TOWSON UNIVERSITY

Mark R. Ginsberg, Ph.D.
President

Office of the President
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March 30, 2026

Elena Quiroz-Livanis
Acting Secretary of Higher Education
Maryland Higher Education Commission
217 E Redwood Street, Suite 2100
Baltimore, MD 21202

Dear Acting Secretary Quiroz-Livanis:

In accordance with the Code of Maryland Regulation (COMAR) 13B.02.03.06, Towson University seeks your review and approval to offer a **Bachelor of Science in Climate Change and Community Resilience**, effective fall 2026. The proposed program will be implemented using existing resources under Education Article § 11-206.1.

If you have any questions or require additional information, please contact Rhodri Evans, Assistant Provost for Assessment, Accreditation and Compliance, at rhodrievans@towson.edu or by phone at 410-704-3312.

Thank you in advance for your review.

Sincerely,

Mark R. Ginsberg, Ph.D.
President

MG/rjme

cc: Dr. Candace Caraco, Associate Vice Chancellor for Academic Affairs, USM
Dr. Melanie L. Perreault, Provost and Executive Vice President for Academic Affairs
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Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program

Institution Submitting Proposal	Towson University

Each action below requires a separate proposal and cover sheet.

- (●) New Academic Program
- ( ) New Area of Concentration
- ( ) New Degree Level Approval
- ( ) New Stand-Alone Certificate
- ( ) Off Campus Program
- ( ) Substantial Change to a Degree Program
- ( ) Substantial Change to an Area of Concentration
- ( ) Substantial Change to a Certificate Program
- ( ) Cooperative Degree Program
- ( ) Offer Program at Regional Higher Education Center

Payment Submitted: (●) Yes ( ) No | Payment Type: (●) R*STARS # JC164938 ( ) Check # | Payment Amount: $850 | Date Submitted: 4/1/26

Department Proposing Program	Geography and Environmental Planning
Degree Level and Degree Type	Bachelor of Science
Title of Proposed Program	Climate Change and Community Resilience
Total Number of Credits	120
Suggested Codes	HEGIS: 2206.03 CIP: 30.4401
Program Modality	(●) On-campus ( ) Distance Education (fully online) ( ) Both
Program Resources	(●) Using Existing Resources ( ) Requiring New Resources
Projected Implementation Date (must be 60 days from proposal submisison as per COMAR 13B.02.03.03)	(●) Fall ( ) Spring ( ) Summer Year: 2026
Provide Link to Most Recent Academic Catalog	URL: https://catalog.towson.edu/undergraduate/
Preferred Contact for this Proposal	Name: Rhodri Evans Title: Assistant Provost for Assessment, Accreditation & Compliance Phone: 410-704 3312 Email: rhodrievans@towson.edu
President/Chief Executive	Type Name: Mark R. Ginsberg, Ph.D. Signature: Mark R Ginsberg Date: 3/31/2026
	Date of Approval/Endorsement by Governing Board:

Revised 4/2025

College of Liberal Arts
Department of Geography & Environmental Planning
Proposal for Bachelor of Science in Climate Change & Community Resilience

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TOWSON UNIVERSITY

A. Centrality to Institutional Mission and Planning Priorities.

A.1 Program description and relation to TU mission.

The proposed Bachelor of Science (BS) in Climate Change and Community Resilience (CCCR) takes advantage of geography's interdisciplinary approach to address the socio-economic and physical impacts of climate change. The 45-47-credit major sits at the intersections of community justice and climate preparedness, combining the physical science of climate change with the socio-economic analysis of unequal vulnerabilities related to climate change related disaster or stress. The program focuses on the role of planning and community activism in preparing society for climate change.

Lower-division required foundational coursework (15 credits) introduces students to basic physical processes that shape the surface of the earth, the human process that shapes socio-economic and cultural landscape, the relationship between humans and nature and the configuration of nature in society, and a brief technical introduction to the power of geospatial technologies as a spatial analytical tool.

Upper-division requirements (18-19 credits) build on this foundation to develop more specialized knowledge of climatology, climate change, planning for climate change, community resilience, and more analytical skills for research and problem solving.

Four elective courses (12-13 credits) chosen from four categories further develop knowledge and skills in climate, physical environment, planning, and policy and politics.

The CCCR program furthers Towson University's mission of fostering "intellectual inquiry and critical thinking, preparing graduates who will serve as effective leaders for the public good." The interdisciplinary approach and the uncertain and variable character of climate change forces thinking "outside the box" since the impacts of climate change are unprecedented. Climate change and community resilience are pressing issues for today's leaders, as evidenced by the creation of new government offices and programs. The program offers students the vision, creativity, and adaptability to craft solutions that enrich the culture, society, economy, and environment of the state and region.

A.2 Alignment with TU's strategic goals and priorities.

The proposed program aligns with the strategic goals of Towson University to educate, innovate, engage, include, and sustain. The program is an "in-demand academic program" that emphasizes new interdisciplinary learning across the physical and human sciences. The program faculty in climate change and community resilience must innovate because the field is unprecedented and forward-looking by necessity. The program is inclusive in its emphasis on environmental justice that aims to overcome the inequalities in climate vulnerabilities created by socio-economic disparities. And of course, the program aligns with TU's goal to sustain environmental and human resources.

A.3 Adequate funding for first five years.
The proposed new BS degree will be implemented using the existing resources of the Department of Geography & Environmental Planning within the College of Liberal Arts (CLA). The program will require no new funding until the number of majors begins to exceed approximately 30. Resources and expenditures anticipated for the first five years are presented in Section L.

A.4 Institutional commitment.
The proposed bachelor's degree program is aligned with the university's new research- and innovation-oriented mission and strategic plan. The proposed program will require minimal financial commitment and no new funding allocations for administration or infrastructure (see Section L for further details). There are currently 18 faculty in the departments of Geography & Environmental Planning, Environmental Science, Political Science, and Anthropology who will contribute to this program as part of their existing instructional load (see Section I.1 and Appendix B for a detailed listing). See Section K for more details about physical facilities and infrastructure available to support the program.

TU's Office of Technology Services will provide support for general computing needs. More specialized technical support will come directly from the College of Liberal Arts, which has dedicated staff for computer technology needs, classroom support, and website development. This program will benefit from the computer labs and access to several software packages and utilities available to students through university, college, or departmental specialty licenses.

TU is committed to student success. Students in the program will receive academic advising from Department of Geography & Environmental Planning faculty who will assist them in designing degree completion plans, completing the degree requirements, choosing elective courses, and finding and applying for internship opportunities. The CCCR major requirements are designed to be completed in the standard four-year duration of an undergraduate degree. Required courses and a typical four-year plan of study are outlined in Appendix A and Appendix B.

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

B.1 Demonstrated demand and need.
Significant impacts of climate change are already clear today, and state leaders, businesses, and community activists are marshaling resources to respond. Governor Moore created the Maryland Office of Resilience and the Office of Sustainability in 2023 to better prepare the state for future climate vulnerabilities. The Baltimore Office of Sustainability created a Baltimore City Community Resiliency Hub that coordinates with non-profits to increase community preparedness in the most climate-vulnerable neighborhoods.[1] The American Planning Association dedicates a large proportion of its knowledge center to long

[1] https://www.baltimoresustainability.org/baltimore-resiliency-hub-program/

term community sustainability, green communities, disaster recovery, and hazards mitigation in the face of climate change.[2] All these initiatives are clear evidence of the critical and compelling need to prepare qualified professionals to help address the climate challenges facing the state and region.

***B.2 Consistency with the Maryland State Plan for Postsecondary Education*.**
The proposed program, with its focus on the new field of climate change and community resilience, helps maintain the state's commitment to high-quality post-secondary education in Maryland (Priority 5 within the Student Success goal) by keeping education relevant to address society's most urgent needs and challenges. The CCCR degree will help ensure Maryland's higher education programs remain on the cutting edge of academic and social development.

The proposed program also creates a platform for ongoing lifelong learning by fostering self-learning skills (Priority 7 within the Student Success goal). Climate change and community resilience is a new field that will undoubtedly evolve over time. Thus, students need to know how to adapt and learn new, yet to be developed skills to face the new and unknown challenges of the future. Self-directed learning is essential to much of the workforce today as rapid changes in technology and society dictate the need for adaptable employees.

The proposed program also addresses Priority 8 within the Innovation goal of the Maryland State Plan by promoting a culture of risk-taking. Students dedicating their careers to climate sustainability and community resilience are already risk-takers embarking on an unknown path as these fields are very new and untested.

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

***C.1 Employment opportunities*.**
Since it is a new field, the US Bureau of Labor Statistics and the State of Maryland have yet to track jobs in climate change and community resilience, though a search for climate change and community resilience positions reveals an active job market in the field. The Environmental and Energy Study Institute (EESI) reports strong growth in many climate related industries, including adaptation and resilience jobs. The EESI also notes that many traditional occupations are beginning to incorporate climate resilience: "While new jobs are being created in this sector, existing jobs not traditionally considered to be climate jobs have begun to incorporate adaptation and resilience components as climate change intensifies."[3]

[2] https://www.planning.org/resources/climatechange/
[3] Environmental and Energy Study Institute. "Fact Sheet| Climate Jobs 2024." https://www.eesi.org/papers/view/fact-sheet-climate-jobs-2024.

Locally, the Baltimore Office of Sustainability advertised for a position in February 2025 as a "Climate and Resilience Planner." And, as noted, Maryland's Governor created two new offices for sustainability and climate resilience.

Graduates of the program will likely fill related positions as urban planners, environmental planners, community service workers, social and environmental technicians listed in the Maryland Bureau of Labor Statistics. Projections for these positions show plenty of opportunity for graduates at the baccalaureate level.

C.2 Market demand.

Table A: Projected Job Openings 2023-2033 Maryland Bureau of Labor Statistics

https://labor.maryland.gov/lmi/iandoproj/maryland.shtml

Occupation	PercentChange	TotalOpenings	AnnualTotalOpenings	
Geographers	7.09%	267	26	Bachelor's degree
Environmental Engineers	10.70%	485	49	Bachelor's degree
Environmental Scientists and Specialists, Including Health	11.92%	2179	218	Bachelor's degree
Community and Social Service Occupations	13.54%	56777	5678	

C.3 Expected vacancies over the next five years.

As evidenced by Table A, Maryland's Bureau of Labor Statistics shows strong employment opportunities for positions related to climate change and community resilience. Most positions are expected to grow by at least 9%, some as much as by 13-14%. Annual openings for these positions over the next 10 years leave plenty of opportunity for graduates to find employment in their field. The proposed program will also prepare students for graduate study in climate related fields.

C.4 Projected supply of prospective graduates.

The proposed BS program is expected to draw students with backgrounds primarily in geography, environmental science/studies, and biology. Tables B (enrollments) and C (degrees/certificates awarded) show the potential pipeline of students who might be recruited into the program from community colleges.

Table B: Enrollment in Potential Feeder Programs

Institution	Program Name	2020	2021	2022	2023	2024
Montgomery College	Applied Geography	14	18	13	14	18
College of Southern Maryland	Environmental Studies	40	46	42	37	55
Chesapeake College	Environmental Science	13	13	23	18	32

Institution	Program Name	2020	2021	2022	2023	2024
Hagerstown Community College	Environmental Studies	16	9	14	19	23
Carroll Community College	Biology	47	60	43	45	50

Table C: Degrees/Certificates Awarded in Potential Feeder Programs

Institution	Program Name	2020	2021	2022	2023	2024
Montgomery College	Applied Geography	6	2	3	2	6
College of Southern Maryland	Environmental Studies	1	2	4	4	2
Chesapeake College	Environmental Science	4	1	4	5	9
Hagerstown Community College	Environmental Studies	8	2	5	8	2
Carroll Community College	Biology	3	8	8	5	5

MHEC Report - Trends in Degrees and Certificates by Program 2015-2024

D. Reasonableness of Program Duplication.

D.1 Program duplication.

While there are currently no other programs at the undergraduate level that combine urban planning, community resilience, and climate change, there are three programs offered at other Maryland universities that contain elements of the proposed program.

At the University of Maryland, College Park, the Environmental Politics and Policy concentration within the Environmental Science and Policy major is a flexible program that includes many choices among political science, economics, geography, and environmental policy. However, none of the course choices approach the proposed program's emphasis on urban planning and resilient communities. The College Park program also includes fewer courses on the physical science of climate change.

The University of Maryland in Baltimore County (UMBC) offers a "generalist" Bachelor of Arts (BA) in Geography and Environmental Studies that features similar introductory courses with the exception of TU's Introduction to Urban Planning course. The BA program at UMBC does not require specific upper-division courses, allowing students to pursue a more individualized course of study from a wide variety of physical and human geography courses; it is a geography degree designed with a "broad sweep" more akin to TU's Geography and Environmental Planning major. TU's proposed BS degree focuses on climate change and planning and requires students to take specific upper-division courses examining these two topics in combination with a narrower set of electives in four different specialized subject areas (climate, physical environment, planning, and politics and policy).

Additionally, UMBC offers optional themed "streams" available within the BA degree, comprising a mix of courses designed to develop focused expertise in a particular area. In comparison to TU's proposed BS degree, the Cities, Economies, & Development and Urban

Systems streams have a greater focus on urban geography and environmental justice, whereas other streams provide more in-depth study on conservation (Conservation and Environmental Management stream), public health (Environment, Society, & Health stream), or sustainability in a global context (Global Sustainability stream), which the TU program lacks. In contrast, the proposed CCCR major places a greater emphasis on workforce training in planning, and therefore requires students to take more dedicated planning courses (including Introduction to Urban Planning, Planning for Resilient Communities, and Planning for Climate Change).

Salisbury University's Environmental Studies program is focused on the wetland environment of the eastern shore and contains little of the urban and community climate change preparedness that the proposed program emphasizes.

D.2 Justification for the proposed program.

The proposed program is unique in its focus on the intersection of climate change, disaster preparedness and recovery, urban planning, and social justice encapsulated in the term community climate resilience. The program offers an introductory background in natural science underlying climate change combined with a mix of urban planning, green infrastructure, environmental justice, and disaster preparedness and recovery. This is an emerging field that state managers and community activists are increasingly calling for, yet there are few programs that focus on both social planning along with the physical science of climate change. TU's program will fill a lacuna between the almost exclusive focus on physical science in environmental science and studies programs and urban planning and environmental policy programs that focus only on social sciences. The CCCR program provides students with some background in the natural sciences of climatology and climate change while most of its focus is planning, disaster recovery, and environmental justice.

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

There are environmental programs at Morgan State University and the University of Maryland Eastern Shore (UMES), but none intersect with the proposed program. TU does not anticipate that the proposed program will have any effect on high-demand programs at Maryland's HBIs.

At Morgan State University, there is a program in Coastal Science and Policy that focuses largely on the natural sciences related to coastal environments with some economics. The program does not focus on climate change or community resilience directly. Morgan State University also offers programs in Civil Engineering and Sustainable Urban Environmental Engineering, but this focus on engineering distinguishes Morgan from TU, which does not offer any engineering programs.

At UMES, the Environmental Science degree focuses on natural sciences rather than the social policy issues that the proposed program addresses.

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

Given the specialized nature of the proposed program, TU does not anticipate that its implementation will impact the uniqueness and institutional identities and missions of Maryland's HBIs.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning.

G.1 Program development and faculty oversight.

The program was designed by five TU faculty involved in climate change, community resilience, and urban planning. While these five faculty members designed the program, the Department of Geography & Environmental Planning will administer it. Initially the department chair will oversee the program, making sure that sufficient classes are offered for students, promoting the new program to prospective students, and assuring that the program's outcomes are assessed. When the program grows, a designated program director will take over administration and oversight of the program. Faculty teaching in the program and their credentials are listed in I.1 below.

G.2 Educational objectives and learning outcomes.

To make program assessment clearer and more coherent, the learning outcomes for the program align directly with TU's broad institutional student learning outcomes (ISLOs). Within each broad education goal, specific program content is detailed, so while TU teaches critical analysis and reasoning, in the program students will develop that skill by interpreting environmental data related to climate change.

The four TU ISLOs the program will assess are critical analysis and reasoning, working in multifaceted work environments, effective communication, and local and global citizenship.

1. **Critical Analysis and Reasoning:** Graduates will demonstrate the ability to analyze and interpret environmental data related to climate change. (Assessed in GEOG 373 Climatology)
2. **Working in Multifaceted Work Environments:** Student will exhibit problem-solving skills by designing climate adaptation and mitigation strategies to address community resilience. (Assessed in GEOG 402 Resilient Communities)
3. **Effective Communication:** Students will effectively communicate climate change concepts and solution recommendations. (Assessed in 383 Natural Resources and Society)
4. **Local and Global Citizenship**: Graduates will demonstrate an understanding of the tools to advocate for more socially equal, just, and sustainable communities, both locally and around the world. (Assessed in GEOG 406 Planning for Climate Change)

G.3 Assessment and documentation of student learning outcomes.

Table D indicates the courses in which the program learning outcomes (PLOs) will be assessed.

Table D: Program SLO Assessment

	Program Learning Outcomes (PLOs)	Direct and Indirect Measures	
PLO 1	Critical Analysis and Reasoning	Measure 1a:	Final project in GEOG 373 Climatology
		Measure 1b:	Survey of students
PLO 2	Working in Multifaceted Work Environments	Measure 2a:	Project in GEOG 402 Planning for Resilient Communities
		Measure 2b:	Survey of students
PLO 3	Effective Communication	Measure 3a:	Writing assignment in GEOG 383 Natural Resources and Society
		Measure 3b:	Survey of Students
PLO 4	Local and Global Citizenship	Measure 4a:	Research project in GEOG 406 Planning for Urban Climate Change
		Measure 4b:	Survey of Students

Each outcome will be assessed using an assignment in a specific course. Each time the course is offered, the work of students in the program will be placed in an assessment folder for that year. The students' work will be assessed based on the expected achievement level of 80% of students in the program. Data on student achievement will be reported each year using TU's institutional assessment data collection tool.

G.4 Program requirements.

The BS in Climate Change and Community Resilience includes required courses geography with a choice of elective courses from environmental science, political science, and anthropology. Students begin by taking five lower-division foundational courses in geography, then take six upper-division courses that form the core of the program. Finally, students choose four elective courses, one from each of the following subject areas: climate, physical environment, planning, and policy and politics. Table E summarizes the program requirements. (See Appendices A and B for the course descriptions for the required courses in the major and a sample four-year program completion plan.)

Table E: Program Curriculum

Course Number	Course Title	Credit Weighting
Foundation lower-division required courses in Geography		
GEOG 101*	Physical Geography	3
GEOG 109*	Introduction to Human Geography	3
GEOG 201*	Environment and Society	3
GEOG 221	Introduction to Geospatial Technology	3
GEOG 251*	Introduction to Urban Planning	3
	Total lower division GEOG required	**15**
Upper-division required courses in Geography		
GEOG 373	Climatology	3
GEOG 375 or	Quantitative Methods in Geography	3-4
GEOG 376 or	Qualitative Methods in Geography	
GEOG 322	Intro to Geographic Information Science (4)	
GEOG 383*	Natural Resources and Society: A Geographic Perspective	3
GEOG 402	Planning for Resilient Communities	3
GEOG 406	Planning for Urban Climate Change	3
GEOG 419	Climate Change: Science to Policy	3
	Total upper division Geography	**18-19**
Electives – Climate (select one)		
GEOG 377	Meteorology	**3**
GEOG 409	Applied Climatology	
GEOG 410	Environmental Geography	
GEOG 411	Studies in Natural Hazards	
Electives – Physical Environment (select one)		
GEOG 315	Geomorphology (4)	**3-4**
GEOG 317	Energy Resources	
GEOG 319	Soils and Vegetation	
GEOG 467	Environmental Hydrology	
GEOG 468	Fluvial Geomorphology	
Electives – Planning (select one)		
GEOG 391	Urban Systems	**3**
GEOG 403	Urban Housing Justice	
GEOG 404	Securitizing the City	
GEOG 481	Environmental Impact Analysis	
Electives – Policy and Politics (select one)		
ANTH 343	Resource Wars of the 21st Century	**3**
ENVS 411	Water Policies of the United States	

Course Number	Course Title	Credit Weighting
ENVS 420	Environmental Policy and Sustainable Management	
ENVS 425	Science and Policy of the Chesapeake Bay Restoration	
POSC 440	Global Environmental Politics	
	Total Electives	**12-13**
	Total Program Requirements	**45-47**

**Satisfies TU Core Curriculum requirement*

G.5 General education requirements.

TU's Core Curriculum, comprising fourteen categories within four themes (43-46 credits in total), satisfies the general education requirements mandated by the State of Maryland (COMAR 13B.06.01.03) and educational effectiveness standards held by the university's accrediting body, the Middle States Commission on Higher Education. To fulfill Towson University's Core Curriculum requirements, students must complete one course from each of the following categories (1-14).

Table F: TU Core Curriculum Requirements

Core Category	Credits
Fundamentals	
(1) Towson Seminar (Must be completed with a minimum C grade; course not required for transfer students)	3
(2) English Composition (Must be completed with a minimum C grade)	3
(3) Mathematics	3-4
(4) Creativity & Creative Development*	3
Ways of Knowing	
(5) Arts and Humanities*	3
(6) Social & Behavioral Sciences**	3
(7) & (8) Biological & Physical Sciences**	7-8
Writing in a Chosen Field	
(9) Advanced Writing Seminar** (Must be completed with a minimum C grade)	3-4
Perspectives	
(10) Metropolitan Perspectives**	3
(11) The United States as a Nation	3
(12) Global Perspectives**	3
(13) Diversity & Difference	3
(14) Ethical Issues & Perspectives	3
Total Credits	**43-46**

*Courses fulfilling Core 4 and Core 5 requirements must be from different subjects.

**GEOG 201 (Core 6), GEOG 101 (Core 8), GEOG 383 (Core 9), GEOG 251 (Core 10), and GEOG 109 (Core 12) fulfill both TU Core Curriculum and major requirements.

G.6 Specialized accreditation requirements.
Not applicable.

G.7 Outside contracts.
Not applicable.

G.8 Program assurances.
Curriculum, course, and degree requirements are updated and published annually in TU's academic catalog. The Department of Geography & Environmental Planning's website will post detailed information about degree requirements as well as information that will help students be successful in the program, such as advising resources, scholarship, and internship opportunities. TU's website offers extensive information about student support services, financial aid, and tuition costs each year.

All TU undergraduate students are required to meet with an academic advisor each semester. In the first meeting with an advisee after the student reaches 45 credits, the academic advisor develops a Four-Year Degree Completion Plan for the student, according to the academic requirements for the major and the expected schedule of course offerings. During subsequent advising meetings, the advisor reviews the student's progress towards their degree and helps the student plan courses for the next semester. The advisor may help the student modify the degree completion plan, if necessary. Advisors will also discuss students' plans for employment or postgraduate education. Academic advisors often provide information about internships and other opportunities to help students achieve those goals.

Students in the CCCR program will be expected to develop technical competencies throughout the duration of the program, but there are no specific requirements to enter the program other than admission to TU. Students will have access to the same academic support that all TU students have, such as tutoring, coaching, and workshops available through the TU Tutoring and Learning Center.

CCCR students will pay regular TU undergraduate tuition and fees and will have the same opportunities for scholarships and research experiences as students in the existing Geography undergraduate major, including the Drew Dedrick Scholarship, the Morgan GIS Endowment, the Fred and Joan Ward Scholarship, the Barnes Paper Award, and the Mitchell Scholarship.

G.9 Assurances of advertising, recruiting, and admissions materials.
TU regularly reviews its advertising, recruiting, and admissions materials to ensure that they clearly and accurately represent programs and services available, and that there is consistency across different modes of communication such as the TU website, the academic catalog, and other print and online promotional materials.

H. Adequacy of Articulation.

TU has signed an articulation agreement with the College of Southern Maryland to facilitate transfer into the program (see Appendix C).

I. Adequacy of Faculty Resources.

I.1 Quality of program faculty.

The program relies upon most of the full-time faculty of the Department of Geography. All completed doctoral programs, and all are engaged in on-going research in their fields.

Table G: Faculty Resources

Faculty Name	Status (Full-Time, Part-Time, Adjunct)	Highest Degree Earned/ Field of Study/Institution/ Degree Award Date	Title/Rank	Proposed Courses Faculty Will Teach (Course Number)
Dr. Michael Allen	Full-Time	Ph.D., Geography, Kent State University, 2014	Associate Professor	GEOG 101 GEOG 373 GEOG 377 GEOG 409 GEOG 411 GEOG 419
Dr. Gorana Draguljic	Full-Time	Ph.D., Political Science, Temple University, 2016	Associate Professor	POSC 440
Dr. Michael Eduful	Full-Time	Ph.D., Geography, University of South Florida, 2018	Lecturer	GEOG 383
Dr. Nicole Fabricant	Full-Time	Ph.D., Socio-cultural Anthropology, Northwestern University, 2009	Professor	ANTH 343
Dr. Lester Facey	Part-Time	Ph.D., Environmental Science, SUNY College of Environmental Science and Forestry, 2006	Adjunct Faculty	ENVS 420
Dr. Natalia Fath	Full-Time	Ph.D., Geography, Moscow State University, 1993	Lecturer	GEOG 101 GEOG 410
Dr. Michael Haire	Part-Time	M.S., Biology, Towson University, 1979; M.B.A., Loyola College in Maryland, 1987	Adjunct Faculty	ENVS 411 ENVS 425
Dr. Kelsey Hanrahan	Full-Time	Ph.D., Geography, University of Kentucky, 2015	Associate Professor	GEOG 109 GEOG 376
Dr. E. Kaufman	Full-Time	Ph.D., Geography, University of Kentucky, 2021	Assistant Professor	GEOG 251 GEOG 403 GEOG 404
Dr. Sya Kedzior	Full-Time	Ph.D., Geography, University of Kentucky, 2011	Associate Professor	GEOG 201
Dr. Sayma Khajehei	Full-Time	Ph.D., Metropolitan Planning, Policy, and Design, University of Utah, 2023	Assistant Professor	GEOG 251 GEOG 402 GEOG 481

Faculty Name	Status (Full-Time, Part-Time, Adjunct)	Highest Degree Earned/ Field of Study/Institution/ Degree Award Date	Title/Rank	Proposed Courses Faculty Will Teach (Course Number)
Dr. Shou Lu	Full-Time	Ph.D., Parks, Recreation, and Tourism Planning, Clemson University, 2001	Professor	GEOG 101 GEOG 221 GEOG 251
Dr. Robert Neff	Full-Time	Ph.D., Geography, Pennsylvania State University, 2005	Lecturer	GEOG 109 GEOG 251 GEOG 391 GEOG 406
Dr. Martin Roberge	Full-Time	Ph.D., Geography, Arizona State University, 1999	Professor	GEOG 101 GEOG 315 GEOG 319 GEOG 410 GEOG 467 GEOG 468
Dr. Charles Schmitz	Full-Time	Ph.D., Geography, University of California, Berkeley, 1997	Professor	GEOG 109 GEOG 375
Dr. Jeremy Tasch	Full-Time	Ph.D., School of Geography, Clark University, 2006	Professor	GEOG 101 GEOG 317
Dr. Paporn Thebpanya	Full-Time	Ph.D., Geography, University of Georgia, 2003	Professor	GEOG 101 GEOG 322
Dr. Carter Wang	Full-Time	Ph.D., Geography, Arizona State University, 2018	Assistant Professor	GEOG 101 GEOG 221

I.2 Ongoing pedagogy training for faculty.

The Faculty Academic Center of Excellence at Towson (FACET) is the faculty development center for Towson University. FACET's mission is to support an inclusive and collaborative faculty community and foster a culture of excellence in scholarship and teaching. FACET supports all campus faculty in their scholarship and teaching through a combination of programs, workshops, resources, funding, and communities of practice such as: Student Engagement, Emerging Technologies, Open Educational Resources, and High Impact Educational Practices. In collaboration with the TU Office of Technology Services, FACET also recommends, reviews, and provides programs to support advancement of faculty skills with Blackboard, TU's learning management system. FACET provides one-on-one or small group, virtual or face-to-face meetings with an instructional design team, who also perform course reviews. Faculty may attend open meetings as well as request consultation from FACET staff.

In addition, faculty are mentored by peers. All faculty are required to undergo periodic peer review which allows fellow faculty to mentor fellow faculty at all levels to improve pedagogy and make adjustments to changing student and curricular needs.

J. Adequacy of Library Resources.

Resources available through TU's Cook Library are sufficient to meet the needs of students and faculty in the proposed program. The library houses an extensive collection of materials, including more than 500,000 print and electronic volumes. In addition to a dedicated subject librarian, team of research librarians, and subject-specific research guides, the library provides access to 19 physics and astronomy subject-specific databases, such as Nature Portfolio, Scopus, ScienceDirect, JoVE Science Education Unlimited, JSTOR, and SpringerLink. Cook Library also houses computer workstations with specialty software for data analysis, data visualization, and mapping.

In addition to Cook Library, faculty and students have access to materials through reciprocal agreements at nearby Baltimore institutions and across USM-affiliated institutions. Materials from other libraries across the country can be requested for loan through standard interlibrary loan (ILL) services. As part of this service, faculty and students have access to RAPID ILL, a service customary at high research activity institutions. The current turnaround time for article requests is typically less than 48 hours.

K. Adequacy of Physical Facilities, Infrastructure, and Instructional Equipment.

K.1 Assurance of physical facilities.

TU's existing physical facilities, infrastructure, and instructional equipment are sufficient to support the needs of the proposed program. The Department of Geography and Environmental Planning is housed in the College of Liberal Arts located in a facility completed in 2010 that includes nine computer labs with over 250 seats for students and an extensive array of software. Software needed for student work is included also in the large computer facility on the main floor of the Cook Library.

K.2 Assurance of distance education.

The proposed program is designed to be delivered in-person via traditional modes of face-to-face instruction. If distance learning resources are required, whether in an individual course or at a broader scale, TU is well positioned to provide adequate support. FACET offers training and certification programs for online and hybrid/blended instruction, Universal Design for Learning (UDL), and effective pedagogical approaches for enriching distance learning, including the Quality Matters Rubric. Students and faculty can enroll in training modules that provide instruction in university-sponsored distance learning technologies, including Blackboard, WebEx, Zoom, and Panopto. Technology support is available online, as well as via email, text, phone and on a walk-in basis at Student Computing Services and the Office of Technology Services.

L. Adequacy of Financial Resources.

The proposed CCCR program will be implemented using existing resources in the Department of Geography & Environmental Planning. All courses in the program are pre-existing. TU does not anticipate that additional faculty expenditures will be necessary for the first four years of the program. When the program's overall enrollment grows to

approximately 30 students, the program will need to hire one new full-time faculty member to teach the climate courses.

Table H: Resources

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	**$0**	**$0**	**$0**	**$0**	**$0**
2. Tuition/Fee Revenue[1]	**$58,640**	**$120,800**	**$223,956**	**$333,190**	**$396,000**
Number of Full-time Students	5	10	18	26	30
Annual Tuition Rate[2]	$11,728	$12,080	$12,442	$12,815	$13,200
Subtotal Tuition	$58,640	$120,800	$223,956	$333,190	$396,000
Annual Fees	$0	$0	$0	$0	$0
Subtotal Fees	$0	$0	$0	$0	$0
Total Full-time Revenue of New Students	$58,640	$120,800	$223,956	$333,190	$396,000
Number of Part-Time Students	0	0	0	0	0
Credit Hour Tuition Rate	$0	$0	$0	$0	$0
Annual Fees Per Credit Hour	$0	$0	$0	$0	$0
Annual Credit Hours Per Student	0	0	0	0	0
Subtotal Tuition	$0	$0	$0	$0	$0
Subtotal Fees	$0	$0	$0	$0	$0
Total Part-Time Revenue of New Students	$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)	**$58,640**	**$120,800**	**$223,956**	**$333,190**	**$396,000**

[1] *Student enrollments are calculated at 100% in-state. It is anticipated that all students will enroll on a full-time basis.*

[2] *Tuition and fees increase by 3% annually.*

Table I: Expenditures

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Total Faculty Expenses (b + c below)	**$0**	**$0**	**$0**	**$0**	**$99,750**
a. #FTE	0	0	0	0	1.0
b. Total Salary	$0	$0	$0	$0	$75,000
c. Total Benefits (x 33%)	$0	$0	$0	$0	$24,750
2. Total Administrative Staff Expenses (b + c below)	**$0**	**$0**	**$0**	**$0**	**$0**
a. #FTE	0	0	0	0	0
b. Total Salary	$0	$0	$0	$0	$0
c. Total Benefits	$0	$0	$0	$0	$0
3. Total Support Staff Expenses (adjunct) (b + c below)	**$0**	**$0**	**$0**	**$0**	**$13,500**
a. #FTE	0	0	0	0	0.2
b. Total Salary	$0	$0	$0	$0	$13,500
c. Total Benefits	$0	$0	$0	$0	$0
4. Equipment	**$0**	**$0**	**$0**	**$0**	**$0**
5. Library	**$0**	**$0**	**$0**	**$0**	**$0**
6. New or Renovated Space	**$0**	**$0**	**$0**	**$0**	**$0**
7. Other Expenses	**$1,000**	**$1,000**	**$1,000**	**$1,000**	**$1,000**
TOTAL (Add 1-7)	**$1,000**	**$1,000**	**$1,000**	**$1,000**	**$113,350**

Faculty (#FTE, Salary, and Benefits)
Only when enrollment reaches 30 students does the program anticipate the need for additional faculty in the form of one full-time faculty member. Faculty salary was estimated at current assistant professor starting salary.

Administrative Staff (# FTE, Salary, and Benefits)
The Department of Geography & Environmental Planning has sufficient administrative staff to run the proposed program through its initial launch. No additional administrative staff will be needed.

Support Staff (# FTE, Salary, and Benefits)
Only when enrollment reaches 30 students does the program anticipate the need for additional adjunct faculty to teach a few key courses. Adjunct faculty were calculated at current rates. No additional support staff will be needed in the initial phases of the program.

Equipment
The CCCR program will use the Department of Geography & Environmental Planning's existing computer lab space in the College of Liberal Arts building for teaching. Students have access to most of the labs in the CLA building as well as in Cook Library.

Library
No additional library expenses are necessary.

New and/or Renovated Spaces
The program will use existing spaces.

Other Expenses
The new program will require some modest marketing resources to attract prospective, new, and transferring TU students into the program, as well as to advertise the new opportunity to current TU students. The types of marketing activities the program anticipates undertaking include website development, email and social media marketing, flyers, and giveaway items for TU Open House/TU4U events, and visits to Maryland's community colleges. TU has budgeted approximately $1,000 per year for these efforts.

M. Adequacy of Provisions for Evaluation of Program.
M.1 Evaluation of the program.
The proposed program will be built using existing courses. Nevertheless, future course development will follow the regular Towson University procedures for approval, first at the program and department level, through the CLA curriculum committees, and finally the University Curriculum Committee.

The course approval process evaluates new courses for appropriate rigor, effective assessment and grading, and adherence of the course syllabus to best practices. Evaluation at the program level ensures course content accuracy and program alignment, while the college and university level reviews facilitate the production of quality course proposals.

Existing courses are evaluated through regular review by program faculty and by student evaluations. Faculty regularly review courses to determine if the course meets overall program objectives. Additionally, instructors are observed by peers on a routine basis, with more frequent observations if faculty are new to a course or the university. If a course review indicates concerns or problems with a course, faculty develop strategies for addressing problems. Student course evaluation takes place at the end of every semester. Using a tool developed by TU faculty that allows quantitative and qualitative feedback, students give feedback on instructors (e.g., ability to communicate clearly; quality of student-instructor interaction; preparedness) and suggest improvements for a course.

Evaluation of faculty follows policies and procedures established by TU's policies for faculty annual merit review and for faculty reappointment, tenure, and promotion. These

evaluations occur at the department, college, and university level. The main areas of evaluation include teaching, scholarship, and service. Tools used as part of the annual evaluation process include review of the individual's portfolio that includes, but is not limited to, the following:

- Evidence of scholarship (e.g., articles in scholarly journals; presentations at scholarly meetings).
- Service work.
- A synopsis of teaching related activities (e.g., courses taught; new instructional procedures; interdisciplinary, diversity, international, and technology-related projects).
- Review of course syllabi.
- Peer teaching observation reports.
- Quantitative and qualitative student evaluation of instruction.

Section G.3 outlines the program assessment measures and shows their alignment with specific student learning outcomes. On an annual basis, specific learning outcomes are identified for assessment purposes. The program director, with the support of TU's Office of Assessment, will oversee the processes involved in the assessment of student learning outcomes, including collection and analysis of data, and creation of action plans, as necessary.

M.2 Evaluation of program effectiveness.

The assessment of this program will be guided by TU's Office of Assessment, following established TU policies and procedures, including review of the program's assessment plan to ensure that learning outcomes remain appropriate, and that students are meeting expectations.

The program will work with TU entities such as the Office of the Provost, Enrollment Services, and Student Services to review data on a regular basis and improve the program when needed. Effectiveness will be assessed by student retention, progress toward degree completion, career outcomes for graduates, student and faculty satisfaction, cost-effectiveness, and other key performance indicators.

Additionally, TU will conduct a comprehensive evaluation of the program every seven years as part of the USM-mandated Periodic Review of Academic Programs process. The purpose of the review is to promote continuous program improvement and ensure that the needs of students are being met. Each program will prepare a self-study, engage an external reviewer to evaluate the program and identify strengths and areas for improvement, and submit a final report to the USM Board of Regents for review and approval.

N. Consistency with the State's Minority Student Achievement Goals.
With approximately 60% of students identifying as non-white,[4] TU is nearly as diverse as the state of Maryland. It is one of only a few universities in the country to have no achievement gap, meaning that underrepresented student groups achieve the same or better academic success as the entire student population. TU strives to foster a learning community that reflects the population of our campus, region, and state, and recognizes that our success is dependent on cultivating diverse perspectives and approaches.

O. Relationship to Low Productivity Programs Identified by the Commission.
Not applicable

P. Adequacy of Distance Education Programs.
Not applicable, the program will be delivered in-person on the main TU campus.

[4] https://www.towson.edu/ir/documents/fall2025_factsheet_final.pdf

TOWSON UNIVERSITY

Appendix A – Course Descriptions

GEOG 101 PHYSICAL GEOGRAPHY (3)
Introductory spatial analysis of fundamental terrestrial natural phenomena, including their impact on humanity. Emphasis on Earth planetary motions, weather and climate, landforms, soils and vegetation. Core: Biological & Physical Sciences.

GEOG 109 INTRODUCTION TO HUMAN GEOGRAPHY (3)
Uses the analytical approach of social sciences in the study of institutions of human society to reveal spatial patterns in the responses of people to basic problems and needs. Core: Global Perspectives.

GEOG 201 ENVIRONMENT AND SOCIETY (3)
Exploration of human-environment interrelationships in the social sciences. Core: Social & Behavioral Sciences.

GEOG 221 INTRODUCTION TO GEOSPATIAL TECHNOLOGY (3)
Introduction to most effective ways to record and communicate spatial information. Emphasizes geotechniques including digital cartography, remote sensing, GIS and GPS. Includes georeference systems, cartographic representation, and basic skills needed to use and understand geospatial data.

GEOG 251 INTRODUCTION TO URBAN PLANNING (3)
The sequential origins of planning and urban design, a study of contemporary urban planning practice, and an analysis of the social, economic and political context of plan formulation and implementation. Core: Metropolitan Perspectives.

GEOG 315 GEOMORPHOLOGY (4)
Detailed analysis of the formation, surficial characteristics, and global distributions of the earth's landforms. Labs emphasize interpretation of landform assemblages through use of topographic maps and aerial photographs. Prerequisite: GEOG 101 or GEOL 121.

GEOG 317 ENERGY RESOURCES (3)
Spatial patterns and political economy of conventional and alternative forms of energy production and use. Climate change and geopolitics of global energy transition.

GEOG 319 SOILS AND VEGETATION (3)
A resource study of the world's soils and plant formations with emphasis placed upon their genesis and spatial differentiations. Prerequisite: GEOG 101.

GEOG 322 INTRO TO GEOGRAPHIC INFORMATION SCIENCE (4)
Study and use of selected computer hardware and software for the storage, retrieval, manipulation, analysis, and display of geographic data. Emphasis on practical applications of geographic information systems (GIS). Prerequisite: GEOG 221 or consent of instructor.

GEOG 373 CLIMATOLOGY (3)
Analysis of the character, causes, and global distribution of climatic types, chiefly employing the Koppen classification system.

GEOG 375 QUANTITATIVE METHODS IN GEOGRAPHY (3)
Focus on statistical problems associated with the analysis of geographic data. Emphasis on the unique spatial problems of point pattern analysis, area association, and regionalization. Prerequisite: MATH 100 or higher (except MATH 204).

GEOG 376 QUALITATIVE METHODS IN GEOGRAPHY (3)
Introduction to qualitative methods. Research design, ethical and procedural considerations, data collection methods, data analysis.

GEOG 377 METEOROLOGY (3)
Examines the composition and structure of the atmosphere, thermodynamic processes, forces and related small- and large-scale motions, air masses, fronts, tropical cyclones, solar and terrestrial radiation, general circulation and weather forecasting. Field work may be required.

GEOG 383 NATURAL RESOURCES AND SOCIETY: A GEOGRAPHIC PERSPECTIVE (3)
Social and environmental dimensions of natural resources, their management, and misuse from a geographic perspective. Requires grade of C or better to fulfill Core requirement. Prerequisite: ENGL 102 or ENGL 190 or equivalent. Core: Advanced Writing Seminar.

GEOG 391 URBAN SYSTEMS (3)
Survey of the structure, functions, forms and development of urban units. Emphasis upon the locational features of social, economic, and cultural phenomena. Field work.

GEOG 402 PLANNING FOR RESILIENT COMMUNITIES (3)
Examination of risks and vulnerabilities in hazard-prone areas, focusing on strategies for community resilience. Topics include resilience as a process and outcome, risk management, governance, and social-political factors in disaster planning. Prerequisite: GEOG 251 or consent of instructor.

GEOG 403 URBAN HOUSING JUSTICE (3)
Urban housing inequity in the U.S. Origins of racialized housing disparities. Informal exclusionary zoning. Alternative ways forward towards housing justice. This course has

been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 403.

GEOG 404 SECURITIZING THE CITY (3)
Exploration of urban security at multiple scales including international, national, metropolitan region, city block, the home, and the human body.

GEOG 406 PLANNING FOR URBAN CLIMATE CHANGE (3)
Examination of vulnerability, adaptation, and resilience to climate change in urban sites. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 406. Prerequisites: GEOG 251, GEOG 319, GEOG 419, MTRO 101, or consent of instructor.

GEOG 409 APPLIED CLIMATOLOGY (3)
The effects of world climatic patterns on the human and physical environment are analyzed. Special emphasis is devoted to the interactions between climate and the urban environment.

GEOG 410 ENVIRONMENTAL GEOGRAPHY (3)
Human impact on the natural environment. Exploration of roots and nature of contemporary environmental issues. Prerequisite: GEOG 101.

GEOG 411 STUDIES IN NATURAL HAZARDS (3)
The nature, frequency of occurrences, and distribution of environmental hazards and their impact on humans.

GEOG 419 CLIMATE CHANGE: SCIENCE TO POLICY (3)
A survey of past, current, and future climate change. Emphasis on Earth's radiation balance, causes of climate change, observed and predicted signals of climate change, and impacts and mitigation of climate change.

GEOG 467 ENVIRONMENTAL HYDROLOGY (3)
Exploration of the water cycle and its interaction with human society. Examination of precipitation, infiltration, runoff, and stream hydrology. Introduction to storm water mitigation, flood control, sanitary sewerage, and stream restoration. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 467. Prerequisites: GEOG 101 or GEOL 121 or consent of department.

GEOG 468 FLUVIAL GEOMORPHOLOGY (3)
Introduction to the study of river land forms and the processes that create them. Emphasis on human impacts to river systems and applied geomorphology. This course has been offered as a special topic; students who have earned credit for this course as a special topic

will not receive additional credit for GEOG 468. Prerequisites: GEOG 101 or GEOL 121 or consent of department.

GEOG 481 ENVIRONMENTAL IMPACT ANALYSIS (3)
The collection, collation, analysis, and incorporation of physical, social, biological, and economic information for the reviewing and the preparing of environmental impact statement (EIS) reports. Prerequisite: 6 units of geography or consent of instructor.

ANTH 343 RESOURCE WARS OF THE 21ST CENTURY (3)
Examination of conflicts and inequities that result from resource extraction in a number of locales globally and domestically, and the social movements that arise in response. Prerequisite: ANTH 207 or ANTH 212.

ENVS 411 WATER POLICIES OF THE UNITED STATES (3)
History and application of the Clean Water Act, including ongoing actions and case studies with focus on Maryland issues. Prerequisite: POSC 103 or POSC 207.

ENVS 420 ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT (3)
Analysis of the scientific approach to solve environmental problems within the socioeconomic concerns involved in formulating and administering environmental policy. Energy, management, policy, and sustainability are considered. Prerequisite: POSC 103 or POSC 207.

ENVS 425 SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION (3)
Provides students with a basic understanding of the key physical, chemical and biological processes taking place in the largest estuary in America. The class will explore how an understanding of these important ecosystem components has informed scientist, managers, legislators and other stakeholders about the causes of the degradation of the Bay and has provided insight into the formulation of a strategy for its protection and restoration. In addition to class lectures, projects and possibly in-field experiences, regional Chesapeake Bay experts from the academic, political and regulatory sectors will provide students with a real-world perspective on both the opportunities and obstacles in the effort to save the Bay. Prerequisite: POSC 103 or POSC 207.

POSC 440 GLOBAL ENVIRONMENTAL POLITICS (3)
Examination of global environmental politics and policy-making. Assessment of the policy dimensions of contemporary global environmental challenges including climate change, pollution, resource depletion, and biodiversity. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for POSC 440. Prerequisite: POSC 107 is recommended, or consent of instructor.

Appendix B – Climate Change & Community Resilience Four-Year Plan of Study

Year 1				
Fall			**Spring**	
GEOG 101 (Core 8)	3		Core 7	4
TSEM (Core 1)	3		GEOG 221	3
Elective	3		GEOG 109 (Core 12)	3
Core 3	3		English 102 (Core 2)	3
Core 4	3		GEOG 201 (Core 6)	3
Total	**15**		**Total**	**16**
Year 2				
Fall			**Spring**	
Elective	3		GEOG 322	4
GEOG 251 (Core 10)	3		Elective	3
GEOG 373	3		Core 11 (POSC 103 recommended)	3
Core 5	3		GEOG Climate Elective	3
Elective	3		Core 13	3
Total	**15**		**Total**	**16**
Year 3				
Fall			**Spring**	
GEOG 419	3		GEOG 406	3
GEOG Physical Environment Elective	4		Elective	3
Elective	3		Elective	3
Elective	3		GEOG 383 (Core 9)	3
Core 14	3		Elective	3
Total	**16**		**Total**	**15**
Year 4				
Fall			**Spring**	
GEOG 402	3		GEOG elective	3
Policy and Politics Elective	3		GEOG Planning Elective	3
Elective	3		Elective	3
Elective	3		Elective	3
Elective	3			
Total	**15**		**Total**	**12**
Credit Grand Total	**120**			