# Cycling for Change: Empowering UMD Students through Sustainable Mobility and Policy Awareness

Proposing an Introduction to Cycling course at the University of Maryland in Collaboration with Prince George's County Department of Planning

PLCY 400

UMD Capstone

Max Engel
Anna Gerstein
Jeremy Goldstein
Markus Tarjamo

**Abstract:**

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This research presents a comprehensive proposal for an introduction of a Cycling 101 class at the University of Maryland (UMD), developed in collaboration with the Prince George's County Planning Department. This initiative aims to bridge the gap between the cycling community at UMD and policy awareness, addressing issues such as sustainability, mental health and physical well being. Through collaboration with experts like Mr. Michael Jackson and Professor Kimberly Driver, the project evolved into a passion project, empowering students through cycling education.

The proposed course, designed as an "I-series" course, covers a range of topics including cycling mechanics, safety, environmental sustainability, and mental and physical health benefits. The research outlines the process of creating the course, emphasizing the importance of a well-structured syllabus and efficient review by university committees. Potential locations for the course within UMD's academic structure, particularly in the School of Public Health and School of Public Policy, are explored.

Extensive literature supports the positive impact of cycling on physical and mental health, reinforcing the course's potential benefits. The research findings suggest that Cycling 101 aligns with UMD's commitment to sustainability and offers tangible advantages for students' well-being. The proposed collaboration holds significance for both UMD and the Prince George's County Planning Department, contributing to a cycling-friendly environment and promoting holistic urban mobility.

In conclusion, this research validates the feasibility of introducing Cycling 101 at UMD, highlighting its positive impacts on students, the university community, and urban planning in Prince George's County. The collaboration serves as a catalyst for sustainable practices and holistic well-being, aligning with shared goals between the university and the Planning Department.

**Introduction:**

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In collaboration with the Prince George's County Planning Department, this final project explores the positive impacts of creating an Introduction to Cycling class at the University of Maryland. Rooted in extensive research and a shared commitment to well-being and sustainable urban mobility, our capstone initiative aims to bridge the gap between the vibrant cycling culture at UMD and crucial policy awareness. Beyond teaching the fundamental skills of cycling, our course seeks to instill a profound understanding of sustainability, mental health, and physical well-being among students in order to create a diverse class for students from all backgrounds.

Cycling has emerged not only as a popular mode of transportation, but as an environmentally friendly and health-promoting activity. Recognizing its potential for positive impact, our project delves into the creation of a course that integrates practical riding lessons for varying skill levels. We strive to empower students not only to navigate their campus on two wheels but also to become informed advocates for a healthier, more sustainable community.

This collaborative effort involved working closely with Mr. Michael Jackson from the Prince George's County Planning Department, providing insights into urban development and infrastructure. Additionally, our interactions with Professor Kimberly Driver, an expert in cycling education, were instrumental in shaping the vision and structure of the proposed Introduction to Cycling class.

This collaboration and research uncovered concrete steps to create a cycling course for academic credit, delving into the intricacies of developing a syllabus, choosing the right academic department, and navigating the university's curriculum approval process through research. Our findings not only outline the practicalities of course creation but also emphasize the potential benefits for students' physical and mental well-being, and recognizing the privilege that comes along with knowing how to cycle.

The proposed Cycling 101 course aligns with the university's commitment to sustainability and carbon neutrality, offering a practical avenue for students to engage with eco-friendly transportation practices. Moreover, this collaboration holds significance for the Prince George's

County Planning Department, as it aligns with their goals of fostering a cycling-friendly environment within the community.

As we present the culmination of our research and proposal, we envision a future where the Introduction to Cycling class becomes an integral part of the University of Maryland's curriculum, contributing not only to the enrichment of student experiences but also to the broader goals of sustainable urban planning. Through this assignment, we share the transformative potential of cycling education in shaping healthier individuals and communities.

**Methodology:**

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The methodologies used for research in this capstone project aimed to investigate both the benefits of cycling to college-aged students, and the design process for starting a new course for academic credit at the University of Maryland, in collaboration with the Prince George's County Planning Department. This research used a varied approach, combining literature reviews, analysis of university resources and guidelines, data collection, and meetings with experts.

When conducting our research on various benefits of cycling including physical and mental health benefits, in addition to cycling and sustainable policy, we studied and analyzed several academic journals, cycling reports, medical journals, policy-related documents, and more. The Journal of Physical Therapy Science provided great insights on physical benefits of cycling like improvements to balance, and Arthritis.org detailed the positives cycling has on joint health. The EPA government website was a useful tool for us researching sustainability policy and cycling, providing us with great data on greenhouse gas emissions from cars and how much can be cut when cycling. The Communications Earth and Environment policy report on Historical patterns and sustainability implications of worldwide bicycle ownership and use gave us keen insight into the growing popularity of cycling, and how it is feasible to create this type of course today. Using web-based academic tools like Google Scholar and Jstor provided us with detailed expert data and testimony which we utilized in various ways to create our proposal.

Our research also focused, to a lesser extent, on the course development and design process for creating a new course for academic credit at the University of Maryland. This research involved analyzing a lot of University resources and material. Scouring over UMD's websites provided direction on the process of creating a new course. UMD course sites with instruction guides like the "Proposing an I-Series Course" and the "VPAC Course Approval Process" were extremely valuable to us, listing out specific steps one must take when looking to create a new course. Other procedural research which had to be done included researching which school the course would fit within. The American Kinesiology Association and their feature on UMD's

Kinesiology department ensured us this is a practical spot for the course, in addition to the School of Public Policy and Public Health.

Meetings with experts including Mr. Jackson from the Prince George's County Planning Department, and Kimberly Driver, expert on cycling education and former professor of a similar cycling course at Montgomery College provided us with valuable information used in this project. Whether it was specific steps the planning department has taken in the past, or what to include and not include in the report, Mr. Jackson helped guide us and provide us with useful recommendations. Ms. Driver helped greatly in this project by giving us her feedback on the course she taught. She recommended the addition of certain units and modules, advised us on what worked best and what to steer clear of, and more.

**Findings:**

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*Research Questions: Bureaucratic:*

1. ***What specific expertise and qualifications should a professor have to teach the cycling class?***

The data we will collect and review to understand the specific expertise and qualifications a professor is required to have will be faculty qualification guidelines and documents from the University, a review of faculty credentials and experiences, and surveys on student preferences for professors. In addition, we will review similar cycling courses at Montgomery College and elsewhere in the area to determine which qualifications we should strive for in our cycling instructor here at UMD.

*Interview with Professor Kimberly Driver:*

During our interview, we talked to Professor Driver who led a Cycling Class at Montgomery College. Within this interview, we asked her a few questions related to the qualifications of a professor who is teaching a cycling course at the university. Some of her thoughts and suggestions on the qualifications of the cycling professor include:

The professor must be physically fit - teaching 10-15 students a course that requires physical activity, it is essential that the professor is fit enough to run, manage, participate in, and maintain the course.
The professor must be knowledgeable enough to teach the basics, consisting of:

- Changing a tire
- Bike maintenance
- Familiarity with the bicycle's shift gears
- Adjusting seats for students based on height

In addition to knowing how to teach the basics of cycling, the professor must have enthusiasm for fitness and cycling, coupled with the ability to inspire and motivate participants.
They must also be able to assist students no matter their skill level. Some students may have familiarity with riding a bike and the skills to ride, many others may not. It is important that the professor is able to assist students no matter their level of biking experience.

Qualifications to be a UMD Professor:
From UMD Course Policy:
"University of Maryland Professor"

"This title may be used for nationally distinguished scholars, creative or performing artists, or researchers who have qualified for full-time appointments at the University of Maryland, Baltimore at the level of professor, who are active in MPowering the State programs, and who also qualify for full-time appointment at the University of Maryland, College Park at the level of professor. Holders of this title may provide graduate student supervision, serve as principal investigators, and participate in departmental and shared governance. Initial appointments are for three years and are renewable annually upon recommendation to the Provost by the unit head and dean. This is a non-paid, non-tenure track title but initial appointments, except in the case of faculty who hold full-time appointment at the University of Maryland, Baltimore, as professor, must follow the procedures for appointment as a new tenured Professor. For appointment of professors from the University of Maryland, Baltimore, the initial appointment must follow this University of Maryland Professor appointment procedure, using this transmittal form."

Granted, these are the qualifications for being a Professor at UMD, but they are not teaching individuals just course content but also a physical skill. Based on the data we found, here are other suggestion we have:

*Certifications and Training:*
Look into whether the instructor has specific certifications or training programs that cycling instructors would benefit from. These can include:
Bike Instructor Certification Program: https://icp.bike/

More information - https://usacycling.org/coaches/resources/bicp

*Teaching Experience:*

Consider the importance of teaching experience, not only in terms of cycling instruction but also in general teaching related to policy issues that correspond with Cycling (sustainability and health). Experience in effectively communicating with and guiding students through practical activities is crucial.

*Safety Measures:*

The professor should be well-versed in cycling safety guidelines, including rules of the road, proper use of safety equipment, and emergency procedures.

*Adaptability:*

Explore the ability of the professor to adapt to different learning styles and needs. Given the diverse backgrounds and experiences of students, it is essential that an instructor should be able to tailor their teaching approach to accommodate various learning preferences.

*Communication Skills:*

The instructor should be able to clearly convey instructions, provide constructive feedback, and facilitate class discussions effectively.

*Passion for Cycling:*

An instructor who is genuinely enthusiastic about the subject matter is more likely to inspire and engage students in the course. It is also beneficial to teach and speak on behalf of their own personal experiences.

*Integration of Technology:*

Consider whether there is a need for the instructor to integrate technology into the course. This could include using cycling apps, GPS devices, or other technological tools to enhance the learning experience.

2. ***What is the recommended time frame for the preparation and implementation of the cycling class?***

Education is a broad field of academic study and through this, there has been research into the best ways to design and implement courses for university students. Carnegie Mellon University in Pittsburgh has established online resources for those in university education to design courses through their Eberly Center for Teaching Excellence & Educational Innovation.
When designing a course, the Eberly Center recommends considering seven things:

- Timing and logistics
- Recognize who your students are
- Situational constraints
- Learning objectives
- Potential assessments
- Appropriate instructional strategies
- Course content and schedule

When specifically considering the time frame for preparation and implementation, it's best to think about the first consideration: **Timing and logistics**. Regarding these timing and logistics considerations, the Eberly Center suggests breaking down this focus into three tracks: long run, middle run, and short run.

*Long Run:*

- Consider the department's goals, specifically curricular goals
- Determine the course goals broadly
- Look at demographic and enrollment data
- Obtain materials needed for the course
- Consider if TAs are needed/available

*Middle Run:*

- Revisit the department goals and where they fit with the course objectives
- Articulate course learning objectives

- Determine class schedule with semester schedule
- Identify appropriate materials and formats (articles, videos, etc)
- Determine the nature of the assignments and how activities will be collected
- Consider potential guest and field trip opportunities
- Ensure the alignment of objectives, assessments, and instructional activities
- Create an activity calendar
- Draft a tentative syllabus
- Reserve materials, including computer labs if necessary
- Request a Course Management System
- Inquire about administrative support

*Short run:*

- Get your class roster and consider necessary change based on enrollment demographics
- Revise syllabus if necessary
- Check status of orders for books, other required materials, and reserves
- Create or update your Course Management System
- Meet with TAs, if the course has them
- Visit classroom

At the current point for the establishment of a cycling course, it is most sensible to consider the long run timeframe of considerations rather than middle and short run considerations. For starters, one of the things to consider is the University department in which the course is based. This would dictate the particular details of things like what are the curricular goals of the department. Each department has a different mission and curriculum associated with that. Understanding where this course will be held will determine this. It is worth noting that current University of Maryland policy regarding its Climate Action Plan suggests offering more courses relating to sustainability as General Education courses. The University of Maryland hopes to establish many of these gains by 2025, which may be one avenue pursuing the course's establishment through. It also needs to be considered what is the individual process for each department to have a course approved, including how it fits into the greater goal and mission of

the department. As the process which the course is being planned and developed, middle run and short run considerations can be looked over.

The specific frame of time in which a course would be established will depend on the department it's going to be housed within and how long it will take to align the course with the mission and curriculum of the department it will be housed within. Once these are determined, the time frame will become clearer.

3. ***Where could a new cycling course fit within the structure of the University?***

*Department of Kinesiology/School of Public Health*

Currently, the Kinesiology major within the University's School of Public Health administers a variety of "Physical Activity Courses." While many of these courses are restricted to those in the Kinesiology major, Professor Jane Clark, Chair of the Department of Kinesiology, points out that these "course offerings are available to students across the campus."

The Department's Fall 2018 handbook states that these "physical activities provide the opportunity to directly experience and apply many of the theories and knowledge addressed in Kinesiology courses." Kinesiology students engage in physical activities as a part of their curriculum, with the Department requiring its students to complete 4 different Physical Activity courses. Based on the list of 30 Physical Activity courses listed in the Department's Fall 2018 handbook varying between beginner, intermediate, and advanced skill levels, the Department still lacks a cycling course at any skill level.

Because of the connection we find in our research regarding how cycling broadly correlates to improved public health, the course also holds the potential to reside within the larger School of Public Health rather than being restricted to the Department of Kinesiology. Upon interviewing Brooke Smith from the Academy of Innovation and Entrepreneurship on campus, she identified the Department of Kinesiology and its physical activity offerings as the most promising home for a Cycling 101 course.

*School of Public Policy*

A Cycling 101 course could also fit into the School of Public Policy should it focus more on the broader public impacts that could result from the promotion of bicycling. As we cover later on, relevant public policy areas range from sustainability to public health.

The School of Public Policy prides itself on educating its students to be action-oriented thinkers who utilize their creativity to formulate these solutions. Cycling 101 is a prime example of a creative solution to various public policy issues, allowing students to actively analyze how promoting bicycling utilization can improve public health as well as help the environment by limiting motor vehicle use.

4. ***What are the specific administrative procedures that need to be followed for proposing and implementing a new cycling class at the University of Maryland?***

To propose a new course for academic credit at the University of Maryland, you first must choose which discipline the course will fall under. The "I-series" classes are an appropriate category for an academic cycling 101 course, as "I-series" classes are defined as: "I-Series courses are unique to UMD and form the signature of the General Education program. Offered by all undergraduate programs, these courses engage students in consideration of topics of current and enduring significance - the so-called Big Questions of our time."

Since cycling 101 will cover a range of topics, we believe the I-series / a general-education placement would be the correct discipline. I-series courses can be blended and taught by several schools at the University, capitalizing on each school's strengths and weaknesses.

For a course to contribute to the I-series program, it must address at least 4 of the 6 learning outcomes:

- Identify the major questions and issues in their I-series course topic
- Describe the sources the experts on the topic would use to explore these issues and questions

- Demonstrate an understanding of basic terms, concepts, and approaches that experts employ in dealing with these issues
- Demonstrate an understanding of the political, social, economic, and ethical dimensions involved in the course
- Communicate major ideas and issues raised by the course through effective written and/or oral presentations
- Articulate how this course has invited them to think in new ways about their lives, their place in the University and other communities, and/or issues central to their major disciplines or other fields of interest

We believe a cycling 101 course could easily address at least 4 of these outcomes, if not all 6.

In addition to addressing the learning outcomes, certain proposal questions will need to be answered, including:

- I-Series courses should be framed around a "Big Question." What is the "Big Question" that drives your course?
- Please list the instructor(s) who will be teaching this course
- Please write 2 or 3 sentences that can be used to advertise your I-Series course to students
- Describe the approaches to be used in this course to engage students
- What role will teaching assistants (graduate or undergraduate) play in the active engagement of students?

A key step in proposing a course is the development of the course syllabus. Syllabus development can be broad and must encompass multiple aspects of a topic. For our cycling 101 course, our syllabus will likely include units on cycling mechanics and safety, bicycle parts, cycling in and around UMD, environmental and sustainability policy, physical health and mental health benefits of cycling, and more. To help develop the syllabus, it is recommended to work with the program curriculum development team which is reached at: tltc@umd.edu.

Once you have answered the proposal questions, ensured that your I-series course addresses at least 4 of the 6 learning outcomes, and have a working syllabus, your course design will be

reviewed by the I-Series Faculty Board and either approved, or sent back for more workshopping.

Common reasons proposals are sent back include:

- Issues with the syllabus including a missing syllabus or lack of course schedule.
- The student activities described in the application are not given significant mention in the syllabus and/or weight in the course grade.
- The delivery format is too traditional. The I-Series Faculty Board expects an approach that includes active student-faculty and student-student engagement (group projects, teamwork, field trips, etc.).

Once you have your materials ready, the proposal is created in the CIM curriculum management system.

*Review Process:*

In CIM, the proposal will go through three stages of review:

- Department level
- College level
- General Education Faculty Board level

It can take some time for your proposal to be reviewed at the departmental level, so it's suggested you contact the department and let them know you've submitted a proposal. "Contact your department and college representatives to alert them to your course submission and to find out the time required for department and college level review."

Once your proposal gets approved at the departmental and collegiate level, it will be referred to the General Education Faculty Board Level:

> "You are encouraged to submit a General Education proposal early in the academic semester one year prior to when the course will be offered. General Education proposals received by Faculty Boards by October 1st in the fall and March 1st in the spring are guaranteed to be reviewed by the board in that academic semester."

Check the CIM system for the status of your proposal.

The faculty board may provide comments regarding the proposal review that will require your attention. Faculty board chairs are available to discuss comments and provide assistance, and you are encouraged to address any feedback and resubmit in a timely fashion such that the approval process may move forward quickly.

After Faculty board approval, the course will also need to go through the VPAC course approval process since it is a brand new course at the University. While the CIM review can be lengthy at times, the VPAC course approval process should take 6-8 weeks at the most and often less.

The VPAC course approval process includes:

- Review and approval by the Department Committee for Programs, Curricula and Courses (Department PCC)
- Review and approval by Department Chair
- Review and approval by the College/School Committee for Programs, Curricula and Courses (College PCC)
- Review and approval by the Dean (or the dean's delegate, who in most cases is also the college's VPAC Representative.)
- Initial review by the Provost's Representative for compliance with campus policies.
- Review by VPAC representatives, who identify any areas of concern.
- Final review and approval by the Provost's Representative. The proposal is then forwarded to the Office of the Registrar for implementation.

The specific departmental representatives you will need to contact can be found on official UMD websites.

5. ***What are the essential modules to include in the cycling class?***

*General Modules:*

- Bicycle Equipment
- Bicycle Safety

- Local Trails and Bicycling In PG County
- Bicycling in the Greater Washington region
- Health benefits of cycling - broken down into physical and mental health units
- Sustainability and Bicycling - broken down into multiple units

**Research Findings: Policies**

*Sustainability:*

Bicycling as a means of transportation is proven to be far more environmentally friendly than using automobiles as a means of transportation. According to the EPA, each typical passenger vehicle emits about 4.6 metric tons of carbon dioxide per year. Bicycling avoids emitting fossil fuels and can efficiently move people over shorter distances, such as areas of where people live near and around campus. Promoting methods of transportation which are environmentally friendly and emit less fossil fuels are both within the goals and plans of the University of Maryland as well as our client. University of Maryland hopes to reduce its commuting-based carbon emissions by 53,000 MTCO2e while Prince George's County hopes to cut into on-road vehicle emissions, which make up over 4 million MTCO2e of emissions. Encouraging more users to select bicycling over driving in a personal vehicle will assist both the University and our client with these climate-oriented goals.

Incorporating sustainability and environmental policy into a cycling course at the University of Maryland is a pivotal step towards fostering a holistic understanding of cycling's broader impact. Beyond the physical and mental health benefits of bicycling, integrating concepts related to environmental policy is critical.

This course will delve into the environmental benefits of cycling as a low impact mode of transportation, exploring topics such as the importance of reducing carbon emissions, energy and efficiency, and the positive and personal effects on well being. Furthermore, discussions on environmental policy related to infrastructure, urban planning and local initiatives can provide students with insights how their passion for biking intersects with broader social and

environmental goals. Encouraging eco-friendly practices such as bike maintenance, can instill a sense of environmental stewardship among students not just creating cyclings, but advocates for sustainable living.

*Physical Health:*

Cycling has a laundry list of positive health benefits associated with the practice. Prevalent examples we'll touch on in the cycling 101 class include an increase in cardiovascular health, a decrease in major diseases, significant weight reduction, an increase in balance, improvement in joint health, reduction in cholesterol, and more.

Bicycling regularly can have a dramatic improvement on one's cardiovascular health. According to the Scandinavian Journal of Medicine & Science in Sports, studies "showed a clear positive relationship between cycling and cardiorespiratory fitness in youths," and "demonstrated a strong inverse relationship between commuter cycling and all-cause mortality, cancer mortality, and cancer morbidity among middle-aged to elderly subjects." Not only does cycling regularly improve cardiovascular health, but it can fight against life-threatening diseases such as cancer.

The Harvard School of Public Health corroborates these findings in a study of their own. Harvard researchers examined more than 18,000 patients, and "after 16 years, the findings showed significantly less weight gain in those who walked briskly or cycled." In addition to that, they found "those who did not cycle at the start of the study but increased by as little as 5 minutes a day gained less weight than those who never cycled."

Bicycling can also greatly help one's posture, balance, and coordination. Balance tends to decline with inactivity and age, but biking requires you to stabilize your body to keep your bike upright. Studies by the Journal of Physical Therapy Science show biking can help improve your overall balance and coordination. The study demonstrated that "cycling exercise training is an effective intervention for increasing the balance and gait abilities," and that "bicycle exercise can help to prevent falls by improving the balance of elderly persons."

Doctors praise bicycling as an effective joint exercise, with former medical director of the Sports Medicine Clinic at the University of Minnesota, Dr. Joseph Garry stating "The continuous motion that's part of cycling is very helpful for arthritic joints, the more the joint moves through its full range of motion, the more synovial fluid is produced. This lubricates the joint so you move more easily the rest of the day."

*Mental Health:*

Substantial research supports the positive impact that general exercise can have on mental health. A multitude of studies have focused more specifically on cycling as a vehicle for improved mental health.

Even recently, a study from the Journal of Transport and Health helped support a positive correlation between physical activity and quality of life in adults. While it did not find every type of physical activity to positively impact quality of life to the same extent, the authors concluded that "walking and biking were associated with indicators of mental health and vitality."

Other research from the Journal of Physical Education and Sport went further in showing the cognitive and neurological impacts of biking on public school students. The researchers working in the Department of Health and Human Performance at the University of Tennessee, Chattanooga found "consistent evidence" that neurological activity was improved both during and after their subjects went on a bike ride. Specifically, they measured elevated indicators for focus, motivation, and relaxation. They also found that these indicators were "associated with improvements in working memory… [particularly for those] exhibiting signs of mental distraction."

To encourage the use of biking for transportation, the Cycling 101 course can pull from extensive research to further the correlation between biking and mental health by showing how transportation-specific cycling impacts mental health as well. For example, Ma et al. find in their research that engaging in regular cycling-based transportation "may help reduce levels of psychological distress and improve levels of life satisfaction." It is important to emphasize,

therefore, that these researchers see the positive mental health benefits of biking to most likely occur when doing it regularly for transportation purposes.

**Discussions and Recommendations:**

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In collaboration with the Prince Georges County Department of Planning for the purpose of this assignment, we worked together to find extensive research that aims to pioneer an Introduction to Cycling class at the University of Maryland. Our capstone's initiative not only seeks to teach the basics fundamentals of cycling, but strives to cultivate a profound understanding of critical policy issues, including sustainability, mental health and physical well-being.

Cycling has emerged as a popular and environmentally friendly mode of transportation, offering numerous benefits to individuals and communities. Recognizing the potential for positive impact, our project endeavors to bridge the gap between the cycling culture at UMD and providing policy awareness. By integrating practical riding lessons which accommodate individuals of varying skill levels, all whilst providing education on sustainability practices, mental health benefits, and physical fitness, we aim to empower students to become informed advocates for holistic well-being and responsible urban mobility.

By collaborating closely with Prince George's Department of Planning, specifically Mr. Michael Jackson, we were able to gauge an understanding of urban development and existing infrastructure in the area, but also use his expertise to guide us in the right direction for this assignment. Additionally, Mr. Jackson put us in contact with Professor Kimberly Driver, a Professor at Montgomery College who previously taught an Introduction to Cycling course. Meeting with Professor Kimberly Driver was extremely informative and productive. We went over her class syllabus, talked about future changes and recommendations for the future. These two individuals helped our project immensely which flourished into a passion project of empowering and educating students through cycling.

There was a lot of research to conduct for this project and the findings we compiled yielded interesting results. Firstly, we found that there are concrete steps to create a cycling 101 class for academic credit here at the University of Maryland. While the process may differ slightly depending on which school within the University you want the course to fall under, the

overarching process of creating a course is straightforward. The cycling 101 course would be an "I-series course" since it can be taught by several schools within the University (Umd.edu). Since cycling 101 will cover a range of topics, we believe the I-series/ a more general placement would be the correct discipline.

A major factor in whether the newly proposed course is accepted by the University is the syllabus. The development of the syllabus is one of the more difficult aspects of creating a new class and we recommend working with the program curriculum development team at the University. For our cycling 101 course, our syllabus will likely include units on cycling mechanics and safety, bicycle parts, cycling in and around UMD and Prince George's County, environmental and sustainability policy, physical health and mental health benefits of cycling, and more.

From our research, we determined that determining the syllabus is a consideration done as the process of the course being created is closer. The first consideration before establishing a syllabus are understanding the department's curricular goals, determining the course goals in line with the department goals, and ensuring that the course is tailored to meet the needs of the demographics of those taking the course (Eberly Center). Overtime, once it's determined how the course can meet the needs of the department and those learning objectives can meet the needs of the students taking the course, a syllabus can be fully realized.

Knowing that the course will likely be in the I-series, it's recommended that the cycling course consider that it must meet 4 of the 6 I-series learning objectives: 1) Identify the major questions and issues in their I-series course topic, 2) Describe the sources the experts on the topic would use to explore these issues and questions, 3) Demonstrate an understanding of basic terms, concepts, and approaches that experts employ in dealing with these issues, 4) Demonstrate an understanding of the political, social, economic, and ethical dimensions involved in the course, 5) Communicate major ideas and issues raised by the course through effective written and/or oral presentations, and 6) Articulate how this course has invited them to think in new ways about their lives, their place in the University and other communities, and/or issues central to their major disciplines or other fields of interest (General Education).

Once you have a working syllabus and are approved for an "I-series" placement, your proposal is entered in the CIM curriculum management system to undergo a review process known as the "VPAC Course Approval Process". The stages of the review process take varying amounts of time and we recommend communicating with department heads within the University to ensure the course is being reviewed in an efficient manner.

We also researched into the optimal setting within the University of Maryland for the course, analyzing where within the University's structure of Schools would be the best fit for a Cycling 101 course. While a variety of options presented themselves, a few stood out. Within the School of Public Health, the Kinesiology Department offers a wide variety of "Physical Activity Courses," which allow students to apply what they have learned about Kinesiology to a physically active setting, though these courses tend to restrict access to Kinesiology students only. The Kinesiology Department, though, still lacks a cycling course at any skill level according to the list of 30 activity courses in the Department's handbook. While the Kinesiology Department offers an already-structured setting for a Cycling 101 course to be conducted, the broader School of Public Health could also serve as an apt setting for the class. Since Cycling 101 would spend extensive time instructing students about the various health benefits that result from biking as a part of your local travel routine, the School of Public Health demonstrates direct correlation to the course's curriculum.

Another possibility for Cycling 101's location could be within the School of Public Policy. Based on our curriculum's inclusion of extensive literature supporting the positive correlation between physical activity (cycling in particular) and public policy areas such as sustainability and public health. With that being said, we still suggest following Ms. Smith's recommendation of implementing Cycling 101 within the Kinesiology department since it still seems possible to offer a course within the structure of a Physical Activity Course while also offering access to the class to students regardless of major.

While there is little academic literature available on the specific benefits that a Cycling 101 class could offer in a university setting, we were able to conduct research on the positive benefits

cycling has on college-aged students. In terms of physical health and cycling, the literature pointed us to a myriad of positive health benefits. Studies conducted by various medical journals prove cycling has a “clear positive relationship between cycling and cardiorespiratory fitness in youths” and that cycling “demonstrated a strong inverse relationship between commuter cycling and all-cause mortality, cancer mortality, and cancer morbidity among middle-aged to elderly subjects,” (Scandinavian Journal of Medicine & Science in Sports).

The Harvard University School of Public Health corroborates these findings. In a study of their own, Harvard researchers examined more than 18,000 patients, and “After 16 years, the findings showed significantly less weight gain in those who walked briskly or cycled.” In addition to that, they found “those who did not cycle at the start of the study but increased by as little as 5 minutes a day gained less weight than those who never cycled” (Harvard School of Public Health).

Other positive aspects of cycling include benefits to your balance and posture, and an increase in coordination (Journal of Physical Therapy Science). We recommend the Cycling 101 course include units/modules on the physical health benefits of cycling. The physical health benefits unit of our cycling 101 course will cover weight loss, balance, cardiovascular fitness, and more.

Not only does cycling prove to be beneficial for physical health, but these benefits also positively impact mental health based on our findings. With mental health becoming an increasingly pressing issue at our University, students could significantly benefit from participating in a Cycling 101 course, especially if it leads to utilizing biking for their future transportation around campus and Greater College Park. The Journal of Transport and Health’s recent study helped show a positive correlation between rates of physical activity and quality of life in adults. While the study did not identify every type of physical activity as providing equal positive impacts on quality of life, the researchers did find strong associations between biking (as well as walking) and positive indicators of mental health and vitality.

Further research in the Journal of Physical Education and Sport explored the cognitive and neurological impacts of biking on public school students, finding “consistent evidence”

indicating improved neurological activity during as well as after their subjects engaged in a bike ride. Specifically, they measured elevated indicators for focus, motivation, and relaxation which were “associated with improvements in working memory… [particularly for those] exhibiting signs of mental distraction.” Ma et al.’s research also found that engaging in regular cycling-based transportation could “help reduce levels of psychological distress and improve levels of life satisfaction.” We recommend that these extensive findings supporting the positive association between biking and improved mental health be highlighted in the Cycling 101 course so that students learn how the incorporation of biking into their routine has hidden benefits for their long-term wellbeing on campus and beyond.

The findings from our extensive research on the Introduction to Cycling class significantly enhance the overall goals of our collaboration with Prince George's County Department of Planning. The Proposed Cycling 101 course at the University of Maryland serves as a bridge between the cycling culture on campus and essential policy awareness. By integrating practice riding lessons with a curriculum that encompasses sustainability practices, mental health benefits and physical fitness, we aim to empower students to become informed advocates for holistic well being and urban mobility.

The research indicates that we will establish the Cycling course to be an “I-series” course that covers policy issues related to cycling and various skills that involve cycling. The collaboration with Michael Jackson and Professor Kimberly Driver discussed the important aspects of the class and contributed to creating a comprehensive syllabus. The findings hold significant implications for both the University of Maryland and the Prince George's County Planning Department. For the university, the introduction of a Cycling 101 class offers tangible benefits to students' physical and mental well-being. The positive health outcomes associated with cycling, as supported by academic literature, make a compelling case for the incorporation of such a course into the university's curriculum. The potential positive impact on students' quality of life, physical fitness, and mental health underscores the importance of integrating cycling education into the academic experience.

Moreover, the proposed course aligns with the university's commitment to sustainability, offering an avenue for students to engage with environmentally friendly transportation practices. This also aligns with existing University of Maryland Climate Action Plan goals, which seek to encourage more sustainable behavior through its courses as part of President Pines's commitment to carbon neutrality by 2025 (Climate Action Plan). It's possible that more students who are informed on how to bicycle around campus will consider it a possible option for getting around as perception is one of the reasons students may choose to bicycle to campus or not (Park & Akar, 2019). The findings emphasize the ease of the course creation process and the importance of collaboration with relevant university committees, ensuring that the course is efficiently reviewed and approved.

For the Prince George's County Planning Department, the collaboration underscores the importance of fostering a cycling-friendly environment within the community. The research findings provide evidence of the positive effects of cycling on both physical and mental health, supporting the department's goals of promoting sustainable and healthy urban mobility. By connecting the university's cycling culture with broader policy issues, the collaboration contributes to the creation of a more integrated and informed community.

In conclusion, the findings from our research not only validate the feasibility of introducing a Cycling 101 class at the University of Maryland but also highlight the far-reaching positive impacts such a course can have on students, the university community, and the broader urban planning context in Prince George's County. The collaboration serves as a catalyst for promoting sustainable practices and holistic well-being, aligning with the shared goals of the university and the Department of Planning.

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