INTERDISCIPLINARY/ MULTIDISCIPLINARY STUDIES: B.A., B.S., B.P.S.

Degree programs in Interdisciplinary/Multidisciplinary Studies offer students the opportunity to develop individualized degree plans based on their intellectual, professional, and personal interests. Interdisciplinary/ Multidisciplinary Studies will allow students to explore a particular area of interest, theme, theory, concern, profession, or topic from more than one perspective. The close, interdisciplinary examination will be the basis of both discovery and integration of interconnected ideas from different areas. Students will sharpen their skills in writing and research and critical reading and thinking. Together with a faculty mentor, students create a program to meet their specific needs and goals.

General program guidelines can be found on the "Program Details" tab, and students work with an academic mentor to choose courses that meet the guidelines and address each student's individual interests. Students can also work with their academic mentors to identify applicable transfer credit, prior college-level learning, and possible course equivalencies. Working with a mentor and using Empire State University's educational planning process, students develop a specialized concentration in Interdisciplinary/Multidisciplinary Studies by following the general program guidelines as well as any applicable concentration guidelines. Students may also develop their own concentrations.

For more information about general undergraduate degree requirements, please visit Earning an Undergraduate Degree (http:// catalog.sunyempire.edu/undergraduate/earning-undergraduate-degree/).

For sample degree programs and other degree planning resources, please visit the Interdisciplinary and Multidisciplinary Studies Degree Planning web page (https://www.sunyempire.edu/interdisciplinary-multidisciplinary-studies/degree-planning-resources/).

For more information about Interdisciplinary and Multidisciplinary Studies, please visit the Interdisciplinary and Multidisciplinary Studies web site (https://www.sunyempire.edu/interdisciplinary-multidisciplinary-studies/).

Program Details

Students will develop a concentration in multiple areas that combine around a well-explained problem, question, theme, or interdisciplinary field. Concentrations must have a title, in addition to the Area of Study in Interdisciplinary and Multidisciplinary Studies.

Foundation #1: Foundations
- Learning outcome: Students will be able to explain fundamental concepts and principles of at least two of the fields involved in the concentration, at least one of which must be a liberal arts and sciences field. These fields include The Arts (including visual, performing, or digital arts), Cultural Studies (including literature, communication, creative writing, expository writing, languages/ linguistics, literature, philosophy religion), Historical Studies, Social and Behavioral Sciences (including anthropology, economics, human development, political science, public affairs, sociology, or psychology), Natural Sciences (including biology, chemistry, environmental science, physical sciences) and Mathematics, but

not professional disciplines such as Human Services, Educational Studies, or Business.

These foundations will vary based on student interest and focus but are likely met through survey courses at the 1000-level with titles that might include words such as introduction/introductory, principles, exploring, foundations, or literacy, but may be a single subject that serves as a prerequisite to further study in that field. Examples include, but are not limited to: Introduction to Literature, Media and Visual Literacy, Introduction to Psychology, Biology I, Foundations of Anatomy and Physiology, Marketing Principles, or Statistics.

Foundation #2: Communication
- Learning outcome: Students will be able to develop effective arguments in writing and speech, including demonstrating critical listening, reading and interpretation skills, in multiple contexts and through multiple strategies.

This guideline may be met by any course that meets the General Education category of Basic Communication, but most often is met through courses such as College Writing, Composition, Effective Academic Writing, or Public Speaking.

Foundation #3: Critical Thinking and Problem Solving
- Learning outcome: Students will develop abilities in reading, writing, and evaluating information critically, i.e., with sustained attention to meaning, presentation, and argument.
- Learning outcome: Students will build the capacity to identify and describe main ideas, underlying assumptions, and valid conclusions.

These guidelines are most often met through courses that specifically deal with reasoning, such as Introduction to Critical Thinking, Introduction to Philosophy or Proposal Writing and Logical Argument.

Foundation #4: Quantitative Literacy
- Learning outcome: Students will be able to apply basic quantitative skills to the analysis and interpretation of real-world quantitative information to draw conclusions.
- Learning outcome: Students will be able to apply and present quantitative information to support personal, professional, and societal goals.

These guidelines are most often met through any course meeting the General Education category of Mathematics. Courses include Statistics, Algebra, Contemporary Mathematics, Visualizing Math, The History of Math, and Discovering Math Across Generations.

Foundation #5: Research Skills and Information and Digital Literacy
- Learning outcome: Students will be able to apply information from a variety of media, including digital media, with an emphasis on scholarly sources.
- Learning outcome: Students will be able to critically evaluate sources and reach well-reasoned conclusions, attributing sources appropriately, to effectively convey information.
- Learning outcome: Students will be able to use digital tools to advance learning, as well as personal and professional development.

These guidelines may be met through courses that infuse digital research skills, such as Digital Literacy, or Media and Visual Literacy, or by courses that discuss the transformation of culture and society due to digital technologies, such as Communication through New

Media, Digital Culture and Society, or The Digital Environment in a Post-Truth World.

Foundation #6: Social Responsibility

- Learning outcome: Students will be able to engage in ethical reasoning and reflect on issues such as: democratic citizenship; diversity, such as gender, race, class, sexuality; social justice; and environmental sustainability, both locally and globally.

  Courses to meet this guideline might include references to subjects such as ethics, diversity, equity and inclusion, or the environment in their titles and include titles such as Introduction to Ethics, Business Ethics, Media, Ethics and Law, Sex and Gender in Western Culture, Images of Women in Western Civilization, African American Literature, Environmental Studies, Social, Professional, and Ethical Issues in Computing or Sustainability and Agriculture.

All students at SUNY Empire are expected to demonstrate Breadth and Depth of Knowledge. Students in IMS with a specific concentration do this through the following guidelines:

Foundation #7: Development of Knowledge and Current Perspectives

- Learning outcome: Students will be able to analyze the system of ideas on which a field or discipline is based. This may mean tracing the definition, foundations, vocabulary, and scope of a field or it might mean discussing the environment in which ideas or priorities change and explain current thinking in the field.

  Courses meeting this guideline will be at the advanced (3000, 4000 or graduate) level, and include courses such as Art History, History and Theories of New Media, Globalization: Business and Society in the Information Age, Economic Issues in Health Care or Contemporary Environmental Issues.

Foundation #8: Theoretical and/or Methodological Knowledge

- Learning outcome: Students will be able to evaluate, critique, and apply theories, critical approaches, and/or methodologies in at least two of the areas of inquiry within the concentration or a single already well-established interdisciplinary field.

  Courses meeting this guideline will be at the advanced (3000, 4000 or graduate) level, and typically include courses with words such as theory/theories, methods, critical in their titles such as Performance Theory, Communication Theories, Social Science Research Methods, Theory of Computation, Travel and Tourism: A Critical Perspective, and/or course descriptions that refer to these concepts such as Literature and Culture of the Vampire, Advertising and Society, or Evolution.

Foundation #9: Synthesis of knowledge

- Learning outcome: Students will be able to analyze and form critical perspectives through the synthesis of two or more areas of study through either a capstone study, a senior project or thesis, or through identifying a study or through Prior Learning Assessment that combine at least two areas as discussed thoroughly in the degree rationale.
- Learning outcome: Students will be able to identify connections and contrasts between two or more disparate approaches or perspectives, or multiple fields.

Learning Outcomes

- Foundations: Students will be able to explain fundamental concepts and principles of at least two of the fields involved in the concentration, at least one of which must be a liberal arts and sciences field.
- Communication: Students will be able to develop effective arguments in writing and speech, including demonstrating critical listening, reading and interpretation skills, in multiple contexts and through multiple strategies.
- Critical Thinking and Problem Solving: Students will develop abilities in reading, writing, and evaluating information critically, i.e., with sustained attention to meaning, presentation, and argument.
- Critical Thinking and Problem Solving: Students will build the capacity to identify and describe main ideas, underlying assumptions, and valid conclusions.
- Quantitative Literacy: Students will be able to apply basic quantitative skills to the analysis and interpretation of real-world quantitative information to draw conclusions.
- Quantitative Literacy: Students will be able to apply and present quantitative information to support personal, professional, and societal goals.
- Research Skills and Information and Digital Literacy: Students will be able to apply information from a variety of media, including digital media, with an emphasis on scholarly sources.
- Research Skills and Information and Digital Literacy: Students will be able to critically evaluate sources and reach well-reasoned conclusions, attributing sources appropriately, to effectively convey information.
- Research Skills and Information and Digital Literacy: Students will be able to use digital tools to advance learning, as well as personal and professional development.
- Social Responsibility: Students will be able to engage in ethical reasoning and reflect on issues such as: democratic citizenship; diversity, such as gender, race, class, sexuality; social justice; and environmental sustainability, both locally and globally.
- Development of Knowledge and Current Perspectives: Students will be able to analyze the system of ideas on which a field or discipline is based. This may mean tracing the definition, foundations, vocabulary, and scope of a field or it might mean discussing the environment in which ideas or priorities change and explain current thinking in the field.
- Theoretical and/or Methodological Knowledge: Students will be able to evaluate, critique, and apply theories, critical approaches, and/or methodologies in at least two of the areas of inquiry within the concentration or a single already well-established interdisciplinary field.
- Synthesis of Knowledge: Students will be able to analyze and form critical perspectives through the synthesis of two or more areas of study through either a capstone study, a senior project or thesis, or through identifying a study or through Prior Learning Assessment that combine at least two areas as discussed thoroughly in the degree rationale.
- Synthesis of Knowledge: Students will be able to identify connections and contrasts between two or more disparate approaches or perspectives, or multiple fields.

Concentration Guidelines

Specific guidelines have been developed for concentrations in General Studies (Bachelor degree only) and Environmental Studies. Students can work with their mentor to develop an individualized concentration, and should use the general area of study guidelines as an organizing framework for their degree plans.

Concentration In General Studies

Guidelines For A Bachelor Of Science Degree

Students will explain what led them to make the decision to earn a concentration in General Studies rather than a degree with more of a disciplinary or interdisciplinary focus.

Foundation #1: Foundations

- Learning Outcome: Students will be able to explain fundamental concepts and principles of at least two of the fields involved in the degree.

  These foundations will vary based on student interest and focus but are likely met through survey courses at the 1000-level with titles that might include words such as introduction/introductory, principles, exploring, foundations, or literacy, but may be a single subject that serves as a prerequisite to further study in that field. Examples include, but are not limited to:

Code	Title	Credits
LITR 1005	Introduction to Literature	4
ARTS 1140	Media and Visual Literacy	4
PSYC 1005	Introduction to Psychology	4
BIOL 1210	Biology I: Lecture	3
BIOL 1300	Anatomy & Physiology I	4
MRKT 1005	Marketing Principles	4
MATH 1065	Statistics	3-4

Foundation #2: Communication

- Learning Outcome: Students will be able to develop effective arguments in writing and speech, including demonstrating critical listening, reading and interpretation skills, in multiple contexts and through multiple strategies.

  This guideline may be met by any course that meets the General Education category of Basic Communication, but most often is met through courses such as:

Code	Title	Credits
COMW 1005	College Writing	3,4
COMW 2005	Effective Academic Writing	2,3
COMM 1030	Public Speaking	4

Foundation #3: Critical Thinking And Problem Solving

Learning Outcome: Students will develop abilities in reading, writing, and evaluating information critically, i.e., with sustained attention to meaning, presentation, and argument.

Learning Outcome: Students will build the capacity to identify and describe main ideas, underlying assumptions, and valid conclusions.

These guidelines are most often met through courses that specifically deal with reasoning, such as:

Code	Title	Credits
CUST 2030	Introduction to Critical Thinking	2
PHIL 2005	Introduction to Philosophy	4
COMW 3005	Proposal Writing and Logical Argument	3

Foundation #4: Quantitative Literacy

- Learning Outcome: Students will be able to apply basic quantitative skills to the analysis and interpretation of real-world quantitative information to draw conclusions.
- Learning Outcome: Students will be able to apply and present quantitative information to support personal, professional, and societal goals.

These guidelines are most often met through any course meeting the General Education category of Mathematics. Courses include:

Code	Title	Credits
MATH 1065	Statistics	3-4
MATH 1040	Algebra	3,4
MATH 1005	Contemporary Mathematics	4
MATH 1030	Visualizing Mathematics	4
MATH 2005	History of Mathematics: Introductory	4
MATH 1010	Discovering Math Across Generations	4

Foundation #5: Research Skills And Information And Digital Literacy

- Learning Outcome: Students will be able to apply information from a variety of media, including digital media, with an emphasis on scholarly sources.
- Learning Outcome: Students will be able to critically evaluate sources and reach well-reasoned conclusions, attributing sources appropriately, to effectively convey information.
- Learning Outcome: Students will be able to use digital tools to advance learning, as well as personal and professional development.

  These guidelines may be met through courses that infuse digital research skills, such as:

Code	Title	Credits
CUST 3015	Food & Drink in Cultural Context: Advanced	4
ARTS 1140	Media and Visual Literacy	4

  or by courses that discuss the transformation of culture and society due to digital technologies, such as:

Code	Title	Credits
COMM 3015	Social Media: Communication & Culture	4

Foundation #6: Social Responsibility

- Learning Outcome: Students will be able to engage in ethical reasoning and reflect on issues such as: democratic citizenship; diversity, such as gender, race, class, sexuality; social justice; and environmental sustainability, both locally and globally.

Courses to meet this guideline might include references to subjects such as ethics, diversity, equity and inclusion, or the environment in their titles and include titles such as:

Code	Title	Credits
PHIL 2020	Introduction to Ethics	4
BUSN 3010	Business Ethics	4
COMM 3025	Media Ethics & Law	3,4

ANTH 3122	Sex & Gender in Global Perspective	4
ARTS 4035	Images of Women in Western Art	4
LITR 2006	African American Literature: Intro	4
ENSC 1200	Environmental Science	4
INFT 3045	Social, Professional & Ethical Issues in Computing	4
ENST 3010	Sustainability & Agriculture	4

All students at SUNY Empire are expected to demonstrate Breadth and Depth of Knowledge. Students may use Educational Planning as an integrating study or capstone in order to explore connections and patterns within their learning, including prior learning. They do this through the following guidelines:

Foundation #7: Building On Foundations
- Learning outcome: Students will be able to explain concepts in at least one subject or topic in their degree plan or PLA and a progression that builds on fundamental concepts and principles and includes intermediate and advanced study.

8. Interconnections
- Learning Outcome: Students will be able to describe how their concentration combines two or more distinct disciplinary areas.
- Learning Outcome: Students will be able to identify connections and contrasts between two or more disparate approaches or perspectives, or multiple fields.

Students concentrating in General Studies must earn at least 12 upper-level credits in a single area of focus, which may include any liberal arts and sciences subject, professional disciplines such as Business, Education, or Human Services, or topics assessed through PLA, and 8 upper-level credits in any second area of focus, discipline, or PLA.

Concentration In Environmental Studies

About Environmental Studies
Environmental Studies is the interdisciplinary academic field that focuses on human interactions with the natural environment. Concentrations with Interdisciplinary and Multidisciplinary designs contain more than one academic discipline focused on a theme, question, problem, or issue. A concentration in Environmental Studies has natural sciences as one of its foundation academic fields to provide the student with a broad perspective on the complex dynamics of natural environmental systems. If you are interested in this area, you are encouraged to think broadly about how you would like to explore human-environmental interactions.

To more fully understand human interactions with the natural environment, you have the opportunity to integrate natural science with any number of other disciplines, depending on your goals and interests. For example, you might choose education, art, history, business, the social sciences (anthropology, economics, political science, psychology, sociology, law, public affairs), and/or cultural studies (philosophy, religious studies, communications, media studies, literature) in order to study human relationships with nature.

If your primary interest is studying the environment from a scientific perspective, you would be best served by a degree in Science, Mathematics and Technology with a concentration in Environmental Science (http://catalog.sunyempire.edu/undergraduate/areas-study-degrees-certificates/areas-study-concentration-guidelines/science-mathematics-technology/#concentrationdetailstext).

If your primary interests in human-environmental interactions fall outside the sciences, you can design a concentration with a title other than Environmental Studies in Interdisciplinary Studies or any other Area of Study. Examples of possible concentration titles include: Environment and Culture, Business and the Environment, Environmental Policies.

If you are interested in integrating the study of the environment with studies in business, you could consider incorporating Empire State University's Business and Environmental Sustainability certificate (http://catalog.sunyempire.edu/undergraduate/areas-study-degrees-certificates/certificate-programs/business-environmental-sustainability/) into your degree plan.

Learning Outcomes
After completing a concentration in Environmental Studies, you will be able to:

- Apply multiple modes of inquiry to analyze human interactions with the natural environment
- Demonstrate a foundation in the Natural Sciences
- Demonstrate an advanced understanding of systems in the natural environment 2
- Demonstrate a foundation in one or more additional disciplines
- Demonstrate advanced level understanding in your selected disciplines
- Acquire skills necessary to your individual inquiry which will vary by discipline (for example, specialized skills in mathematics, technology, literary analysis, media analysis, social science, and research methods)
- Analyze a specific individualized inquiry about an environmental problem, theme, or issue through a multidisciplinary or interdisciplinary approach (see paragraph below for more information)
- Apply understanding of the ethical relationship between people and the natural environment to your individualized inquiry.

For a full explanation of these terms and outcomes, see the guidelines below.

Guidelines
You should explain in your rationale essay what elements in your degree plan, including past learning experiences, meet each of these guidelines.

I. Natural Sciences Foundation
At the introductory level, learning experiences should focus on physical and biological systems in the natural environment. Learning experiences should include introductory biology, chemistry, and physics. Studies with all three titles are not required, but sources of learning in each of these disciplines should be discussed in the rationale essay. Knowledge in the natural sciences should be sufficient to support the Environmental Science Core. Advanced studies in the natural sciences can be added if they meet your interests and goals. For example, if the plan focuses on chemistry or physics, advanced studies applicable to your research agenda can be included in the concentration.

II. Environmental Science Core
You should include environmental science studies in your degree plan that cover the breadth of the discipline and demonstrate progression of learning. At the introductory level, learning experiences should focus on physical and biological systems in the natural environment.

Advanced environmental science studies should build upon introductory studies and can be tailored to your interests and goals. You might be interested in topics such as conservation, environmental mitigation, natural resources, or sustainable development. The advanced studies

chosen would allow you to learn about your selected topic in greater depth and could focus on either advanced knowledge in biological systems (examples might include forest ecology, marine biology, ornithology, and wildlife management,) or physical systems (examples might include climate change, hydrology, natural disasters, and soil science).

III. Interdisciplinary Design

Please refer to the Interdisciplinary Studies Area of Study and learn about how to combine disciplines in order to pursue your particular interests. First choose the disciplines that best address your interests. Then, choose between a multidisciplinary or interdisciplinary approach to degree program design. In either case, you will focus through natural science and one or more additional disciplines.

In designing your program, work closely with your mentor to explore and define your interests, to understand multidisciplinary or interdisciplinary design, and to select studies and learning experiences that meet the guidelines and allow you to pursue your interests and goals. A multidisciplinary approach enables you to compare the distinctly different ways that two or more disciplines approach human relationships with the environment. An Interdisciplinary approach takes the additional step of synthesizing two or more disciplines for integrated learning, which reaches new understanding of a theme or issue or suggests new solutions to a problem or question.

For example, a multidisciplinary approach to understanding human interactions with the environment might lead a student to study environmental science and psychology. The focus would be on comparing how each of these disciplines uses different concepts, theories, and methods to consider the theme, problem, or issue of particular interest to you. For example, if your interest was pollution, you might consider how and why humans contribute to pollution from a science perspective and from a psychological perspective and how these approaches differ in understanding this issue.

An interdisciplinary approach using the same fields would focus on synthesizing or integrating the concepts, theories, and methods of both disciplines to arrive at new ideas and knowledge that relate to your focus. Using the above example, an interdisciplinary approach to understanding pollution might focus on how psychological principles can be used to convey scientific ideas in a way that would affect behavior and reduce pollution.

IV. Additional Skills And Knowledge
Environmental Ethics

Environmental ethics is a branch of philosophy that concerns the ethical relationship between people and the natural environment and is a typical knowledge component of a Concentration in Environmental Studies degree program. You should either take an Environmental Ethics course, or identify learning that demonstrates ethical reasoning in the context of the environment.

Mathematics

You will need sufficient quantitative skills to help you understand the natural environment. The amount and level of quantitative studies will depend on your area of 4 interest, and in many cases, mathematics studies which fulfill the general education requirement will meet this guideline. Knowledge of statistics is recommended because it enables students to analyze environmental data and understand the results of research on environmental issues.

Technology

In addition to the information literacy requirement for an ESC degree, knowledge of specific technology may be appropriate for your Concentration in Environmental Studies. Information about the natural environment is often collected using specialized technology and having skills in the use of such technology could position you for a particular career path.

Research, Data Collection, And Analytic Tools

You should understand the research methods and analytic tools associated with the disciplines in your degree plan. For example, if you are combining natural science and social science, you will need to understand research methods for both academic fields and should explain in your rationale how you have acquired that knowledge.

Communication

Communicating information about the environment is an important component of an environmental studies degree. Depending on your interests and goals, skills in public speaking may be appropriate. Being able to communicate in written forms through various modes, such as social media, is also important.

V. Capstone Experience Or Study

All Concentrations in Environmental Studies should include a capstone study or experience. You might work with a mentor to design your own research project, identify an internship, fieldwork, or service learning opportunity within the local community.

If you choose a multidisciplinary approach, you should identify a capstone that compares your learning from two or more selected disciplines to gain varied perspectives of your theme, question, problem, or issue. If you choose an interdisciplinary approach, you should identify a capstone that synthesizes your learning from two or more selected disciplines to gain an integrated perspective of your theme, question, problem, or issue that can lead to new knowledge. In your rationale essay, you should discuss the way your capstone meets these requirements.

To illustrate: suppose your second field of interest is human behavior; you might design an Environmental Studies concentration which includes studies in environmental science and psychology.

For a multidisciplinary capstone, you might apply your scientific learning to look at how yard fertilizer with phosphorus contributes to runoff, affecting the water quality of streams and rivers. You might apply your learning from psychology to look at how peer pressure related to maintaining a green lawn influences neighborhood lawn maintenance practices. In this multidisciplinary capstone, you would compare two aspects this type of water pollution. You might uncover interesting similarities and differences between the dynamics of the larger natural system and the dynamics of human communities.

In contrast, for an interdisciplinary capstone with the same disciplines and content, you would integrate and apply what you learned about these similarities and differences. Integration typically leads to conclusions beyond both disciplines. You might apply synthesized learning about these two aspects of this particular kind of water pollution to consider how behavioral reinforcement methods might be introduced to shift neighborhood priorities from uniformly green lawns to clean water.