many are undergoing restorations now to perform naturally under changing climate conditions. Participants will learn what makes plants in these ecosystems adapted to life on the water's edge and examine research on how to teach ecosystem stability and change through a curriculum topic study.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 408

Title: Teacher Practice in Coaching and Guiding Investigation Design

Host Institution: NYA

Course Format: IPO: In-Person and Online (Zoom and/or Moodle) (key below)

Dates 4/27/2024, 5/11/2024 (In-Person)
with online work via Moodle in between in-person sessions

Course Description: Teachers will engage in teacher-led coaching and questioning that will lead students to create rigorous and scientifically supported long-term investigations. This course emphasizes teacher collaboration and support from lead teachers in order to improve the implementation of science investigations in the classroom. Teachers will engage in collaborative, critical and supportive dialogue as they examine the strategies and artifacts they use to guide and support students in the design of their investigations.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 412

Title: Ambitious Science Teaching Book Group

Host Institution: NYBG

Course Format: OZM: All Online (Zoom and Moodle) (key below)

Dates 2/8/2024, 3/7/2024, 4/4/2024, 5/2/2024, 5/30/2024 (all via Zoom meeting) with online work via Moodle in between sessions

Course Description: Participants will work together to discuss and make sense of the book, *Ambitious Science Teaching* by Mark Windschitl, and workshop its practices in their classrooms. This course will meet over Zoom and require self-paced online work to read chapters from *Ambitious Science Teaching*, share ideas using Perusall, and apply ideas to personal practice. Zoom sessions will focus on discussing the reading and reflecting on classroom practice.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 452

Title: Framing Progress: Reflecting on Practice Using Video

Host Institution: AMNH, NYSCI

Course Format: IPO: In-Person and Online (Zoom and/or Moodle) (key below)

Dates 3/16/2024 (In-Person at AMNH),
4/6/2024 (via Zoom meeting),
4/13/2024 (In-Person at NYSCI)

Course Description: In this course, participants will focus on enhancing their teaching practice through video recording and reflection using the SWIVL platform. Throughout the program, participants will engage in a supportive community, where they will share recorded sessions and collaboratively reflect on pedagogical approaches using specific protocols. Participants will focus on the Ambitious Science Teaching principle of Eliciting Student Ideas, concentrating on how their teaching practice aligns with this principle. Through this reflective process, participants will develop actionable steps to increase the implementation of this principle in their classrooms.

*Please note that this is a 3 day course (2 in person and 1 online). You will be required to go to BOTH institutions in-person (1 session at each NYSCI and 1 Session at AMNH). Participants are required to attend all 3 sessions, as well as submit online work via Moodle.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 453

Title: Reflecting on Embedding Literacy Strategies in Science Curriculum

Host Institution: BXZ

Course Format: OZM: All Online (Zoom and Moodle) (key below)

Dates 1/10/2024, 1/17/2024, 1/31/2024, 3/6/2024 (all via Zoom meeting)

with online work via Moodle in between sessions

Course Description: The purpose of this course is to help teachers reflect on the use of literacy strategies in their classrooms. Throughout the duration of the course, participants will briefly review literacy strategies (e.g., summarizing, paraphrasing, interactive reading guides, and vocabulary instruction) and then select one strategy they would like to have more practice embedding into their science instruction. Next, they will discuss plans for implementation and get support and feedback from their colleagues and UA partners. They will modify and teach a lesson of their choosing with the selected literacy strategy. As a final reflection, teachers will share an artifact of student work to analyze with the group. As this course is entirely online, a minimum number of posts will be required to receive credit for completion, including posting a lesson plan, a student work artifact, a short reflection, and more.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 455

Title: Integrating Digital Museum Resources in Field Trip Planning

Host Institution: AMNH

Course Format: IPO: In-Person and Online (Zoom and/or Moodle) (key below)

Dates Online work via Moodle begins on 4/3/2024,
4/14/2024 (via Zoom), 4/21/2024 (via Zoom),
5/5/2024 (In-Person at AMNH)

Course Description: Cultural institutions increasingly produce digital learning resources and technologies to expand their education efforts in the ever changing digital world. This session will introduce participants to various digital resources made available by UA partner institutions and discuss the unique affordances of museum digital media and technologies. Participants will also reflect on how these resources can be utilized in their classroom and for field trip planning. The course will be held mostly online (via Moodle and Zoom) and culminates in a 3-hour workshop at the American Museum of Natural History's new Gilder Center for Science, Education, and Innovation.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 470

Title: Reflecting on Practice Through Inter-visitatation

Host Institution: AMNH

Course Format: IP: All In-Person (key below)

Dates 2/8/2024, 2/15/2024, Day 3 TBD

Course Description: Have you been looking for rich examples of what powerful science instruction can look like from your peers? In this course, participants will work closely with professional learning facilitators and the Urban Advantage Fellows (UAF) to develop the skills and mindset for reflecting on practice through inter-visitatation. The UAF is a professional learning community of veteran teachers who have successfully integrated the program's tools and resources, and cutting edge research on teaching and learning, into their practice. In this course, you will develop a repertoire of tools, which can be used to support individual growth and the development of a professional learning community. In addition, you will learn about and apply tools to record evidence of powerful science instruction as it pertains to a puzzle about one's own teaching practice. Finally, you will walk away having a deeper understanding of what rigorous science instruction looks and sounds like, and a set of tools for beginning to engage in inter-visitatation at your own schools. This course consists of two 5-hour days of professional learning and one 5-hour day observing the UAF's classroom (Date TBD).

Prerequisites:

Available to Continuing Teachers who have completed 3 or more years of Urban Advantage with approval from administrators to attend weekday PL. Teachers who register for this course will be expected to engage in collaborative, critical, supportive dialogue around teaching.

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom

Category Number: 400 Courses on reflective practice

Course Number: 471

Title: Building Our Practice Through Critical Friends Group Communities

Host Institution: BBG

Course Format: OZM: All Online (Zoom and Moodle) (key below)

Dates 1/6/2024, 1/20/2024, 1/27/2024 (all via Zoom meeting)

with online work in between sessions via Moodle

Course Description:

Critical Friends Group (CFG) work originated with the National School Reform Faculty (NSRF) in 1994. The key differences between CFG communities and other professional learning communities (PLCs) are: 1) an intentional cultivation of safety and trust between the members, and 2) a focus on solving problems and accomplishing goals brought by its participants. It's critical that teachers have time and space together for this kind of work.

In this 15-hour fully online course, we'll be applying the approach and resources of NSRF to develop our own CFG that will support one another as science teaching professionals! Our work will begin with 2.5 hours of asynchronous work in Moodle dedicated to building community, becoming more familiar with what a CFG looks like in practice, the importance of protocols, and preparing for giving and receiving meaningful feedback. The three 3-hour synchronous Zoom meetings will take place on weekend mornings. During this portion of work, we will be taking a deeper dive into CFG work, including several teacher participants presenting their own puzzles of practice to get feedback from their peers. This will be a great opportunity to support the presenter's in improving their instruction, and for the whole group to reflect on their experience in participating in protocol work! The remaining asynchronous work will be mostly dedicated to prep meetings with your assigned mentor ahead of your own presentations.

During our time together in this course, the Urban Advantage Lead Teachers, will be supporting teachers with preparing for their presentations and ensuring your voices are heard and honored as you give non-judgmental, but open and honest feedback to UA colleagues who volunteer to share a puzzle of practice!

Puzzles of practice may include:

- Dealing with issues and dilemmas related to student learning
- Looking closely at and learning from student work/student learning data
- Looking at and reflecting upon teacher/educator work

Course Format key:

IP (In-Person)	The course is in-person at one or more institutions
IPO (In-Person & Online)	Some in-person sessions and some online work, either on Zoom or Moodle
OZM (Online Zoom & Moodle)	All online via Zoom and some self-paced work on Moodle
OM (Online Moodle)	All self-paced work on Moodle
OZ (Online Zoom)	All online via Zoom