



LOYOLA UNIVERSITY MARYLAND

— 1852 —

Office of Academic Affairs

February 1, 2025

Sanjay Rai, Ph.D.
Secretary of Higher Education
Maryland Higher Education Commission
217 East Redwood Street, Suite 2100
Baltimore, MD 21202

HEGIS: 042000
CIP: 03.0103

Dear Secretary Rai,

Loyola University Maryland is pleased to submit a proposal for a new concentration in Environment, Society, and Policy within the proposed B.A. in Environmental Studies program. The concentration provides students the option to focus on the intersection of social and economic policies with the natural world.

The proposed Environment, Society, and Policy concentration was developed specifically to honor our commitment as members of the first cohort of Laudato Si' universities, a cohort of institutions responding to the call from Pope Francis to recognize the world's environmental and social crisis. Additionally, the proposed program was developed under the University's new strategic plan *Together We Rise* and meets the plan's focus area *Care for Our Common Home* and the initiative to become a leader in integral ecology. As such, we proudly present this liberal arts concentration for your review.

The proposal addresses the 2022 Maryland State Plan for Higher Education's goals and priorities and was approved by Loyola's Academic Senate and Loyola's Board of Trustees. The President approves this proposal, as made evident by his signature on the MHEC Cover Sheet. I approve the proposed concentration and submit it for your recommendation for implementation. Should the Commission have any questions about the proposals, please contact Mr. David Mack, Academic Program Development Specialist, at 410-617-2317 or dsmack@loyola.edu.

Sincerely,

A handwritten signature in cursive script that reads "Cheryl Moore-Thomas".

Cheryl Moore-Thomas, Ph.D., NCC
Provost and Vice President for Academic Affairs

Cc: Francis Golom, Ph.D., Dean, Loyola College of Arts and Sciences
Mr. Matthew Power, President, Maryland Independent College and University Association

Dr. Angela Sherman, Vice President for Academic Affairs, Maryland Independent College and University Association



Office Use Only: PP#


**Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program**

Institution Submitting Proposal	Loyola University Maryland
---------------------------------	----------------------------

Each action below requires a separate proposal and cover sheet.

- | | |
|--|---|
| <input type="radio"/> New Academic Program | <input type="radio"/> Substantial Change to a Degree Program |
| <input checked="" type="radio"/> New Area of Concentration | <input type="radio"/> Substantial Change to an Area of Concentration |
| <input type="radio"/> New Degree Level Approval | <input type="radio"/> Substantial Change to a Certificate Program |
| <input type="radio"/> New Stand-Alone Certificate | <input type="radio"/> Cooperative Degree Program |
| <input type="radio"/> Off Campus Program | <input type="radio"/> Offer Program at Regional Higher Education Center |

Payment <input checked="" type="radio"/> Yes	Payment <input type="radio"/> No	Payment Amount: 250.00	Date Submitted: 2-1-25
Submitted: <input type="radio"/> No	Type: <input checked="" type="radio"/> Check # 65146		

Department Proposing Program	Natural and Applied Sciences		
Degree Level and Degree Type	AOC within BA degree		
Title of Proposed Program	Environment, Society, and Policy		
Total Number of Credits	120		
Suggested Codes	HEGIS: 42000.00	CIP: 3.0103	
Program Modality	<input checked="" type="radio"/> On-campus <input type="radio"/> Distance Education (fully online) <input type="radio"/> Both		
Program Resources	<input checked="" type="radio"/> Using Existing Resources <input type="radio"/> Requiring New Resources		
Projected Implementation Date <small>(must be 60 days from proposal submission as per COM.AR 13B.02.03.03)</small>	<input checked="" type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer Year: 2025		
Provide Link to Most Recent Academic Catalog	URL: https://catalogue.loyola.edu/		
Preferred Contact for this Proposal	Name:	David Mack	
	Title:	Program Development Specialist	
	Phone:	(410) 617-2317	
	Email:	dsmack@loyola.edu	
President/Chief Executive	Type Name:	Terrence M. Sawyer, J.D.	
	Signature:	 <small>Terrence Sawyer (Jan 31, 2025 08:27 EST)</small>	Date: 01/31/2025
	Date of Approval/Endorsement by Governing Board:	10/15/2024	

Revised 1/2021

Executive Summary

Loyola University Maryland is a member of the first cohort of Laudato Si' universities – a cohort of higher education institutions that are responding to a call from Pope Francis to recognize that the world's environmental and social crises are deeply intertwined and, with that recognition, work toward integral ecology within our institution, our city, and our world. This is directly connected to one of the Universal Apostolic Preferences of the Society of Jesus: Caring for our Common Home by collaborating, with Gospel depth, for the protection and renewal of God's creation.¹ The proposed Environment, Society, and Policy area of concentration within the Bachelor of Arts in Environmental Studies, is one part of honoring our commitment. This commitment challenges us to act on the 7-goals listed below.²

- Protect our common home for the well-being of all
- Defend all forms of life on Earth
- Acknowledge that the economy relies on the biosphere and our common home
- Adopt sustainable lifestyles
- Rethink and redesign curriculum to foster ecological awareness and transformative action
- Promote ecological spirituality
- Engage in action that builds community resilience and empowerment

The Environment, Society, and Policy concentration will help us honor our commitment to these goals.

The demand for skilled workers in the green job industry is increasing. The share of jobs requiring at least one green skill jumped 9.2% per year between 2018 and 2023 and the share of green talent workforce expanded by 5.4% per year over the same period. Fast growing skill areas include, climate action planning, drinking water quality, and hazards communications, and even jobs that are not traditionally considered 'green' such as healthcare, are increasingly requiring green skills.³

To meet our commitment and the demand for workers trained in green skills, Loyola University proposes a new Environment, Society, and Policy area concentration within the Bachelor of Arts in Environmental Studies degree program.

The Environment, Society, and Policy concentration is a quantitative concentration in which students will focus their studies on the analysis of the intersections of social and economic policies with the natural world. The concentration will build students' green skills, through high-quality, liberal arts instruction with an environmental focus.

The core curriculum is designed with a focus on marketable skills such as analysis and communication, as well as building community and strategies for global sustainability. For this reason, our curriculum interlaces natural science, social science, and the humanities with a strong emphasis on the study of systems and the relationships of people with the natural world.

The Environment, Society, and Policy concentration requires nine courses for a total of 27-29

¹ Universal Apostolic Preferences of the Society of Jesus, 2019-2029. <https://www.jesuits.global/uap/>

² *Laudato Si Action Platform*. (n.d.). Retrieved May 7, 2024, from <https://www.laudatosi.org/laudato-si/action-platform/>

³ *Global Green Skills Report 2023. LinkedIn Economic Graph*. <https://economicgraph.linkedin.com/research/global-green-skills-report> (accessed 2024-03-21).

Environmental Studies

credits in the concentration. This is in addition to the program core, Loyola's liberal arts core, and free electives for a total of 120 credits to graduate.

The concentration is designed to support student learning by allowing them to focus on their interests and desired careers by learning and applying skills and knowledge. Students who choose the Environment, Society, and Policy concentration will complete courses in economics and an environmental law or environmental politics along with electives in environment, society, and policy and environmental humanities.

The concentrations curriculum leads to a culminating two-course capstone experience of the program at large. First, students will apply their foundational skills and knowledge in a 3-credit environmental studies experience course (internship or research) where they will also gain valuable experience and network with employers, community partners, or researchers. Next, they will take a 3-credit Integral Ecology capstone course which will bring together students majoring in environmental studies and environmental science programs. Students will work in interdisciplinary teams to complete environmental or sustainability related projects with community partners or university partners. This will allow each student to apply their personal skill set in a collaborative setting, preparing them for the next step in the career path. Capstone courses will engage students in reflection on their experience as a student in the concentration through the process of discernment. This process involves examining their actions, feelings, and senses to determine how they have grown and how they will continue to grow and give back to the world after they graduate.

This proposed concentration was developed through a collaboration of faculty from across the university who worked together over more than two years to propose this concentration with input from students and alumni. It was a labor of love for our community and our students and is informed by a deep sense of caring for our common home.

Environmental Studies

A. Centrality to Institutional Mission and Planning Priorities:

1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.

Loyola University Maryland's mission is to inspire students to learn, lead, and serve in a diverse and changing world. As a Jesuit, Catholic university, Loyola is committed to the educational and spiritual traditions of the Society of Jesus and to the ideals of liberal education and the development of the whole person. This concentration is connected to the Universal Apostolic Preferences of the Society of Jesus to collaborate for caring of the common home in the construction of alternative models of life that raise awareness of natural respect and on sustainable development.

The proposed environment, society, and policy concentration will capitalize on Loyola's tradition of academic excellence while also building strong skills in critical thinking, communication, and ethical reasoning. The proposed concentration will provide students with skills to work in a variety of environmental fields including positions related to policy and society and is directly related to the institution's call to action as a *Laudato Si'* designated institution.

In 2021 Loyola University Maryland joined the first cohort of *Laudato Si'* universities, committing to respond to the cry of the earth and the cry of the poor through:

- fostering ecological economics
- adopting sustainable lifestyles
- fostering ecological education
- fostering ecological spirituality
- building community resilience & empowerment

To meet the commitment the University has many initiatives including the creation and implementation of an all-encompassing Climate Action Plan and Energy Management Policy, sponsoring a local community-focused farmers market to serve Loyola's neighbors, and included Care for Our Common Home as one of the key pillars in the institution's recently approved new strategic plan. The Care for Our Common Home pillar's first initiative is "Become a Leader in Integral Ecology". Development and implementation of the proposed academic program and the environment, society, and policy concentration not only supports the mission and strategic plan of the University, but it is essential to the University's goals and the commitment and priorities designated by Loyola's President, the Board of Trustees, and the institution.

The proposed environment, society, and policy concentration leading to a bachelor of arts at Loyola is an interdisciplinary concentration that will provide students with an education that fosters knowledge of environmental systems through a background in basic and applied science; promotes engagement with environmental issues and assessment of environmental and social systems; and the need for participatory action that responds to the 'cries of the Earth and poor' across society – thus training students to be integral ecologists and to serve others in a diverse and changing world. As integral ecologists, students will:

- Analyze and articulate the interactions between environmental systems and human

Environmental Studies

systems including the connections between the health of society and the health of the environment.

- Examine the relationship past between human beings and the environment and use ethical frameworks to rethink the relationship between humans and the environment.
- Design and advocate for comprehensive solutions that integrate combating poverty and injustice while protecting nature.

Following the introductory core, students enrolled in the environment, society, and policy concentration will focus on the intersection of society and policy with the environment from a primarily social science lens and be trained in quantitative techniques. Students will take statistics at the 200-level, micro- and macro-economics, Environmental Economics, and Environmental Law & Policy or Global Environmental Politics. Students will choose two elective courses from a list of Environment, Society, and Policy electives to guide their chosen course of study and an environmental humanities elective and an environmental science elective to contribute breadth to their degree. At least two of their four electives must be 300-level or higher courses.

The student experience will culminate with an environmental studies experience where students complete a 3-credit internship or research experience, applying the skills that they have learned in the classroom. The students will have a culminating experience during their final semester in their Integral Ecology Capstone where students from across the environmental concentrations and programs at Loyola will come together in an interdisciplinary cohort to demonstrate mastery and critical understanding of the dynamic interplay of human and natural systems; envision, evaluate, and potentially enact practical paths toward environmental and social health, transformation, and repair; and build upon their previous learning and experience to complete a portfolio or project in collaboration with peers and/or community partners that effectively communicates a critical perspective on integral ecology.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

As stated in Pope Francis' encyclical letter, *Laudato Si'*, 41, 139, "When we speak of the 'environment', what we really mean is a relationship existing between nature and the society which lives in it. Nature cannot be regarded as something separate from ourselves or as a mere setting in which we live. We are part of nature, included in it and thus in constant interaction with it." Through this statement, Pope Francis helps us to understand the importance of integral ecology.

The environmental programs including this concentration were developed under Loyola's new strategic plan that is charged to grow our STEM majors and become a leader in Integral Ecology. Developing pathways that enrich the vision of integral ecology, where science, ethics, spirituality, and action are mutually respected and empowered, aligns with the focus areas "Care For our Common Home" and "Grow our Footprint, Influence, and Enrollment" found within Loyola's new strategic plan. These areas also align with the Universal Apostolic Preferences which unite the Society of Jesus in our mission onto which Jesuits concentrate and concretize our vital apostolic energies during a ten-year period.

3. Provide a brief narrative of how the proposed program will be adequately funded for at

Environmental Studies

least the first five years of program implementation. (Additional related information is required in section L.

Budget projections indicate that tuition revenues will exceed expenses for implementing the pathway. Implementation of the concentration will require modest resources in terms of faculty, space, and budget. The University applied for and received the *Clare Boothe Luce Program for Women in STEM* grant. This grant will provide funding for the hiring of a new environmental science faculty member, helping to offset implementation costs. Part-time faculty are included in proposal's budget. The number of courses part-time faculty teach within the curriculum increases during each year of implementation to meet the needs for projected students enrolled in the major. Nearly all courses in the proposed concentration are already taught by current faculty and new courses in the proposed curriculum will be taught by current full-time faculty. A support staff position is included in the budget with costs split with the concurrently proposed environmental science program. Costs for technical equipment and supplies as well as library resources and marketing are included and fall within the proposed budget.

As a truly interdisciplinary concentration that is directly related to the University's mission and strategic plan, the institution has agreed to support the Environment, Society, and Policy concentration. Additionally, the dean of Loyola College will commit modest funds for programming to help build community in the major. Review of cross applications indicates a significant interest in the proposed concentration and combined with strong enrollment in the environmental minor, the budget projections indicate overall tuition revenues during the first 5-years will exceed expenses.

4. Provide a description of the institution's a commitment to:
 - a) ongoing administrative, financial, and technical support of the proposed program

As an interdisciplinary concentration, the Environment, Society, and Policy concentration will be managed by Dr. Elizabeth Dahl (Associate Professor) who will serve as the director of Environmental studies and science programs. The director will be overseen by the Associate Dean for the Natural and Applied Sciences who will provide oversight of budget and personnel decisions. The director will advise students in the pathway, network with community partners and internship locations, and provide day-to-day administration of the concentration. Academic advising will be provided by the director and if necessary due to enrollments, other faculty teaching in the pathway will provide advising.

The Director will collaborate with the Office of Digital Teaching and Learning to ensure seamless technical support to both students and faculty, fostering innovation and technology-enhanced courses. A steering committee consisting of faculty members from across the university will oversee the curriculum and work with the director to assess learning outcomes.

- b) continuation of the concentration for a period of time sufficient to allow enrolled students to complete the concentration.

The concentration will be given at least five years to establish consistent and sustainable enrollments. After that time, if the concentration fails to meet anticipated student demand, its continuation will be reassessed. However, there are few new expenses associated with the concentration because many of the courses in the concentration already exist at Loyola, giving the concentration and the program a strong probability of success and viability. If the University chooses to sunset the concentration or the program in the future, course instruction will continue,

Environmental Studies

and students will be provided the necessary courses to complete their studies.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan:

1. Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general based on one or more of the following:
 - a) The need for the advancement and evolution of knowledge
 - b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education
 - c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs

Across the country and in Maryland there is an increasing need for people prepared for employment in fields such as environmental management, policy, and pollution prevention. Green skills are also needed in fields that are not traditionally considered environmental fields including data science, media, design, and healthcare.⁴

Across the United States, environmental literacy requirements in K-12 education are also growing⁵ including in Maryland which was the first state to pass an environmental literacy high school graduation requirement.⁶ More students in the United States take the AP environmental science exam than take AP chemistry or physics.⁷ While environmental literacy in the country and Maryland has increased among young people, a recent study also demonstrated that 84% of 16–25-year-olds are worried about climate change.⁸

In Maryland and across the country, environmental degree programs with different concentrations focus on science and social science. Loyola's concentration in environment, society, and policy is innovative because students

- will have a strong humanities foundation that includes environmental ethics and communication,
- will be trained to be integral ecologists who understand the interwoven nature of human and natural systems⁹, and
- will be required to engage in experiential learning.

The proposed concentration in environment, society and policy has a specific goal of providing graduates with green skills and tools necessary to address the environmental crises. Their skills will be applied after graduation to contribute to the green economy shift and initiate changes to society as integral ecologists.

⁴ *Global Green Skills Report 2023. LinkedIn Economic Graph.* <https://economicgraph.linkedin.com/research/global-green-skills-report> (accessed 2024-03-21).

⁵ Environmental Literacy. North American Association for Environmental Education. <https://cepro.naaee.org/learning/eelearn/eelearn-1-what-ee/lesson-4-environmental-literacy/el-naaee> (accessed 2023-02-24).

⁶ MAEOE | Maryland Environmental Literacy. <https://maeoe.org/environmental-literacy/defining-environmental-literacy/maryland-environmental-literacy> (accessed 2023-11-07).

⁷ AP Environmental Science Exam: 2021 Results – All Access | College Board. <https://allaccess.collegeboard.org/ap-environmental-science-exam-2021-results> (accessed 2023-02-28).

⁸ Hickman, C.; Marks, E.; Pihkala, P.; Clayton, S.; Lewandowski, R. E.; Mayall, E. E.; Wray, B.; Mellor, C.; van Susteren, L. Climate Anxiety in Children and Young People and Their Beliefs about Government Responses to Climate Change: A Global Survey. *The Lancet Planetary Health* 2021, 5 (12), e863–e873. [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)

⁹ Laudato Si - Integral Ecology. <https://www.laudatosi.org/dialogue/integral-ecology/> (accessed 2023-11-08).

Environmental Studies

This concentration is designed with a specific focus on the needs of the students and skill sets combined with the strong liberal arts core. Our graduating students are already well-prepared for employment in many fields due to our high-quality instruction and emphasis on liberal arts skills that enable them to be effective communicators and critical thinkers. This new concentration will build upon this foundation by adding to graduates' skill sets, key green skills necessary to prepare them for the growing need in the workforce.

2. Provide evidence that the perceived need is consistent with the [Maryland State Plan for Postsecondary Education](#).

The proposed concentration aligns with the priorities outlined in the *2022 Maryland State Plan for Postsecondary Education* specifically as outlined below.

- *Priority 5: Maintain the commitment to high-quality postsecondary education in Maryland.*
 - *Plan action items: Identify innovative fields of study and consider specializing as opposed to expanding academic programs.* Our concentration takes the distinctive approach of training integral ecologists. Through this lens, students who complete the concentration will be engaged in a curriculum that encourages students to work towards solutions to our environmental and social crises through innovative approaches to problem solving. This builds upon the curriculum and engagement that we already have with the community and allows our students to use our curriculum to specialize in environmental studies.
 - *Plan action item: Evaluate assessment strategies for purpose, including assessing a student for real-world application and capstone projects as representative of experience.* By incorporating an experiential learning requirement (internship or research experience) into our concentration as a pre-requisite to the capstone integral ecology experience, we will be able to assess how students apply their skills to real-world application of environmental problem solving. This will provide additional training for the students who will work in multidisciplinary teams in the course.
 - *Plan action item: Increase paid real-world experiences (such as internships, externships, work-study opportunities) as a part of new curricula.* The program director and administrative assistant maintain a list of paid and unpaid internships and paid research experiences for students to enable them to complete their environmental studies experience course and be paid to do so.
- *Priority 6: Improve systems that prevent timely completion of an academic program.*
 - *Plan action item: Improve academic coordination among institutions to address challenges faced by transfer students.* Loyola's concentration as part of the environmental studies program was designed with seamless transfer from community college in mind. The program built on a liberal arts framework is flexible in its coursework and provides transfer students, particularly those with associate degrees in environmental studies or science to maximize course transfer and the utilization of those credits towards the concentration and degree.
- *Priority 7: Enhance the ways postsecondary education is a platform for ongoing lifelong learning.*
 - *Plan action item: Incorporate civic learning and civic engagement into all academic programs.* Building upon the work of Loyola's Center for Community, Service, and Justice, this new concentration will incorporate civic learning and engagement throughout the curriculum. This will include direct service, community-based projects, and advocacy-based work depending upon the nature of the course and the

Environmental Studies

community needs.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State:

1. Describe potential industry or industries, employment opportunities, and expected level of entry (*ex: mid-level management*) for graduates of the proposed program.

Students who graduate in environmental studies fields are employed in a variety of industries post-baccalaureate including careers as sustainability professionals, as public relations specialists, as environmental educators, and in environmental policy. Those who would like to pursue graduate degrees can pursue graduate education and post-graduate career in environmental law as well as other fields. According to the World Economic Forum, in the United States, demand for green skills in careers such as design, healthcare, manufacturing, public administration, software and IT services is also growing,¹⁰ suggesting that the types of careers available for graduates will continue to diversify.

2. Present data and analysis projecting market demand and availability of openings in a job market to be served by the new program.

In Maryland, with the 2030 Greenhouse Gas Reduction Act Plan (GGRA), the Maryland Department of the Environment estimates the creation of more than 6000 green jobs and as much as \$5.3 billion in state economic output by 2030.¹¹ Across the country, the workforce increases in environmental studies and environmental sciences degree holders are estimated to be 6%.¹²

The U.S. Bureau of Statistics O*NET lists several occupations related to graduates of Environmental Studies programs with concentrations in environment, society, and policy as *Rapid Growth* occupations¹³. These occupations include environmental compliance inspectors, environmental restoration planners, environmental science and protection technicians, forestry and conservation science teachers, management analysts, occupational health and safety specialists, and water resource specialists.

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

The proposed concentration provides opportunities in the sciences, politics, business, and several other categories. The U.S. Bureau of Labor Statistics data indicates projected growth in several employment areas graduates will qualify for and can be found in the tables below.

¹⁰ You need these skills to get that green job. World Economic Forum. <https://www.weforum.org/agenda/2022/03/green-skills-for-future-jobs/> (accessed 2023-11-07)

¹¹ Maryland releases bold new plan to achieve climate goals. Maryland Department of the Environment. <https://news.maryland.gov/mde/2021/02/19/maryland-releases-bold-new-plan-to-achieve-climate-goals/> (accessed 2023-11-07).

¹² Environmental Studies | Data USA. <https://datausa.io/profile/cip/environmental-studies> (accessed 2023-02-24)

¹³ O*NET Online, sponsored by the U.S. Department of Labor Rapid Growth, <https://www.onetonline.org/find/bright?b=1>

Environmental Studies

Occupational Title	SOC Code	Employment, 2023	Projected Employment, 2033	Change 2023-33	
				Percent	Numeric
Environmental scientists and specialists, including health	19-2041	84,600	90,700	7	6,100
Occupational health and safety specialists and technicians	19-5000	153,500	175,500	14	21,900
Management analysts	13-1111	1,018,300	1,126,200	11	107,900
Geographers	19-3092	1,600	1,700	3	100
Social and Community Service managers	11-9151	199,500	215,900	8	16,400

U.S. Bureau of labor Statistics - <https://www.bls.gov/ooh/>

Occupation	MD Employment		MD Projected Growth	MD Projected Openings	U.S. Employment		U.S. Projected Growth	Annual U.S. Job Openings
	Employees 2020	Projected 2030	2020-2030	2020-2030	2022	Projected 2032	2022-2032	2022-2032
Regulatory Affairs Specialists	7,980	8,900	12%	750	377,500	394,700	5%	31,000
Sustainability Specialists	49,640	52,580	6%	3,990	1,174,800	1,223,600	4%	107,000
Urban and Regional Planners	1,040	1,170	13%	110	44,700	46,400	4%	3,700
Public Relations Specialists	4,880	5,300	9%	500	297,100	315,100	6%	25,800

O*NET Online – sponsored by the U.S. Department of Labor <https://www.onetonline.org/>

4. Provide data showing the current and projected supply of prospective graduates.

School	Program Name	CIP Code	2017	2018	2019	2020	2021
Goucher College	Environmental Studies	030103	6	8	7	7	13
Hood College	Environmental Studies	030103	8	2	2	3	7
Johns Hopkins University	Global Environmental Change & Sustainability	030103	4	6	5	1	3

Environmental Studies

School	Program Name	CIP Code	2019	2020	2021	2022	2023
McDaniel College	Environmental Studies	030103	6	11	16	8	22
Salisbury University	Environmental Studies	030104	47	49	51	38	33
St. Mary's College of Maryland	Geography and Environmental Studies	304401	25	25	35	28	26
Towson University	Environmental Science and Studies	03.0101	43	62	50	50	33
University of Baltimore	Environmental Sustainability	030103	7	7	6	5	2
University of Maryland - Baltimore County	Environmental Science and Geography	030104	39	46	30	28	36
University of Maryland - Baltimore County	Geography and Environmental Studies	030103	0	5	13	19	17
Washington College	Environmental Studies	030103	0	0	7	9	7

D. Reasonableness of Program Duplication:

1. Identify similar programs in the State and/or same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.

As Environment, Society, and Policy is a concentration within the proposed environmental studies program, we reviewed the concentration under the program CIP Code and title. Environmental studies, as a liberal arts program is a common program found at several institutions in the state. Loyola's concentration is designed under CIP code 03.0103. As this is a common liberal arts major there are programs and concentrations in the state that are either listed in CIP code 03.0103 or 03.0104 and/or have a similar title. Some notable environmental studies programs in the state include those offered by UMBC, Goucher, McDaniel, University of Baltimore, JHU, and Towson. These programs are similar to our concentration in that they are interdisciplinary and include required courses from sciences and social sciences. Many of these programs also incorporate environmental justice and ethics into the curriculum and can be considered a liberal arts and sciences program. For example:

- Goucher College offers an Environmental Studies degree with two concentrations: environmental science or environment and society which includes foundational courses in environmental science and studies and economics and statistics requirements similar to our program's concentration in environment, society and policy. A unique feature of

Environmental Studies

Goucher's program is a required course in feminist political ecology which is a different topic, but a similar requirement to our concentration's courses in integral ecology.

- Johns Hopkins University offers an interdisciplinary program in Environmental Studies that includes a common core with Environmental Science which is similar to our concentration's design, though the course requirements are significantly different from our concentration.
- McDaniel College's environmental studies program allows students to choose from 3 specializations including Earth System Science, Environmental Biology, and Environmental Policy and Management. All students take common courses in environmental management, sustainability, and environmental problem solving before moving on to specific courses in their specialization. This is also similar to our concentration's structure.
- The University of Baltimore offers a program in Environmental Sustainability with a foundation in environmental science that allows students to tailor their electives to their interests.
- UMBC offers an undergraduate program in Environmental Studies & that highlights the strong geography foundation of the school's environmental programs. This program allows students to choose from 5 different focus areas tailoring their program to their interests and desired career path.

While elements of our concentration are similar to other programs in the state, our concentration combines these elements to focus on integral ecology. Our concentration differentiates itself in that it starts with courses that frame the study of the environment for students in the natural sciences, social sciences, AND humanities and finishes the student's concentration with both an environmental studies experience course and a capstone course with students from other environmental concentrations and majors to culminate their experience. This is a critical part of our concentration. It was developed based on student and alumni feedback when asked what they would like to see in our concentration and what they think would best prepare graduates for employment.

An additional goal of the capstone course is for students to engage in reflection on their experience as a student in the concentration through the process of discernment. The process of discernment involves examining their actions, feelings, and senses to determine how they have grown and how they will continue to grow and give back to the world after they graduate.

Loyola's proposed concentration will be taught through a social justice lens of a Jesuit Catholic University committed to the educational and spiritual traditions of the Society of Jesus and the development of the whole person. The proposed concentration is an important step for the University to meet its commitment to environmental sustainability as a Laudato Si' university. The seven Laudato Si' goals are:

- Respond to the cry of the Earth, a call to equitably address climate change, biodiversity loss, and ecological sustainability;
- Respond to the cry of the poor, a call for global solidarity with special attention given to vulnerable groups, such as indigenous communities, refugees, migrants, and children;
- Foster ecological economics, acknowledging the economy is a sub-system of human

Environmental Studies

- society embedded within the biosphere;
- Adopt a sustainable lifestyle, with the idea of sufficiency—living with just enough and not excess—to ensure a good life for all;
 - Offer ecological education, through curricular and institutional reform in the spirit of integral ecology to foster ecological awareness and action;
 - Develop ecological spirituality through greater contact and connections with the natural world in the spirit of wonder, praise, joy, happiness, and gratitude; and
 - Support local communities, with community engagement and participatory action to care for creation.

These goals are incorporated into our concentration curriculum and the University will annually report its progress to the Dicastery and communicate with other universities around the world on the Journey.

2. Provide justification for the proposed program.

The proposed concentration will add to the variety of environmental studies options offered across the state. Many programs and concentrations in the liberal arts and sciences such as English, history, philosophy, and biology have nearly identical curriculums regardless of the institution. However, environmental studies and related concentrations at different institutions have variations in curriculum, allowing higher education institutions to design unique curricula that best fits with their mission and that attracts different students. Our concentration design does not duplicate other programs and concentrations in the state, though it does share similarities. By focusing on integral ecology in our concentration we will be able to offer a curriculum that enhances the environmental studies concentration offerings across the state while not taking away from the unique strengths and opportunities offered by each institution of higher education.

This new concentration will attract students who may not have looked to Loyola and Maryland as an option previously, and potentially bring these students to our state. Maryland is uniquely situated for green job growth. The U.S. Bureau of Labor Statistics including O*NET's Careeronestop, indicates environmental scientists and specialists alone project 290 annual job openings in Maryland (see tables C.3 and C.4 above). That is more than the graduate output of all the current similar undergraduate programs including in Maryland.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the implementation or maintenance of high-demand programs at HBI's.

To Loyola's knowledge, there are no Maryland colleges or universities that offer a Bachelor of Arts in Environmental Studies or a concentration in Environment, Society, and Policy or a program with a CIP code 03.0103. Thus, there should be no impact on the implementation or maintenance of high demand programs or concentrations at HBIs.

F. Relevance to the identity of Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the uniqueness and institutional identities and missions of HBIs.

Environmental Studies

To determine the relevance of this concentration to HBIs in Maryland we researched whether environmental studies or concentrations in environment, society and policy are offered at the four HBIs in Maryland and found the following.

- Bowie State, Coppin State, and Morgan State do not offer programs or concentrations in environmental studies or environment, society and policy.
- University of Maryland Eastern Shore offers an Environmental Science major (B.S.) with concentrations in Marine Science or Environmental Chemistry.

Given this information, Loyola's proposed concentration in environment, society and policy should have no impact on the uniqueness and institutional identities and missions of HBIs since no HBI in Maryland offers an undergraduate program or concentration in Environmental Studies or environment, society and policy.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in COMAR 13B.02.03.10):

1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.

The proposed concentration (and program) grew out of our successful environmental studies minor (established 2015) from discussion with the environmental studies steering committee. In addition, the university has increased its efforts on sustainability initiatives in conjunction with becoming a *Laudato Si'* university, increasing the support structure for new programs and concentrations in environmental fields.

Nationally and internationally there is an increasing need for people with green skills in traditional environmental fields as well as fields such as data science, communication, and healthcare.¹⁴ At an institution such as Loyola with a strong liberal arts foundation, we have an established record for career preparation and outcomes.¹⁵ Building on this strength in career preparation, we aim to prepare students to be part of the innovative transformation of our systems necessary for the societal shift as we work to maintain our environment and social structure within a safe operating space for humanity.

Following a request from academic leadership for information on establishing a new program, the steering committee met to discuss a potential major. In addition, the steering committee reached out to environmental studies alumni who are working in related fields or in graduate school in related fields to discuss with them the strengths and weaknesses of our current minor as well as the key skills that undergraduate students should leave Loyola with upon graduation.

Taking this alumni feedback into account, the steering committee constructed a brief proposal outlining the potential goals of a program as well as a potential structure. After an Academic Affairs review of this document, the steering committee moved forward on refining the

¹⁴ *Skills for a Greener Future: A Global View*; Strietska-Illina, O., Mahmud, T., Eds.; International Labour Organization, 2019.

¹⁵ Outcomes - Rizzo Career Center - Loyola University Maryland. <https://www.loyola.edu/departments/career-center/about/outcomes> (accessed 2023-12-05).

Environmental Studies

program and concentrations.

To refine the program and concentration, additional faculty from across the university were asked to provide their expertise in the development of our curriculum goals and structure. In all, 14 faculty from 13 departments contributed to the development of the proposal, including faculty from Humanities, Social Sciences, Natural & Applied Sciences, and the Sellinger School of Business.

The concentration will be overseen by Elizabeth Dahl (PhD Earth System Science) and the environmental science and studies steering committee. The environmental studies steering committee currently oversees the environmental studies minor. Upon approval of the environmental studies program and concentrations, this committee will also oversee the program and concentrations. The committee consists of full-time faculty from across the university and currently includes:

- Mavis Biss (associate professor of philosophy)
- Daniel Castillo (associate professor of theology)
- Elizabeth Dahl (associate professor of chemistry)
- John Dougherty (associate professor of economics)
- Janine Holc (professor of political science)
- Bernadette Roche (associate professor of biology)
- Terre Ryan (associate professor of writing)

2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.

By completing the concentration, students will be provided with the ability to:

PLO #1. Environmental Systems. Critically analyze and articulate the dynamics of Earth's environmental systems, including assessment of human-environmental interactions across spatial and temporal scales.

PLO #2. Environmental, Social, & Political Systems. Examine and explain the relationships between humans and nature, and articulate the dynamic interactions among cultural, socio-economic, political, and ethical factors in environmental processes, emphasizing their implications for justice.

PLO #3. Critical Understanding and Interpretation. Apply moral and ethical perspectives to construct and critically evaluate environmental arguments, and systematically analyze diverse sources for information using appropriate qualitative and/or quantitative methods.

PLO #4. Communication. Students will demonstrate proficiency in the communication of the complexities and urgency of environmental issues including issues of justice to diverse audiences.

PLO #5. Participatory Action. Design, advocate for, and, when appropriate, implement equitable and just solutions to environmental challenges, demonstrating an understanding of the complex interplay between environmental, social, cultural, and ethical factors, with consideration of their

Environmental Studies

systematic impacts.

The environmental studies concentration will provide pathways for all students to develop the skills and networks necessary for the application of green skills and environmental knowledge in their career. Students will be trained to analyze and assess environmental issues and solutions through the lens of diversity and equity.

The core courses of the curriculum will allow students in the major to gain knowledge and skills for multiple career paths including communication skills through a variety of modes, interdisciplinary approaches to analysis, and critical thinking and analytical skills. By incorporating current real-world examples and historical and ethical perspectives, it is our intent to cultivate intellectual curiosity and a commitment to life-long learning of the student.

The environment, society, and policy area of concentration will allow students to further study the intersections of social and political systems with environmental systems. The courses in this area of concentration will include multiple courses in economics and a course in political science or law. These students will apply quantitative and critical analysis skills in elective courses that include topics such as GIS and statistical computing.

Students will gain experience and apply skills learned in the classroom by completing an experiential course that will include either an internship experience or supervised research experience. To complete their study, students will complete a capstone course. Students in this course will work together to integrate and apply what they have learned in other courses to assess challenges, develop strategies, and communicate effectively for healing the Earth. Through this course students will learn from their peers and engage with communities beyond the classroom and reflect on their experience and career path.

Additional alignment of courses to concentration learning outcomes and to the University's Undergraduate Learning Aims can found in Appendix A: Environment, Society, and Policy Concentration Outcome Map and Appendix A.1: Environment, Society, and Policy - Course to Concentration Learning Outcomes Alignment.

3. Explain how the institution will:
 - a) provide for assessment of student achievement of learning outcomes in the program

Assessments in each course are aligned to program outcomes. Learning outcomes are assessed each year in a cycle that follows institutional guidelines and best practices. Assessment of student learning outcomes is standard practice in Loyola's College of Arts and Sciences (LCAS). LCAS has a continuous improvement process, where student learning outcome data is analyzed, curricular revisions are made, and each program including any concentrations generates an annual report submitted to the Assistant Dean and Dean of LCAS.

Signature assessments are designated throughout the curriculum, with key assessments used at or near the end of the program to assess student learning. These assessments are aligned to the learning outcomes and to the Universities Undergraduate Learning AIMS. Assignments are submitted by students to faculty who enter data into Loyola's assessment platform. Data from the assessments are aggregated for review.

Environmental Studies

The data from these assessments are evaluated by faculty, program directors, institutional administrators, and the Committee on the Assessment of Student Learning. These data are used by the program director and faculty teaching in the concentration to determine if improvements to the curriculum may be needed to help drive curricular change when needed.

- b) document student achievement of learning outcomes in the program

The environmental studies faculty steering committee will be responsible for collecting direct evidence of student work, developing assessment rubrics, defining metrics of success, scoring student work against the rubrics, and compiling the data. A complete assessment report is submitted to and evaluated by the dean's office annually, and the dean will meet with the program director each year to discuss the concentration's progress. The results of the assessment will be used for continual improvement of the program and concentration.

4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements

Students are considered to have met their graduation requirements when they have completed all degree requirements. Loyola degree requirements include successful completion of their program including any area of concentration, a minimum of 38 courses (3-,4- or 5-credit courses), diversity-justice course graduation requirements, satisfaction of Loyola's Core Curriculum, all totaling a minimum of 120 credits, while maintaining a minimum cumulative average of 2.00 in all Loyola courses. The residency requirement is satisfactory completion of at least 60 credits at Loyola University Maryland.

The proposed Bachelor of Arts in Environmental Studies is a 120-credit program. All students complete 45 credits of Loyola's liberal arts core curriculum. The program core includes 21 credits, the Environment, Society, and Policy concentration requires 27-29 credits of coursework. There are additional free electives required to meet the minimum 120 credits and to meet Loyola's course requirements to graduate. Course descriptions can be found in Appendix B: Course Descriptions. The Environment, Society, and Policy concentration advising worksheet can be found in Appendix C: Environment, Society and Policy Concentration Worksheet.

Required Core Courses (7 courses and 21 credits)		
Course Number	Course Title	Credits
ENV 114	Care for Our Common Home: Earth System	3
ENV 116	Care for our Common Home: Society & Policy	3
ENV 210	Introduction to Integral Ecology	3
PL 314 or TH 312	Environmental Ethics OR Christian Environmental Ethics	3
WR 354 or WR 301 or CM 385	Writing about the Environment OR Writing About Science OR Special Topics in Communication	3
ENV 496	Environmental Studies Experience	3
ENV 410	Integral Ecology Capstone	3

Environment, Society, and Policy Concentration (9 courses, 27-29 credits)*

Course Number	Course Title	Credits
ST 210 or EC 220	Statistics OR Business Statistics	3
EC 102	Microeconomic Principles	3

Environmental Studies

Course Number	Course Title	Credits
EC 103	Macroeconomic Principles	3
EC 360	Environmental Economics	3
LW 411 or PS 358	Environmental Law and Policy or Global Environmental Politics	3
Choose 1 Course from the following^{1, 2}		
HS 211	American Environmental History	3
HS 222	Global Environmental History	3
HS 314	Disasters in American History	3
HS 490	Seminar: Environmental History in Latin America	3
PL 232	Philosophical Perspectives: Gender and Nature	3
PL 235	Philosophical Perspectives: Philosophy and Science	3
PL 236	Philosophical Perspectives: Environmental Philosophy	3
PL 314	Environmental Ethics	3
PL 393	Technology and the Crisis of Nature	3
PT 377	Landscape and Nature Photography	3
SA 315	Landscape	3
TH 312	Christian Environmental Ethics	3
TH 232	Food, Hunger, and the Bible	3
TH 395	Justice, Peace, and the Integrity of Creation: A Christian Theological Inquiry	3
WR 301	Writing about Science	3
WR 354	Writing about the Environment	3
Choose 2 Courses from the following^{1,2}		
LW 411	Environmental Law and Policy	3
MG 222	Introduction to Sustainability Business	3
MG 333	Global Strategy for Sustainability	3
MG 433	Environmental, Social, and Governance Reporting	3
PS 358	Global Environmental Politics	3
SC 373	Sociology of Human Rights	3
SC 374	Sociology of Development	3
SC 440	Global Sociology	3
Choose 1 Course from the following¹		
BL 154/155	Foundations of Biology III with lab	4
BL 276	Human Health and the Environment	3
BL 290	Insect Biology	3
BL 311	Research Methods: Plant Science	3
BL 346	Plant-Animal Interactions	3
BL 349	Biology of Mammals	3
BL 350	Biology of Mammals with Lab	3
BL 364	Insect Biology with Lab	5
BL 380	Aquatic Ecology	5
BL 390	Conservation Biology	3
BL 436	Evolution	3
BL 445	Conservation and the Tree of Life	3
BL 471	Seminar: Special Topics in Ecology, Evolution, and Diversity	3
ENV 224	Ecological Dynamics in the Mid-Atlantic	4
ENV 320	Environmental Science with Analysis	4
PH 125	Practical Meteorology	3
PH 150	Energy & Environment	3

¹ At least 2 electives must be 300-level or higher.

² Students enrolled in the Honors program are exempt from the Environmental Humanities elective and should take ENV 224 or ENV 320 to fulfill their second science core and Environmental Science elective.

Environmental Studies

5. Discuss how general education requirements will be met, if applicable.

Loyola undergraduate students are required to satisfy the requirements of the Loyola Core Curriculum. The Loyola Core Curriculum comprises the foundations of a liberal arts education in the Jesuit tradition. Courses span areas in the humanities, social sciences, and natural sciences/mathematics. They include disciplines such as fine arts, writing, English, history, theology, philosophy, and ethics. The diversity-justice course requirements focus on domestic diversity, global diversity, or justice.

6. Identify any specialized accreditation or graduate certification requirements for this program and its students.

No specialized accreditation is required for the concentration.

7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.

The proposal does not include contracting with another institution or non-collegiate organization.

8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.

All program and concentration requirements, including pre-requisites, curriculum administration, financial aid, and any other relevant information will be maintained on the program and concentration's website and in the undergraduate catalogue. The program director will be responsible for ensuring that the webpage remains current and that students are informed of any changes. Individual course requirements will be clearly delineated on syllabi and in catalogue descriptions prior to registration. The program director will also be available to discuss concentration/course requirements and university services during office hours or by appointment.

Loyola provides support services that include an Office of Technology Services, Counseling Center, Disability Support Services, Financial Aid Office, the Loyola-Notre Dame Library, a National Fellowships Office, The Study, the Writing Center, and many other support services to assist students for success. As mentioned above, Loyola's website provides the appropriate program costs and student support resources, including required consumer information disclosures.

9. Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.

Loyola University Maryland has a dedicated Office of Marketing and Communications. Loyola endorses and adheres to ethical principles and codes of conduct published by various national organizations. These include the Public Relations Society of America (PRSA) Code of Ethics, the National Association for College Admission Counseling (NACAC) Statement of Principles

Environmental Studies

of Good Practice, the National Association of Student Financial Aid Administrators (NASFAA) Statement of Ethical Principles and Code of Conduct for Institutional Financial Aid Professionals, American Association of Collegiate Registrars and Admissions Officers (AACRAO) Professional Practices and Ethical Standards, the NAFSA: Association of International Educators Statement of Ethical Principles, and the Association for Institutional Research (AIR) Code of Ethics, which are followed by the Office of Marketing and Communications, the Admission Office, the Office of Financial Aid, the Records and Admissions Offices, the Office of International Programs, and the Office of Institutional Research, respectively. Furthermore, the institution provides clear and accurate information on the University's website.

Loyola's Enrollment Management team will be sent all the relevant information for the program including the environmental, society and policy concentration and works closely with academic departments and the Academic Advising and Support Center to ensure that advertised information is clear and accurate. The academic program and concentration's website will be a major resource for students. At Loyola, all websites are maintained by individual departments. This helps to ensure that content is accurate and relevant for anyone who visits a department's website.

H. Adequacy of Articulation (as outlined in [COMAR 13B.02.03.19](#))

1. If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements. More information for Articulation Agreements may be found [here](#).

No formal articulation agreements for this concentration have been developed with partner institutions. However, Loyola offers a seamless transfer program to students who complete an associate degree at a Maryland community college. Most students who complete their associate degree at any Maryland community college will be considered as having fulfilled all Loyola core requirements (with the exception of two courses that would fulfill the theology and philosophy requirements) that serve as the foundation of our Jesuit liberal arts curriculum. Additionally, if students have taken at least two semesters of a college-level foreign language (e.g., Spanish 101 and 102), they will have completed Loyola's language requirement.

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.11).

1. Provide a brief narrative demonstrating the quality of program faculty. Include a summary list of **faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faculty member will teach in the proposed program.**

The concentration's faculty are distinguished and meet or exceed the requirements set in COMAR as well as Loyola University Maryland faculty requirements.

See Appendix D: Faculty Chart for a list of the faculty who will teach in the proposed concentration.

2. Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidenced-based best practices, including training in:

Environmental Studies

- a) Pedagogy that meets the needs of the students

Loyola currently offers two formal university-wide teaching enhancement workshops each year for all faculty, as well as numerous less formal pedagogical opportunities throughout the year. Several workshop sessions are dedicated to pedagogical training for faculty and instructors, including discussions of best practices for promoting student learning. In 2018, Loyola established Teaching Fellows who act as learning communities to research, incorporate, and disseminate best practices. Cohorts of teaching fellows have been formed for high-impact teaching practices, equity and inclusion, and digital teaching and learning.

- b) The learning management system

Loyola uses the Moodle learning management system and has a fully staffed technology center. Support includes a help line for faculty, several Moodle specialists, and Moodle training workshops to help faculty use Moodle effectively. The institution also provides an Office of Digital Teaching & Learning that provides additional support and training, including support and training for face-to-face courses that supplement learning with digitally enhanced support.

- c) Evidenced-based best practices for distance education, if distance education is offered.

The concentration is not a distance education. However, the Office of Digital Teaching and Learning instructional designers are available to develop on-line classes. Loyola as a whole follows quality assurance standards for online education including adhering to C-RAC guidelines.

J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12).

1. Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program.

The Loyola-Notre Dame Library (LNDL) staff reviewed the proposed concentration and affirmed the library has adequate resources to support the proposed concentration, providing a large collection of resources for students. The staff provided a list of existing and recommended resources for the program and concentration that could help students gain greater understanding within their field. The expenses for the recommended resources have been incorporated in the program expenditures budget table in Appendix F: Program Expenditures.

Existing costs will be supported by Loyola College of Arts and Sciences and the Office of Academic Affairs. The president's signature on the Commission's Proposal Cover Sheet indicates his support for the library resource to meet the program and concentration's needs.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined in COMAR 13B.02.03.13)

1. Provide an assurance that physical facilities, infrastructure and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and

Environmental Studies

faculty offices, and laboratories for studies in the technologies and sciences.

Loyola currently possesses the appropriate instructional resources and faculty offices to support the proposed program and concentration. For this concentration, there should be no change in the need for existing facilities, equipment, staff, or laboratories and the concentration can be implemented with the current resources in place at our institution. For faculty resources, we will likely need to hire 1 full-time tenure track environmental policy faculty likely during year 3 of implementation to support anticipated student enrollment in the concentration and student research experiences. The president's signature on the proposal coversheet indicates his support for the proposal and the adequacy of infrastructure, and instructional needs for the concentration.

2. Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate access to:
 - a) An institutional electronic mailing system, and
 - b) A learning management system that provides the necessary technological support for distance education

The proposed concentration is not a distance education program. Regardless of educational delivery mode, students are provided with an electronic mailing system and other technologies listed above in section I.b&c, upon matriculation. The institution has several computer labs and utilizes Moodle as the learning management system. The Office of Technology Services provides technical support for all student email accounts and for those using the learning management system.

L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14)

1. Complete **Table 1: Resources and Narrative Rationale**. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each resource category. If resources have been or will be reallocated to support the proposed program, briefly discuss the sources of those funds.

See the Resources Table in Appendix E:

Loyola University Maryland will provide the resources required to support the proposed program. Revenue from the program is expected to exceed expenses within the first year of the program's start with modest increases in revenue projected for years two through five.

2. Complete **Table 2: Program Expenditures and Narrative Rationale**. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each expenditure category.

See the Program Expenditures Table in Appendix F.

Expenditures are limited and no full-time faculty are projected for implementation of the program and concentration. Per course faculty and an eventual program administrator are included in the budget tables. Additionally, library resources and minimal technical equipment

Environmental Studies

will be required as this program and concentration build off the already existing undergraduate resources. Costs are therefore limited as many of the courses within the proposed concentration will be taught by existing University faculty. Program and concentration expenditures do not outpace projected revenue.

M. Adequacy of Provisions for Evaluation of Program (as outlined in COMAR 13B.02.03.15).

1. Discuss procedures for evaluating courses, faculty and student learning outcomes.

Loyola University Maryland utilizes several mechanisms for evaluating courses, including student course evaluation, faculty peer evaluations, and faculty annual updates. The latter require faculty to perform self-evaluation of courses and teaching effectiveness, and to provide evidence of achieving student learner outcomes. In turn, all these assessment vehicles are evaluated by the associate dean and dean. In the case of Loyola's proposed environmental, social and policy concentration, a review will be performed annually by the director of environmental studies and the Associate Dean for the Natural and Applied Sciences.

2. Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

The results of the assessment will be used for continual improvement of the concentration. Reports will be completed regularly and will include measures of student achievement of the concentration's learning outcomes. The reports, an assessment cycle, and the Concentration Outcome Maps (Appendix A and A.1) will be recorded in a centralized software system used university wide. Institutional evaluation will occur in accordance with the University's and Middle State's accreditation timelines. The cost-effectiveness of the program and concentration will be reviewed annually by the Dean.

Each department and program (including concentrations) at Loyola are required to submit an annual report, which includes progress towards the previous year's goals and a complete assessment report. The reports are evaluated by the Dean's office annually, and the Dean meets with the chair each year to discuss departmental progress. Concentrations as part of a program, also engage in academic program review on a seven-year cycle at Loyola, and assessment of the Environmental Studies program and environment, society, and policy concentration will be overseen by the dean of natural and applied sciences every 7 years.

N. Consistency with the State's Minority Student Achievement Goals (as outlined in COMAR 13B.02.03.05).

1. Discuss how the proposed program addresses minority student access & success, and the institution's cultural diversity goals and initiatives.

Loyola University Maryland has a strategic focus on enhancing equity and inclusion for the university community. The university is committed, through its mission and core values, to creating a community that embraces and celebrates the inherent value and dignity of each person. The strategic plan goal to enhance equity and inclusion guides faculty and administrators' work toward promoting inclusive academic excellence. Specifically, teaching practices identified by

Environmental Studies

AAC&U as highly impactful for the success of all students are being incorporated more fully in academic and cocurricular programs across the university, including in this proposed concentration.

The provost has invested in related professional development by funding cohorts of faculty fellows to explore, employ, disseminate, and support high-impact teaching strategies. Faculty Fellows for High-Impact Practices (HIPs) are represented in all three schools, including the Loyola College of Arts and Sciences. Following a similar model, a cohort for Equity & Inclusion Fellows and a cohort for Digital Teaching and Learning has been established.

Furthermore, a variety of studies have indicated that internships are key to improving a college student's return on investment and minimizing underemployment. This is especially true for students of color.¹⁶ The Global Green Skills Report 2023 and the Skills for a Greener Future report from the International Labour Organization provides new data on green skills and jobs to help transition the global workforce to a green economy future.^{17,18} By requiring internships or other authentic experiences, this proposed major will provide students from diverse backgrounds with the tools, mentors, and skills to discern their path and to embark upon a successful career.

O. Relationship to Low productivity

1. If the proposed program is directly related to an identified low productivity program, discuss how the fiscal resources (including faculty, administration, library resources and general operating expenses) may be redistributed to this program.

The Environment, Society, and Policy concentration is not a low productivity program.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

1. Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.

Loyola University Maryland is approved to offer distance education and abides by C- RAC Guidelines, but this concentration is not a distance education program .

2. Provide assurance and any appropriate evidence that the institution complies with the C- RAC guidelines, particularly as it relates to the proposed program.

Loyola University Maryland is approved to offer distance education and abides by C-RAC Guidelines, but this concentration is not a distance education program.

¹⁶ Racial Disproportionalities Exist in Terms of Intern Representation. Default. <https://www.naceweb.org/diversity-equity-and-inclusion/individuals-with-disabilities/ready-willing-but-still-underemployed/bf4d6e46-4f48-41b4-b72c-9f924bec31f9> (accessed 2024-03-07).

¹⁷ Global Green Skills Report 2023. LinkedIn Economic Graph. <https://economicgraph.linkedin.com/research/global-green-skills-report> (accessed 2024-03-21)

¹⁸ Skills for a Greener Future: A Global View; Strietska-Illina, O., Mahmud, T., Eds.; International Labour Organization, 2019.

Appendix A: Environment, Society, and Policy Concentration Outcome Map

Outcomes Alignment Map

Instructions: Use the key below to input codes in this column to align the program learning outcomes with Undergraduate Learning Aims.

Environmental Studies (BA) Learning Outcomes	Alignment to Loyola Undergraduate Learning Aims	Operational Details	Courses
PLO #1. Environmental Systems. Critically analyze and articulate the dynamics of Earth's environmental systems, including assessment of human-environmental interactions across spatial and temporal scales.	Intellectual Excellence 1; Intellectual Excellence 2; Intellectual Excellence 3; Intellectual Excellence 4	We interpret this as courses in environmental science.	(I) Care for Our Common Home: Earth System; (R) Environmental Science Elective(S); (M) Integral Ecology Capstone
PLO #2. Environmental, Social, & Political Systems. Examine and explain the relationships between humans and nature, and articulate the dynamic interactions among cultural, socio-economic, political, and ethical factors in environmental processes, emphasizing their implications for justice.	Intellectual Excellence 1; Intellectual Excellence 2; Intellectual Excellence 3; Intellectual Excellence 4; Promotion of Justice 1; Promotion of Justice 2; Promotion of Justice 3; Diversity 3; Diversity 4	We interpret this as courses in social sciences and humanities.	(I) Care for Our Common Home: Society & Policy; (R) Introduction to Integral Ecology; (R) Environmental Society & Policy Elective(s); (R) Environmental Philosophy elective(s); (M) Environmental Ethics elective(s); (M) Integral Ecology Capstone
PLO #3. Critical Understanding and Interpretation. Apply moral and ethical perspectives to construct and critically evaluate environmental arguments, and systematically analyze diverse sources for information using appropriate qualitative and/or quantitative methods.	Critical Understanding 1; Critical Understanding 2; Critical Understanding 3; Critical Understanding 4; Critical Understanding 5; Critical Understanding 6; Critical Understanding 7, Intellectual Excellence 3; Intellectual Excellence 4	We interpret this as courses in humanities and some natural and applied science courses.	(I) Care for Our Common Home: Earth System; (I) Care for Our Common Home: Society & Policy; (I) Introduction to Integral Ecology; (R) Environmental Society & Policy Elective(s); (R) Environmental Philosophy elective(s); (M) Eloquentia Perfecta elective; (M) Environmental Ethics elective(s); (M) Integral Ecology Capstone
PLO #4. Communication. Prepare and deliver clear, well-structured communications that convey the complexities of environmental issues and justice, suitable for academic, policy, and public audiences, as evidenced by presentations, reports, and advocacy materials.	Eloquentia Perfecta 1; Eloquentia Perfecta 2; Diversity 4; Promotion of Justice 2; Promotion of Justice 3	We consider this outcome as being incorporated across our curriculum as well as focused work in writing and communication courses.	(I) Care for Our Common Home: Earth System; (I) Care for Our Common Home: Society & Policy; (R) Introduction to Integral Ecology; (M) Eloquentia Perfecta elective; (M) Integral Ecology Capstone
PLO #5. Participatory Action. Design, advocate for, and, when appropriate, implement equitable and just solutions to environmental challenges, demonstrating an understanding of the complex interplay between environmental, social, cultural, and ethical factors, with consideration of their systematic impacts.	Intellectual Excellence 2; Intellectual Excellence 3; Critical Understanding 2; Critical Understanding 3; Critical Understanding 4; Promotion of Justice 1; Promotion of Justice 2; Promotion of Justice 3; Diversity 1; Diversity 2; Diversity 3; Diversity 4;	We consider this outcome as incorporated at the introductory and reinforcement level in many courses followed by focused work in the experiential and capstone courses.	(I) Foundation Courses; (R) Environmental electives elective; (R) Environmental Studies Experience; (M) Integral Ecology Capstone

Key - Loyola University Maryland Undergraduate Learning Aims

Undergraduate Learning Aim "Code"	Undergraduate Learning Aim Description
Intellectual Excellence 1	Appreciation of and passion for intellectual endeavor and the life of the mind
Intellectual Excellence 2	Appreciation of and grounding in the liberal arts and sciences
Intellectual Excellence 3	Excellence in a discipline, including understanding of the relationship between one's discipline and other disciplines; understanding the interconnectedness of all knowledge
Intellectual Excellence 4	Habits of intellectual curiosity, honesty, humility, and persistence
Critical Understanding 1	The ability to evaluate a claim based on documentation, plausibility, and logical coherence
Critical Understanding 2	The ability to analyze and solve problems using appropriate tools
Critical Understanding 3	The ability to make sound judgments in complex and changing environments
Critical Understanding 4	Freedom from narrow, solipsistic, or parochial thinking
Critical Understanding 5	The ability to use mathematical concepts and procedures competently, and to evaluate claims made in numeric terms
Critical Understanding 6	The ability to find and assess data about a given topic using general repositories of information, both printed and electronic
Critical Understanding 7	The ability to use information technology in research and problem solving, with an appreciation of its advantages and limitations
Eloquentia Perfecta 1	The ability to use speech and writing effectively, logically, gracefully, persuasively, and responsibly
Eloquentia Perfecta 2	Critical understanding of and competence in a broad range of communications media
Eloquentia Perfecta 3	Competence in a language other than one's own
Aesthetics 1	An appreciation of beauty, both natural and man-made
Aesthetics 2	A cultivated response to the arts, and the ability to express oneself about aesthetic experience
Leadership 1	An understanding of one's strengths and capabilities as a leader and the responsibility one has to use leadership strengths for the common good
Leadership 2	A willingness to act as an agent for positive change, informed by a sense of responsibility to the larger community
Faith & Mission 1	An understanding of the mission of the Catholic university as an institution dedicated to exploring the intersection of faith and reason, and experience and competence in exploring that intersection
Faith & Mission 2	An understanding of the mission of the Society of Jesus and of the religious sisters of Mercy, especially of what it means to teach, learn, lead, and serve "for the greater glory of God"
Faith & Mission 3	A habit of thoughtful, prayerful, and responsible discernment of the voice of God in daily life; a mature faith
Faith & Mission 4	Habits of reflection in solitude and in community
Faith & Mission 5	A commitment to put faith into action
Promotion of Justice 1	An appreciation of the great moral issues of our time: the sanctity of human life, poverty, racism, genocide, war and peace, religious tolerance and intolerance, the defense of human rights, and the environmental impact of human activity
Promotion of Justice 2	Commitment to promote justice for all, based on a respect for the dignity and sanctity of human life
Promotion of Justice 3	Commitment to and solidarity with persons who are materially poor or otherwise disadvantaged

Diversity 1	Recognition of the inherent value and dignity of each person, and therefore an awareness of, sensitivity toward, and respect for the differences of race, gender, ethnicity, national origin, culture, sexual orientation, religion, age, and disabilities
Diversity 2	Awareness of the structural sources, consequences, and responsibilities of privilege
Diversity 3	Awareness of the global context of citizenship and an informed sensitivity to the experiences of peoples outside of the United States
Diversity 4	Awareness of the multiplicity of perspectives that bear on the human experience, and the importance of historical, global, and cultural context in determining the way we see the world
Wellness 1	Attentiveness to development of the whole person—mind, body, and spirit
Wellness 2	Ability to balance and integrate care for self and care for others
Wellness 3	Understanding the importance of productive and responsible use of leisure time
Wellness 4	Freedom from addictive behaviors

Appendix A.1 – Environment, Society, and Policy: Course to Concentration Learning Outcomes Alignment

Environmental Studies (BA) Learning Outcomes	ENV 116	ENV 114	ENV 210	Ethics	COM	EnvHum	EnvSP	EnvSc	Env496	Env410 Capstone
PLO #1.		I						R		M
PLO #2.	I		R	M		R	R/M			M
PLO #3.	I	I	R	M	R					M
PLO #4.	I	I	R		R		R			M
PLO #5.	I	I	I				R		R	M

KEY: I = Introduced, R = Reinforced, M = Mastery

Course Key

ENV 116 - Care for our Common Home: Society & Policy

ENV 114 - Care for our Common Home: Earth system

ENV 210 - Introduction to Integral Ecology

Ethics - PH/TH Electives in Theology or Philosophy Ethics

COM - Environmental communication elective

EnvHum - Environmental Humanities

EnvSP - Environmental, Society, & Policy Electives (2)

EnvSc - Environmental Science Electives

ENV 496 - Environmental Studies Experience

ENV 410 - Integral Ecology Capstone

Environmental Studies Courses

Course Number	Course Title	Credits	Course Description
BL 154	Foundations of Biology III	3	An introduction to ecology, evolution, and population biology including the relationships among organisms, responses to stress, the mechanisms of genetic change and maintenance of diversity, mechanisms of evolution and speciation, biogeography, energy flow through ecosystems and resource allocation, food webs and ecosystem services, and biogeochemical cycles. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 155	Foundations of Biology III Lab	1	An intermediate lab course in which students conduct a long-term research project that requires: responsible use of living materials, revision and adaptation, expression and interpretation of data in graphs and tables, the completion of scientific calculations and statistics, and communication of results. Students also engage in computational analysis, modeling, and simulation of complex processes, discuss current topics in biology using evidence-based arguments, and explore sub-fields and career options in biology. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 276/SC 276	Human Health and the Environment	3	What does Lyme disease have to do with climate change? Why did children lose millions of IQ points to leaded gasoline and paint? Why do so many children in Baltimore have asthma? Answers may be found in this exploration of the bidirectional relationship between our health and the health of our homes, communities, food, air, waterways and climate. Study of toxicology, risk assessment, prevention, environmental justice, history, and policy will provide framework for understanding effects of environmental exposures. Examples of how major exposures such as air toxins are managed in Baltimore and Maryland lend context and relevance to class discussions. Finally, examples of environmental impacts on children, the most vulnerable population group will emphasize a major course theme: a multidisciplinary approach is necessary to guarantee the health of future generations and the planet. <i>Prerequisite: BL 111 or BL 154 or BL 201 or CH 114; or one SC 100-level course; or written permission of the environmental and sustainability studies minor director.</i>
BL 290	Insect Biology	3	Provides an introduction to the spectacular diversity of insects and their behavior, ecology, morphology, and physiology. The course emphasizes major innovations in insect evolution as well as emerging research on current threats to insect diversity such as climate change. The impact of insects on humans, including disease, pollination services, and more are also examined. Course content is split between lectures and labs, with labs focused on developing insect identification skills. <i>Requisites BL 150, BL 151, BL 152, BL 153, BL 154, BL 155</i>
BL 311	Research Methods: Plant Science	3	A laboratory only course where students gain hands-on understanding of the importance of plants to humans by exploring interactions within agricultural, urban, and natural ecosystems. The course emphasizes skills that integrate practical knowledge of plant science techniques and more universally applicable scientific skills. Laboratory topics include plant identification, plant propagation (including tissue culture), agricultural and urban ecology, and plant secondary compound production (including interactions with bacteria, fungi, animals, and humans). Students conduct research on plant interactions with abiotic factors, with a strong emphasis on experimental design, scientific writing, and data analysis. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>

BL 346	Plant-Animal Interactions	3	Interactions between plants and animals may strongly influence their evolution and ecology. These interactions are arguably the most important forces structuring ecological communities. Students explore the predominant interactions between plants and animals (e.g., pollination, herbivory, seed dispersal) using evolutionary and ecological approaches. The ecological conditions that favor certain types of interactions and the (co)evolution of interactions are emphasized. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 349	Biology of Mammals	3	Examines the diversity found within the class Mammalia to gain an understanding of the evolution, physiology, and ecology of these animals. An examination of the conservation problems of this group is included. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 350	Biology of Mammals with Lab	3	The diversity found within the class Mammalia is examined to gain an understanding of the evolution, physiology, and ecology of these animals. An examination of the conservation problems of this group is included. Students examine the distinctive characteristics of mammals, both in the lab and through field study of natural populations. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 364	Insect Biology with Lab	5	Provides an introduction to the spectacular diversity of insects and their behavior, ecology, morphology, and physiology. The course emphasizes major innovations in insect evolution as well as emerging research on current threats to insect diversity such as climate change. The impact of insects on humans, including disease, pollination services, and more are also examined. The lab focuses on insect collection, preservation, and identification skills. Students learn to distinguish a broad array of insects and have the opportunity to create their own insect collections through field trips and in-class work. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 380	Aquatic Ecology	5	Provides an introduction to aquatic ecosystems, with an emphasis on those found in the mid-Atlantic. There is a particular focus on the interactions between aquatic organisms and their environments, as well as the impacts of humans on these ecosystems. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 390	Conservation Biology	3	A comprehensive survey of the theoretical background and current practices in conservation biology. Students examine local and global threats to biological diversity; the measure and value of biological diversity; conservation strategies including the design and management of protected areas, captive breeding, reintroduction programs, and associated legislation; and ethical and moral responsibilities of our society as it interacts with nature and other nations. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 436	Evolution	3	An examination of the evidence for Darwin's theory of evolution by natural selection. Students study the details of the process of evolution from several perspectives including population genetics, evolutionary ecology, and macroevolution. topics include genome evolution, adaptation, speciation, and extinction. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
BL 445	Conservation and the Tree of Life	3	The field of conservation biology is changing rapidly, with evolutionary principles of growing importance in the preservation of biodiversity. Students explore the greatest threats to biodiversity and examine the biology of threatened and endangered species. The Tree of Life is examined along with the processes that have shaped the last 4.5 billion years of life on Earth. Learn how evolutionary relationships and phylogenetic diversity are used to inform conservation decisions when there is limited time and resources, allowing biologists to maximize the preservation and protection of Earth's biodiversity. Students evaluate, present, and discuss primary literature. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>

BL 471	Seminar: Special Topics in Ecology, Evolution, and Diversity	3	An examination of current topics in ecology, evolution, and diversity with an emphasis on primary literature. Students lead group discussions and/or make oral presentations. <i>Requisites BL 150, BL 151, BL 152, BL 153</i>
CM 385	Special Topics	3	An upper-level course in communication study. <i>Topic announced when course is offered.</i>
EC 102	Microeconomic Principles	3	Investigates how individuals in market economies make decisions about what goods will be produced, how they will be produced, and for whom they will be produced. Students learn to analyze the impacts of changes in markets; illustrate the concepts of consumer demand and production; and explain the process of profit maximization under various market structures. Topics include the laws of supply and demand; behavior of firms in competitive and noncompetitive markets; functioning of labor and capital markets; poverty and income inequality; economics and the environment; economic systems in other countries.
EC 103	Macroeconomic Principles	3	Introduces macroeconomic equilibrium, its impact on unemployment and inflation, and the effect of economic policy initiatives on that equilibrium. Students learn to predict the qualitative effect on changes in economic aggregates on each other and on GDP. Topics include the business cycle; national income and product accounting; equilibrium in the aggregate demand--aggregate supply model; the multiplier; the national debt; financial intermediaries; money and its creation; fiscal and monetary policy; comparative advantage and the gains from international trade; commercial policy; foreign exchange markets; and the balance of payments. Effects of international transactions are incorporated with each topic. <i>Prerequisite EC 102</i>
EC 220	Business Statistics	3	Introduces the concepts and application of statistics in management. Students learn to apply estimation and hypothesis testing to univariate and multivariate business problems. Topics include descriptive statistics and statistical inference; multiple regression; correlation; and trend and seasonal time series analysis.
EC 360	Environmental Economics	3	Examines contemporary issues of environmental quality, natural resource allocation, and conservation from the economic perspective. Students develop an understanding of the history of the environmental movement and learn to analyze environmental issues using economic tools. Topics include benefit-cost analysis, property rights, incentive-based pollution control policies, and a review of government regulatory performance. Students delve deeper into a specific area by conducting original research and writing a paper on a topic they develop in conjunction with the professor. <i>Prerequisite EC 102, EC 103</i>
ENV 114	Care for Our Common Home: Earth System	3	In this course, students from all disciplines explore how humans have changed the planet resulting in a new geologic age known as the Anthropocene. Using systems theory, students will learn about the Earth system including the cycling of energy and matter through these systems. Topics covered will include ecology and biodiversity, the climate system, and planetary boundaries. Students will explore the relationship between these systems and human activity and the resilience of ecologic and social systems. Additional topics covered in this course will include major environmental issues of the time such as climate change, biodiversity loss, pollution, and water availability. During this course, students will complete project in which they explore environmental justice with an environmental issue. The form of this project and the potential topics will be determined by the instructor.

ENV 116	Care for our Common Home: Society & Policy	3	In this course, students from all disciplines explore how human society interacts with the natural world. Students will survey current environmental policies. Concepts of environmental history, racism, and justice will be introduced. Students will gain a background in environmental economic theory, including markets, externalities, non-renewable resources, and the commons. They will also learn critiques of this approach, discussing ecological economics and envisioning alternate economic conceptions of a flourishing society. Finally, students will learn basic environmental accounting as well as critiques of current systems.
ENV 210 (NEW)	Introduction to Integral Ecology	3	Integral ecology is a term used to describe how humans may justly care for Earth, our common home. In this course students will explore the concept of integral ecology through a variety of humanistic disciplines (e.g. literature, philosophy, theology, history, arts). Through these disciplines, students will consider the interrelated ways the “societal” and the “natural” comprise our common home. Topics covered will include conceptions of nature, aesthetics, justice, and the consequences of the history of Western colonialism. <i>Prerequisites ENV 114, ENV 116</i>
ENV 224	Ecological Dynamics of the MidAtlantic	4	This course spans the realms of ecology, evolution, population biology, and community ecology, providing students with a comprehensive framework for understanding of the mechanisms shaping Earth's biodiversity. The course will be constructed to study the fundamental principles of ecology, exploring the interactions between organisms and their environments. Students will gain insights into how species adapt and evolve over time, shaping the biodiversity observed in different environments. The lab will explore these topics using urban, Chesapeake Bay, and other mid-Atlantic biomes. Students will also explore the factors that shape the size and distribution of populations through the introduction of models and real-world examples. <i>Prerequisite: ENV 114 or BL 111 or BL 154</i>
ENV 320	Environmental Science with Analysis	4	Expands upon the study of natural systems, human impacts, and the sustainability of the Earth system using the processes and properties of matter and energy to understand the biogeochemical cycles of the Earth system. Topics covered include the climate system; the quality of water, air, and soil; and how humans are altering the Earth system. Using a hands-on learning in a laboratory and outdoor setting, students collect and analyze environmental samples and are introduced to methods of statistical, graphical, and modeling analyses in environmental science. <i>Prerequisite: ENV 114 or BL 154; MA 109 or MA 151 or MA 251 or ST 110 or ST 210 or ST 265.</i>
ENV 410	Integral Ecology Capstone	3	In this course, environmental studies and sciences students will draw upon multiple disciplines to engage in discussion about their experiences and learning. Students will integrate and apply what they have learned in other courses to assess challenges, develop strategies, and communicate effectively for healing Earth. Students will learn from their peers and engage with communities beyond the classroom. <i>Pre or co-requisite ENV 496 and Environmental Studies or Environmental Science major</i>
ENV 496	Environmental Studies Experience	3	A capstone experience in the environmental and sustainability studies minor, in which a student arranges an internship, independent study, or research experience with a faculty sponsor to engage in an in-depth exploration of a topic associated with environmental or sustainability issues.

HS 211	American Environmental History	3	Explores the changing relationship between people and the natural world from the colonial period to the present in the region that became the United States. The physical environment shaped the development of American culture even as different groups of Americans transformed that environment. Topics include Native American ideas about the natural world, European transformations of the environment, the rise of capitalism and its environmental consequences, water the West, the development of an environmental movement, and current debates about the natural world and our place in it. <i>Prerequisite: HS 100.</i>
HS 222	Global Environmental History	3	Designed to provide a nuanced understanding of environmental history from a global perspective. Environmental historians explore the symbiotic relationship between humans and the natural world as one of many factors that have shaped the course of human events. Through a combination of lectures, discussions, and analysis of primary and secondary sources, this course explores the ways in which humans have shaped their environments and have, in turn, been shaped by their environments for several millennia. Temporally, the course covers the time period between the moment that humans learned to control fire to contemporary debates surrounding the human role in global climate change. Topics covered include water management, diseases, climate change, sustainability, and transitions between different energy regimes, among other topics. <i>Prerequisite: HS 100.</i>
HS 314	Disasters in American History	3	Examines American history through the lens of disasters. Disasters offer a unique perspective from which to examine social, political, and economic structures and institutions. Explores disasters at various points in U.S. history in an effort to understand how these calamities have affected events; how the impact and understanding of disasters have changed over time; and ultimately, to provide a window onto the changing nature of American society over the past 200 years. <i>Prerequisite: HS 100.</i>
HS 490	Seminar: Environmental History in Latin America	3	Explores how humans and the environment have interacted over time in the Americas from pre-Columbian populations to the recent past. The study of historical change in human-nature interactions reveals both how people have affected the environment and how nature has shaped human actions. Because of the wide range of research methods and topics it embraces, the burgeoning field of Environmental History is both compelling and challenging. This course examines diverse views of nature, ecological effects of shifting agricultural and consumption patterns, the impact of technological advances, political ecology, conservation, and environmental movements. In part, this course seeks to define what constitutes "Environmental History" and to determine if there is a coherent set of problems and issues that this emergent field addresses. <i>Prerequisite: HS 100.</i>
LW 411	Environmental Law and Policy	3	Surveys the statutes, regulations, and common law principles and policies that address a wide range of environmental problems. Also compares different approaches to resolving environmental problems, e.g., traditional regulations, pollution prevention, and ecological restoration.
MG 222	Introduction to Sustainable Business	3	Introduces sustainable business principles and methods, as well as examples of how they are used in real-world situations. Students learn how to integrate sustainable business into organizational management by investigating various business functions such as marketing, supply chain management, finance, accounting, political strategy, IT management, and human resource management. In addition, the course explores the role of ethical decision-making in sustainable business practices and the importance of corporate social responsibility. Students also delve into the concepts and

			theories of stakeholder engagement and materiality and how it can be effectively implemented in sustainable business strategies. Throughout the course, students have the opportunity to analyze case studies of successful sustainable businesses and apply the principles learned to their own future careers in business and management.
MG 333	Global Strategy for Sustainability	3	Examines how corporations deliver value to people, planet, and profit while creating and sustaining competitive advantage. Students critically assess the relationship between environmental, social, and governance (ESG) practices and the company's financial performance, contingent on time-horizon (short-term vs. long-term), industry, region, and cultural context. Additionally, students learn and apply managing tools, industry standards, and metrics to plan and evaluate sustainability strategies. <i>Prerequisite: MG 222, IB 282 or BH 282.</i>
MG 433	Environmental, Social, and Governance Reporting	3	Provides an understanding of the key concepts and processes related to the management, measurement, and reporting of environmental, social, and governance (ESG) issues that local and global companies face. The course helps students develop their knowledge around: identifying and prioritizing material ESG issues; approaches to addressing ESG risks and opportunities; criteria for measuring ESG performance; and reporting frameworks and standards for corporate sustainability. <i>Prerequisite: MG 201 or BH 201; IB 282 or BH 282.</i>
PH 125	Practical Meteorology	3	Teaches students the science behind what causes weather. Course content highlights cloud types, storm systems, weather instruments, and foundations of forecasting. Throughout the course, students analyze the most up-to-date computer models, radar, satellite, and forecast discussions. This course prepares students to create their own weather forecasts by understanding meteorological terminology, interpreting graphs, and forecasting models. By the end of the semester, students put their skills to the test by effectively communicating their personalized forecasts with the class.
PH 150	Energy & Environment	3	An examination of energy sources for the future: nuclear power, breeder reactors, gasoline substitutes, the future of coal, solar and geothermal sources are studied in view of the laws of thermodynamics. Studies the impact of energy use on resource conservation, water resources, air quality, waste disposal, land use.
PL 232	Philosophical Perspectives: Gender and Nature	3	Examines the history of Western concepts of nature and science with particular attention to how ideas about hierarchy, gender, and violence have affected our relationship to the natural world. <i>Prerequisite: PL 201.</i>
PL 235	Philosophical Perspectives: Philosophy and Science	3	A philosophical examination of science. Explores topics such as confirmation of the scientific method, the possibility of scientific progress, and the value of scientific inquiry. <i>Prerequisite: PL 201.</i>
PL 236	Philosophical Perspectives: Environmental Philosophy	3	Explores the place of human beings within the much larger natural world and the fundamental conceptions of nature. Is nature savage, a resource for our use, or a mindless machine? Special topics may include animal consciousness, sustainability, indigenous cultures, global climate change and other ecological crises, and the effects of contemporary technologies. <i>Prerequisite: PL 201.</i>
PL 314	Environmental Ethics	3	An investigation of the relationship between human beings and the natural world, with attention to the ethical dimensions of our life-style and environmental policies. Students explore their obligations to the nonhuman world and to future generations. <i>Prerequisite: PL 201.</i>

PL 393	Technology and the Crisis of Nature	3	Is the human use of technology rooted in a kind of thinking or way of being? Through a reading primary of Martin Heidegger's work, students look at the dark side of technology and the devastating effects of human technical manipulation of the natural world. <i>Prerequisite: PL 201.</i>
PS 358	Global Environmental Politics	3	Why is global cooperation on climate change so difficult? What assumptions, interests, and strategies are the main obstacles to successful environmental international relations? This course analyzes environmentalism and climate change in three modules: theory, policy, and activism. Students are expected to be active participants, invest time in substantial readings, and develop an independent project with an activism component. The experience of indigenous and native peoples is at the center of this course.
PT 377	Landscape and Nature Photography	3	An intensive workshop in photographing the landscape and elements from it as an expression of personal statement. <i>Prerequisite: PT 270 or PT 300 or PT 301.</i>
SA 315	Landscape	3	Explores drawing and painting the landscape. Deals with naturalistic ideas, light being a primary concern. Students improve drawing and painting skills and media as they work in the classroom and at locations around the Loyola community. Slide lectures and a museum visit supplement outdoor sessions. <i>Prerequisite: SA 224 or written permission of the instructor.</i>
SA 399	Special Topics	3	An examination of a specific topic in studio art. Topic may be related to issues of medium, technique, genre, cultural, historical, or other factors.
SC 276/BL 276	Human Health and the Environment	3	What does Lyme disease have to do with climate change? Why did children lose millions of IQ points to leaded gasoline and paint? Why do so many children in Baltimore have asthma? Answers may be found in this exploration of the bidirectional relationship between our health and the health of our homes, communities, food, air, waterways and climate. Study of toxicology, risk assessment, prevention, environmental justice, history, and policy will provide framework for understanding effects of environmental exposures. Examples of how major exposures such as air toxins are managed in Baltimore and Maryland lend context and relevance to class discussions. Finally, examples of environmental impacts on children, the most vulnerable population group will emphasize a major course theme: a multidisciplinary approach is necessary to guarantee the health of future generations and the planet. <i>Prerequisite: BL 111 or BL 154 or BL 201 or CH 114; or one SC 100-level course; or written permission of the environmental and sustainability studies minor director.</i>
SC 373	Sociology of Human Rights	3	Human rights are approached from a comparative historical and interdisciplinary perspective. Students learn about foundational notions of human rights as they are interpreted in accordance with various belief systems and secular humanist philosophy; the UN-based human rights regime; and contemporary challenges to the realization of human rights in the global era. Taught from a sociological perspective, this course takes a critical approach to the study and analysis of the human rights system, with special focus on contradictions, failures, and collective mobilization. <i>Prerequisite: SC 100 or SC 102 or SC 202 or SC 203.</i>
SC 374	Sociology of Development	3	The topics of political and economic development are approached from a comparative historical perspective. Students learn about the history of modern development practices; the postulates and assumptions of various theories of development; and the various criticism/critiques of development

			in regard to European colonialism, Cold War geopolitics, and contemporary global integration and backlashes. <i>Prerequisite: SC 100 or SC 102 or SC 202 or SC 203.</i>
SC 440	Global Sociology	3	A reading and writing intensive seminar that engages with global social theory and the writings of sociologically informed thinkers who critically analyze the processes of global connectivity, global movement, and global social change from a macro, longue duree perspective. Global social formations include the capitalist economic system that is anchored by private property relations the world over, a political system organized by and for territorially bound nation-states and in the name of a legally sanctioned citizenry, and a cultural system enamored by processes of service-driven consumerism. With a special focus on social order, social power, and social change, this course emphasizes the study of social inequality/stratification, systemic crisis, and structural adaptation. <i>Prerequisite: SC 100 or SC 102 or SC 202 or SC 203.</i>
ST 210	Introduction to Statistics	3	A non-calculus-based course covering descriptive statistics; regression model fitting; probability; normal, binomial, and sampling distributions; estimation; and hypothesis testing. <i>Prerequisite: MA 109 or a score of 48 or better on Part II of the Math Placement Test or a score of 65 or higher on ALEKS or one year of high school calculus.</i>
TH 232	Food, Hunger, and the Bible	3	Investigates issues related to food and hunger in the Hebrew Bible and New Testament texts, the ways in which these biblical concepts inform a Christian theology and spirituality of food, and how these biblical concepts relate to modern ethical and social justice issues including: poverty, hunger, and food access; food production; ethical labor practices in agricultural and food industries; sustainability; ethical treatment of animals; community and hospitality, etc. Students investigate biblical principles and apply them to current issues-both local and global. <i>Prerequisite: TH 201.</i>
TH 312	Christian Environmental Ethics	3	How are human beings to value non-human creation? Possible answers are considered to this question by drawing on both Christian theological/ethical sources and contemporary environmental science. The focus is especially on: 1) how to construct an environmental ethic in light of the constant flux of nature; 2) the relationship between ecological justice and social justice; and 3) the relationship between the global economy and the biosphere. <i>Prerequisite: TH 201.</i>
TH 395	Justice, Peace, and the Integrity of Creation: A Christian Theological Inquiry	3	Explores the ways in which justice, peace, and the integrity of creation are interrelated, and examines the challenges that this poses for ethical action. Students examine the political ecology of the contemporary global context; explore sources of Christian revelation that can help to judge this context;

			and begin to consider how they might more fully commit their lives to social and environmental justice. <i>Prerequisite: TH 201.</i>
WR 301	Writing About Science	3	Students practice techniques of writing nonfiction for the general public and engage in rhetorical analysis of the representation of science in popular discourse. Students read contemporary popular nonfiction that draws upon science and learn how writers use the art of prose to contribute to scientific literacy. <i>Prerequisite: WR 100.</i>
WR 354	Writing About the Environment	3	Explores various representations of the American environment from European contact to the present in this discussion based, reading intensive course. The following questions are explored: What is nature? What is culture? Why do we partition the world as we do? What cultural myths inform American perceptions of our environment? To what extent-and to what effects-do Old World values influence contemporary perceptions of landscape and, consequently, public policy? In what ways do they influence our communities? How do our lifestyles impact the environment? What is just? What is sustainable? With a special focus on justice, the ways in which the representations of how nature continues to influence the complex relationship between Americans and their physical environment is explored. <i>Prerequisite: WR 100.</i>



<i>Environment, Society and Policy AOC within B.A. in Environmental Studies</i>		
<i>Liberal Arts Core</i>	<i>Credits</i>	<i>Notes</i>
1. WR 100 Effective Writing	3	
2. History 100 Encountering the Past	3	
3. History 200 Level OR English 200 Level	3	
4. EN 101 The Art of Reading	3	
5. World Language Intermediate II Level (104 level)*	3	
6. ENV 116 Care for Our Common Home: Society & Policy	3	Program Core that meets Loyola Core
7. EC 102 Microeconomic Principles	3	Concentration Courses that meets Loyola Core
8. Fine Arts (AH109, AH110, AH111, DR250, DR251, DR252, MU201, MU202, MU203, MU204, PT270, SA224 or SA227)	3	
9. Math Core (ST 210 or EC 220)	3	Concentration Courses that meets Loyola Core
10. ENV 114 Care for Our Common Home: Global Environment	3	Program Core that meets Loyola Core
11. Science/Math/Computer Science	3	
12. PL 201 Foundations of Philosophy	3	
13. TH 201 Theology Matters	3	
14. PL 202 – 299 OR TH 202 – 299	3	
15. Environmental Ethics PL 314 (<i>If student took TH 202 – 299 for #14</i>) TH 312 (<i>If student took PL 202 – 299 for #14</i>)	3	Program Core that meets Loyola Core
Diversity and Justice Course (3)**		

*Students who place higher than the 104 level on Loyola's world language placement exam may be exempt from the world language core requirement, pending confirmation from Loyola's Modern Language department after a **proctored on-site** placement exam. Those students will need to complete 1 additional free elective in lieu of the world language core.

The Diversity and Justice course requirement may simultaneously fulfill a Core, Major, Minor or Elective requirement. The Diversity and Justice course may be taught in any discipline and will focus on domestic diversity, global diversity, or justice awareness. **The Diversity and Justice course must be taken at Loyola.

	<i>Credits</i>	<i>Notes</i>
16. ENV 210 Introduction to Integral Ecology	3	Program Core Course
17. Communicating about the environment elective (WR 301 or WR 354 or CM 385 or SA 399) ¹	3	Program Core Course
18. EC 103 Macroeconomic Principles	3	Environment, Society, and Policy Concentration Course
19. EC 360 Environmental Economics	3	Environment, Society, and Policy Concentration Course
20. LW 411 Environmental Law & Policy or PS 358 Global Environmental Politics	3	Environment, Society, and Policy Concentration Course
21. ENV 496 Environmental Studies Experience	3	Program Core Course
22. ENV 410 Integral Ecology Capstone	3	Program Core Course
23. Environment, Society, & Policy Elective ²	3	Environment, Society, and Policy Concentration Course
24. Environment, Society, & Policy Elective ²	3	Environment, Society, and Policy Concentration Course
25. Environmental Humanities Elective ^{2,3}	3	Environment, Society, and Policy Concentration Course
26. Environmental Science Elective ²	3-5	Environment, Society, and Policy Concentration Course
<i>Electives</i>		
27. Free Elective	3	
28. Free Elective	3	
29. Free Elective	3	
30. Free Elective	3	
31. Free Elective	3	
32. Free Elective	3	
33. Free Elective	3	
34. Free Elective	3	
35. Free Elective	3	
36. Free Elective	3	
37. Free Elective	3	
38. Free Elective	3	
39. Free Elective	3	
40. Free Elective	1-3	

**Major has no limit on double counting for core or another major or minor outside of Environmental Studies or Environmental Science

A minimum of 120 credits are required to graduate.

¹ CM 385 and SA 399 must be approved by director to fulfill this requirement.

² At least 2 electives must be at the 300 or 400 level.

³ Honors students are exempt from the environmental humanities elective.

Appendix D: Faculty Chart - Environmental Studies - Environment, Society, and Policy

Faculty Chart - Environment, Society, and Policy

Last Name	First Name	Highest Degree	Highest Degree Field	Title/Rank	Status	Classes Taught
Couch	Brock	Ph.D.	Mathematics and Science Education	Assistant Teaching Professor	Fulltime	BL 380, BL 471, ENV 224
Derrickson	Elissa	Ph.D.	Biology	Associate Professor	Fulltime	BL 350
Garfinkel	Chloe	Ph.D.	Ecology & Evolutionary Biology	Assistant Teaching Professor	Fulltime	BL 155, BL 290, BL 471, ENV 224
Per course instructor		Variable	Variable	Affiliate Instructor	Parttime	BL 276, BL 349, BL 364, BL 390, BL 445
Roche	Bernadette	Ph.D.	Biology	Associate Professor	Fulltime	BL 346, BL 436, BL 471
Veatch-Blohm	Maren	Ph.D.	Plant Physiology	Professor	Fulltime	BL 154, BL 311, ENV 224
Dahl	Elizabeth	Ph.D.	Earth System Science	Associate Professor	Fulltime	ENV 114, ENV 410, ENV 496
Biswas	Masudul	Ph.D.	Communication	Professor	Fulltime	CM 385
Kobell	Rona	M.A.	English, Environmental Sustainability	Affiliate Instructor	Parttime	CM 385
Pascual-Ferra	Paola	Ph.D.	Communication	Associate Professor	Fulltime	CM 385
Burger	John	Ph.D.	Economics	Professor	Fulltime	EC 103
Doucoure	Kadidiatou	Ph.D.	Economics	Assistant Professor	Fulltime	EC 103
Dougherty	John	Ph.D.	Agricultural Development and Environmental Economics	Assistant Professor	Fulltime	EC 102, EC 360, ENV 116
Elkes	Lynn	MBA	Business Administration	Assistant Teaching Professor	Fulltime	EC 102
Friebele	William	MFA	Studio Art	Associate Professor	Fulltime	SA 399

Keehan	Sean	Ph.D.	Economics	Executive in Residence	Fulltime	EC 102
Lyons	Thomas	MBA	Business Administration	Assistant Teaching Professor	Fulltime	EC 102
Schwartz	Jeremy	Ph.D.	Economics	Professor	Fulltime	EC 103
Sedgley	Norman	Ph.D.	Economics	Professor	Fulltime	EC 103
Tan	Kerry	Ph.D.	Economics	Professor	Fulltime	EC 102
Carey	David	Ph. D	History	Professor	Fulltime	HS 222, HS 490
Mulcahy	Matthew	Ph. D.	History	Professor	Fulltime	HS 211, HS 314
Part time affiliate instructor		J.D.	Law	Affiliate Instructor	Parttime	LW 411
Kang	Jinyoung	Ph.D.	Management	Assistant Professor	Fulltime	MG 222, MG 333, MG 433
Bertram	Alexander	M.S.	Statistics	Affiliate Instructor	Parttime	ST 210
Calise	Anthony	M.S.	Statistics	Affiliate Instructor	Parttime	ST 210
Deshpande	Neeta	M.S.	Statistics Teaching	Teaching Professor	Fulltime	EC 220, ST 210
Drummey	Kevin	Ph.D.	Bayesian Statistics, Mathematics Education	Assistant Teaching Professor	Fulltime	EC 220, ST 210
Lee	Bu Hyoung	Ph.D.	Statistics: Time Series Analysis	Assistant Professor	Fulltime	ST 210
Biss	Mavis	Ph.D.	Philosophy	Associate Professor	Fulltime	PL 314
Gordon	David	Ph.D.	Philosophy	Assistant Teaching Professor	Fulltime	PL 236
Gursozlu	Selin	Ph.D.	Philosophy	Associate Professor	Fulltime	PL 232
Lotfi	Sarvnaz	Ph.D.	Science, Technology & Society	Affiliate Instructor	Fulltime	PL 235
Page	Meghan	Ph.D.	Philosophy	Associate Professor	Fulltime	PL 235, PL 314
Sentesy Wagner	Mark	Ph.D.	Philosophy	Teaching Professor	Fulltime	PL 236
Snow	Dale	Ph.D.	Philosophy	Associate Professor	Fulltime	PL 232
Hanley	Catriona	Ph.D.	Philosophy	Associate Professor	Fulltime	PL 393

Part time affiliate instructor	Variable	Variable	Affiliate Instructor	Parttime	PH 150
Holc	Janine	Ph.D.	Political Science	Professor	Fulltime PS 358
Hendrick	Joshua	Ph.D.	Sociology	Associate Professor	Fulltime SC 373, SC 374, SC 440
Castillo	Daniel	Ph.D.	Theology	Associate Professor	Fulltime ENV 210, ENV 410, TH 312, TH 395
Eklund	Rebekah	Th.D.	Theology	Professor	Fulltime TH 232
Part time affiliate instructor	Variable	Variable	Affiliate Instructor	Parttime	PT 377, SA 315
Curtis	Tiffany	Ph.D.	English	Assistant Teaching Professor	Fulltime WR 354
Ryan	Teresa	Ph.D.	Literature	Associate Professor	Fulltime ENV 210, WR 301, WR 354
Satterfield	Jane	MFA	Writing	Professor	Fulltime WR 354
Lau	Marie	M.S.	Biology	Assistant Teaching Professor	Fulltime BL 154
Jones	Randall	Ph. D	Physics	Associate Professor	Fulltime ENV 114
Robey	Molly	M.S.	Applied Meteorology/ Communication	Assistant Teaching Professor	Fulltime PH 125

Maryland Higher Education Commission

TABLE 1: PROGRAM RESOURCES					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue (c + g below)	\$87,960	\$202,626	\$366,384	\$585,300	\$765,952
a. Number of F/T Students	4	9	16	25	32
b. Annual Tuition/Fee Rate	\$21,990	\$22,514	\$22,899	\$23,412	\$23,936
c. Total F/T Revenue (a x b)	\$87,960	\$202,626	\$366,384	\$585,300	\$765,952
d. Number of P/T Students	0	0	0	0	0
e. Credit Hour Rate	0	0	0	0	0
f. Annual Credit Hour Rate	0	0	0	0	0
g. Total P/T Revenue (d x e x f)	0	0	0	0	0
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 – 4)	\$87,960	\$202,626	\$366,384	\$585,300	\$765,952

2. Tuition and fee revenue based on projected students at annual tuition and fee for full-time students. No part-time students are calculated.

2.a. In-coming class sizes estimated as 4, 6, 8, 10, and 12 for Years 1-5. Retention rates of ~88% for year 1 to year 2, and ~91% for year 2 to year 3, using Loyola averages.

2.b. From Enrollment Management (Budget Comm presentation 03.13.2024)

2.c. FTE x tuition and fee

Loyola University Maryland will provide the resources required to support the proposed program and its concentrations. Revenue from the program is expected to exceed expenses within the first year of the program's start with modest increases in revenue projected for years two through five.

Maryland Higher Education Commission

TABLE 2: PROGRAM EXPENDITURES:

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$4,844	\$69,169	\$217,071	\$270,972	\$321,972
a. Number of FTE	0.125	1.000	2.375	3.000	3.500
b. Total Salary	\$4,500	\$54,635	\$168,997	\$210,639	\$249,660
c. Total Benefits	\$344	\$14,534	\$48,074	\$60,333	\$72,312
2. Admin. Staff (b + c below)	0	0	0	0	0
a. Number of FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
3. Support Staff (b + c below)	\$0	\$13,849	\$14,264	\$29,465	\$30,349
a. Number of FTE	0	0.25	0.25	0.5	0.5
b. Total Salary	0	10,625	10,944	22,544	23,220
c. Total Benefits	0	\$3,224	\$3,320	\$6,921	\$7,129
4. Technical Support and Equipment	\$5,000	\$6,250	\$7,500	\$7,500	\$7,500
5. Library	\$6,663	\$6,929	\$7,206	\$7,495	\$7,794
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	\$1,400	\$3,150	\$5,600	\$8,750	\$11,200
TOTAL (Add 1 – 7)	\$17,907	\$99,347	\$251,642	\$324,182	\$378,815

1. Number of per course faculty: 1, 2, 3, 4, and 4 for Years 1-5, respectively. Used a 4/4 teaching load as 1 FTE.
2. No administrative staff anticipated
3. Program Administrator: Year 2: half-time split between BA and BS degrees; becomes full time, split between BA and BS degrees, in Year 4. Anticipated 3% annual increase
4. Partial contribution to lab supplies and equipment purchases.
5. Split between proposed BA and BS degrees.
7. Surcharges for Records (250/student) and AASC (100/student).

Expenditures are limited. Per course faculty are included in the calculation to cover specialized courses within the program. Additionally, minimal technical equipment and library courses will be required as this program builds off the already existing undergraduate program resources. Program expenditures do not outpace projected revenue.