

Graduate Council Meeting
Wednesday, February 7, 2024
3:30 p.m., 327 Brooks Hall
(The Bylaws prohibit representation by proxy.)

AGENDA

I. Reading, Correction, and Approval of Minutes

(January 17, 2024)

II. Graduate Council Committee Reports

A. Appeals Committee

Committee Report (Don Nelson, Chair)

B. Program Committee

Committee Report (Kristen Navara, Chair)

- Action Item 1: From the College of Engineering School of Environmental, Civil, Agricultural, and Mechanical Engineering, a proposal to create a Master of Science in Mechanical Engineering.
- Action Item 2: From the College of Engineering School of Environmental, Civil, Agricultural, and Mechanical Engineering, a proposal to create a new Graduate Certificate in Natural Infrastructure.
- Action Item 3: From the Grady College of Journalism and Mass Communications, a proposal to create a Graduate Certificate Program in Crisis, Risk, and Disaster Communication.
- Action Item 4: From the Mary Frances Early College of Education Department of Communication Sciences and Special Education, a proposal to offer the face-to-face MED in Special Education (General Curriculum area of emphasis) online.
- Action Item 5: From the Mary Frances Early College of Education Department of Lifelong Education Administration, and Policy, a proposal to offer the Graduate Certificate in Education Law and Policy as an online program.
- Action Item 6: From the Mary Frances Early College of Education Department of Lifelong Education Administration, and Policy, proposals to create the following two official areas of emphasis under the online MED in Educational Administration and policy.
 - a. Academic Track
 - b. Tier I Leadership Certificate Track

C. Policy and Planning Committee

Committee Report (Yoo-Kyoung Seock, Chair)

- Action Item 1: Proposed change in policy on awarding doctoral degrees to University faculty. [carryover from January 17th GC meeting]
- Discussion Item: Discussion of doctoral time-to-degree after PPC vote (6-1, 1/30/24) proposing a limit of eight (8) years.

III. Information Items

A. Curriculum Report: The Graduate School has approved 21 new courses, 8 course revisions, and 0 deletions.

B. Next meeting: Wednesday, March 13, 3:30pm, 327 Brooks Hall.

IV. Adjourn



December 7, 2023

Dr. Ron Walcott, Dean
The University of Georgia Graduate School
Brooks Hall ~ 310 Herty Drive
Athens, GA 30602

Dean Walcott:

This letter serves as confirmation that the College of Engineering Curriculum Committee (CCC) approved a program proposal for a Master of Science in Mechanical Engineering from the School of Environmental, Civil, Agricultural, and Mechanical Engineering (ECAM) on November 7, 2023. As shown below, this proposal has now been approved by Dean of Engineering Dr. Donald Leo; ECAM Chair Dr. Bjorn Birgisson; and College of Engineering Assistant Dean of Academic and Faculty Affairs Dr. Mable Fok. We are now forwarding this proposal to the Graduate School for your review and approval.

Please let me know if I can help further with this process.

Thank you
**John
Brocato**

Digitally signed by John Brocato
DN: CN=John Brocato, O=University of Georgia,
OU=School of Chemical, Materials, and Biomedical
Engineering, E=john.brocato@uga.edu, C=US
Reason: I am the author of this document
Location:
Date: 2023.12.06 10:47:22-06'00'
Foxit PDF Editor Version: 12.0.2

John Brocato
Chair
College of Engineering Curriculum Committee
University of Georgia

APPROVED:

Dr. Donald Leo, Dean
College of Engineering

Bjorn Birgisson

Dr. Bjorn Birgisson, Chair
School of Environmental, Civil,
Agricultural, and Mechanical Engineering

Dr. Mable Fok
Assistant Dean of Academic and Faculty Affairs
College of Engineering



UNIVERSITY SYSTEM OF GEORGIA

USG Academic Degree Program Application

Released

Updated Version: Fall 2023

Point of Contacts

Dr. Dana Nichols
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Version Control

<i>Date</i>	<i>Changes</i>	<i>USG Approved date</i>	<i>Website update date</i>

NOTE:

Italicization indicates a question or field on the in-take form

^= indicates accreditation related content

USG Routing Only

- Program was part of the Annual Academic Forecast*
- This proposal requires USG integrated review*
- This proposal can be expedited (Nexus, established concentration with strong enrollment)*

USG ACADEMIC PROGRAM APPLICATION

A. OVERVIEW

To be completed as part of SharePoint Submission

1. *Request ID: (SharePoint Generated unique ID)*
2. *Institution Name: University of Georgia*
3. *USG Sector: Research University*
4. *School/Division/College: College of Engineering*
5. *Academic Department: School of Environmental, Civil, Agricultural and Mechanical Engineering*
6. *Proposed Program Name: Master of Science with a major in Mechanical Engineering*
7. *Major: Mechanical Engineering*
8. *CIP Code (6 digit): 14.1901*
9. *Degree Level: Master of Science*
10. *Anticipated Implementation Semester and Year: Fall 2024*
11. *Was this program listed in the most recent Academic Forecast?*
 Yes
 No (If no, explain why below)

12. Program Description (Provide a description of the program to be used in the Board of Regents meeting packet):

Mechanical Engineering, renowned for its multidisciplinary nature, plays a pivotal role in the development of diverse products and processes across varying dimensions. As societal and technological complexities continue to grow, advanced degrees in Mechanical Engineering have gained prominence. In light of this, the University of Georgia (UGA) aims to present an innovative and interdisciplinary MS program in Mechanical Engineering that addresses emerging challenges while encompassing an array of fields, including social sciences, behavioral sciences, computer science, and artificial intelligence. This article outlines the motivation behind establishing this program, the potential areas of specialization, and its alignment with the strategic goals of the State of Georgia and the United States.

Mechanical Engineering has long been celebrated as a multifaceted and versatile engineering discipline, embracing a wide spectrum of engineered systems varying in size and complexity. The allure of its interdisciplinary nature attracts students aspiring to join diverse engineering industries. Throughout the lifecycle of complex systems, from design and analysis to deployment, maintenance, and eventual retirement, the prowess of mechanical engineers remains indispensable. This article explores the rationale behind launching an advanced MS program in Mechanical Engineering at UGA, which aims to equip graduates with the expertise to tackle contemporary engineering challenges while encompassing an interdisciplinary approach.

As the intricacy of engineered systems continues to evolve, so does the appeal of advanced degrees in Mechanical Engineering. A master in Mechanical Engineering offers students the opportunity to delve deep into the intricacies of all engineered systems. With a focus on automation, robotics, thermal and fluid systems, energy systems, mechanics, design and manufacturing, and nanoengineering, the program aims to hone students' skills for careers spanning industry, academia, and government. Graduates will be equipped to confront the demands of an interconnected society reliant on cutting-edge technologies and inventions.

In recognition of the increasing interdependence of various disciplines, the proposed MS program in Mechanical Engineering at UGA intends to transcend traditional boundaries and embrace an interdisciplinary outlook. The curriculum will encompass recent advances and emerging research in mechanical engineering while drawing insights from social sciences, behavioral sciences, computer science, and artificial intelligence. By blending knowledge across these domains, graduates will be better prepared to address the complex engineering challenges of tomorrow.

The significance of mechanical engineering talent is underscored by the projections of the U.S. Bureau of Labor Statistics, which forecast a substantial 7% growth in the field over the next decade. As the nation and the State of Georgia emphasize key areas such as manufacturing, electric mobility, and infrastructure, an advanced MS program in Mechanical Engineering aligns seamlessly with these strategic goals. UGA, with its exceptional capabilities, stands poised to address the needs of the state and nation through this proposed program.

Mechanical Engineering continues to serve as the bedrock of various industries, offering solutions to multifaceted challenges across diverse dimensions. As the complexities of engineered systems intensify, a MS in Mechanical Engineering has gained significance, with a focus on specialization and an interdisciplinary outlook. The proposed MS program at UGA strives to equip graduates with the necessary skills and knowledge to address tomorrow's engineering challenges effectively, catering to the demands of an interconnected and technology-driven society.

13. Accreditation: Describe disciplinary accreditation requirements associated with the program (if applicable, otherwise indicate not applicable).

Not applicable.

14. Specify **SACSCOC** or other accreditation organization requirements[^].

Mark all that apply.

- Substantive change requiring notification only ¹
- Substantive change requiring approval prior to implementation ²
- Level Change ³
- None

B. STRATEGIC PLAN

15. How does the program align with the System Wide/Strategic Plan Context (within mission fit):

The novel MS program in Mechanical Engineering at the University of Georgia (UGA) closely aligns with the overarching strategic vision outlined in the University System of Georgia (USG) Strategy Plan. This program embodies the core principles set forth by the USG, positioning itself as a beacon of educational and innovative excellence.

Affordability, Accessibility, and Quality: The program underscores UGA's commitment to providing an accessible, high-quality education. By offering an MS in Mechanical Engineering, UGA extends its educational reach to aspiring engineers, enhancing their career prospects and academic growth. This affordability and accessibility are achieved without compromising on the caliber of education, equipping students with cutting-edge knowledge and skills to excel in the dynamic realm of mechanical engineering.

Lifelong Student Success: The MS program is designed to foster lifelong success among its students. By furnishing them with a comprehensive skill set encompassing mechanical systems, thermal systems, manufacturing, and design, the program prepares graduates for a lifetime of impactful contributions. Students are not only equipped with technical expertise but also imbued with critical thinking, problem-solving abilities, and collaborative skills that ensure their success throughout their professional journey.

Creation, Dissemination, and Application of Knowledge: UGA's MS program is intrinsically aligned with the mission of creating, disseminating, and applying knowledge for the advancement of the state, nation, and world. Through innovative coursework, research endeavors, and interdisciplinary collaborations, students engage in the process of knowledge creation and application, contributing to the progression of mechanical engineering and addressing pressing societal challenges. The program empowers graduates

¹ See page 22 (Requiring Notification Only) of [SACSCOC Substantive Change Policy and Procedures document](#).

² See page 17 (Requiring Approval Prior to Implementation) of [SACSCOC Substantive Change Policy and Procedures document](#).

³ See page 3 (Level Change Application) of [SACSCOC Seeking Accreditation at a Higher or Lower Degree Level document](#) for level change requirements.

to be at the forefront of advancements in the field, driving innovation and addressing critical issues that extend beyond the academic sphere.

In essence, the MS program in Mechanical Engineering at UGA seamlessly embodies the fundamental tenets of the USG Strategy Plan. By providing an affordable, accessible, and high-quality education while fostering lifelong success among its students and contributing to the creation and application of knowledge, the program exemplifies UGA's dedication to serving the needs of the state and economy while shaping engineers who will contribute to the advancement of the state, nation, and the world.

16. How does the program align with your institutional mission and function^?

If the program does not align, provide a compelling rationale for the institution to offer the program.

The prime directive of the UGA College of Engineering centers on nurturing engineers to realize their fullest potential and emboldening them to engage in collaborative research aimed at addressing the pressing challenges of our era. In pursuit of this mission, the proposed M.S. program seeks to foster visionary leaders in the mechanical engineering field that demands their specialized expertise. Additionally, bolstering the mechanical engineering program's growth, encompassing M.S. graduate students, will fortify research teams' pursuit of formidable research endeavors, thus concomitantly fulfilling the essential needs of the workforce and elevating the college's research trajectory.

At its core, the proposed M.S. program holds the potential to immediately impact three institutional missions. First and foremost, it is intrinsically aligned with the college's unwavering dedication to nurturing an exemplary teaching and learning environment, one that caters to a diverse and well-prepared student cohort, fosters elevated levels of student accomplishment, and provides requisite academic support services. Secondly, the program aligns with the college's steadfast commitment to fostering research, scholarship, and creative endeavors with an emphasis on structured programs to foster novel knowledge and theories, elevate instructional quality and efficacy, and augment faculty qualifications in ways pertinent to the institution. Lastly, the M.S. program seamlessly aligns with the college's commitment to public service, economic development, and technical assistance endeavors, all geared towards addressing the strategic needs of Georgia while delivering comprehensive and continuous educational opportunities tailored to the state's lifelong learning and professional education requirements.

By charting a trajectory of growth through an array of degree and course offerings, the program holds promise for expanding the learning environment within the realm of mechanical engineering, meeting the escalating demands of a thriving field. The envisaged community of research leaders within the program will undeniably foster a climate of enriched research, scholarship, and creative pursuits, propelling mechanical engineering to new heights. Given the evident need for mechanical engineering experts in the state, this program's establishment is poised to yield immediate impact, nurturing a skilled and competent workforce poised to meet the dynamic challenges of mechanical engineering head-on.

17. How does the program align with your institution's strategic plan and academic program portfolio?

Identify the number of existing and new courses to be included in the program.

The University of Georgia 2020 Strategic Plan states that "UGA is poised to address Georgia's most daunting issues: economic development and job creation, public health, and obesity."

In its present configuration, the College of Engineering at UGA has already established an M.S. program in Engineering, replete with diverse areas of emphasis, encompassing domains such as electrical and computer engineering, mechanical engineering, among others. These specialized areas of emphasis were originally formulated as part of the nascent graduate program within the College of Engineering upon its inception in 2012. The overarching vision was to eventually develop independent M.S. programs, once a critical mass of students had been successfully enrolled.

Drawing from recent trends in M.S. student enrollment, the faculty of the School of Environmental, Civil, Agricultural, and Mechanical Engineering now assert that the critical mass of students has been attained. A pronounced surge in student interest has been observed in pursuing M.S. degrees within the specialized emphasis areas typically aligned with a Mechanical Engineering M.S., thus lending further credence to the notion that there exists substantial demand for a standalone M.S. program in Mechanical Engineering. Presently, the M.S. program in Engineering with a focus on the mechanical emphasis offers a comprehensive suite of 42 graduate courses. This robust array of courses is deemed sufficient to serve as a solid foundation for the proposed new M.S. program in Mechanical Engineering, given the demonstrable interest and enrollment levels. This observed momentum, coupled with the wealth of specialized courses already in place, signals a propitious moment for the College of Engineering to actualize its long-term aspiration of introducing a dedicated M.S. program in Mechanical Engineering. As the college advances towards this new phase of academic enrichment, it can anticipate a promising landscape of opportunities to cultivate cutting-edge expertise and innovation in the realm of Mechanical Engineering.

C. NEED

18. To what extent does the program align with local, regional, and/or state talent demand or workforce strategies?

The burgeoning investment in cutting-edge technologies, encompassing artificial intelligence, automation, Internet of Things, and cyber-physical systems, coupled with the expansion of manufacturing plants, holds the promise of propelling unprecedented growth in the traditional realm of mechanical engineering. In Georgia, the demand for mechanical engineers is surging at a remarkable rate of 22.1%, outpacing the nationwide projection of 7%. The anticipated annual influx of 1,000 job openings related to mechanical engineering in the state from 2018 to 2028 underscores the criticality of nurturing an engineering workforce aligned with these thriving economic sectors.

For the projected economic growth to realize its full potential, a commensurate investment in degree programs becomes imperative, fostering a skilled engineering cohort capable of meeting the demands of these key industries. Positioned as a public land-grant and sea-grant research university in Georgia, the University of Georgia, fortified by its strengths in interdisciplinary programs, stands uniquely equipped to establish a rigorous and expansive mechanical engineering program, poised to cater to the emergent needs of society and establish its preeminence as a national leader in this vital discipline.

Over the past decade, the University of Georgia has demonstrated steady progress in cultivating its engineering offerings. Pioneering the establishment of a comprehensive College of Engineering in 2012 and subsequently a School of Environmental, Civil, Agricultural, and Mechanical Engineering in 2017, the university laid a formidable foundation for growth. Mechanical engineering programs were successfully initiated over a decade ago and have garnered commendable implementation. Evident from the five-year moving average of 700 students enrolled in the undergraduate program, the demand for mechanical engineering education has grown steadily. The school's proactive approach to faculty expansion, coupled with their vibrant engagement in cutting-edge mechanical engineering research and teaching, underscores their dedication to nurturing a vibrant engineering community.

Endowed with the requisite infrastructure, research resources, and educational experience, the School of Environmental, Civil, Agricultural, and Mechanical Engineering is primed to embark on an ambitious journey, advancing its mechanical engineering programs through furthering a stand-alone transformative M.S. program in Mechanical Engineering instead of M.S. in Engineering with emphasis in mechanical engineering. This critical development will undoubtedly contribute to meeting the dynamic societal needs and shaping a burgeoning engineering landscape in Georgia and beyond.

19. Was this proposal and the design of the curriculum informed by talking with alumni, employers, and community representatives or other evidence of demand (e.g. employment sector trends, clearly defined learner demand, complement to an existing program, meeting a persistent, new, or emerging demand for knowledge and innovation).

No

Yes (If yes, use the space below to explain how their input informed this proposal)

The College of Engineering's initial long-term objective was to establish independent MS programs once a substantial number of students were enrolled. The faculty within the School of Environmental, Civil, Agricultural, and Mechanical Engineering now believes that this critical enrollment threshold has been met, as evidenced by the recent growth in MS student numbers, rising from 40 students in 2020 to 58

students in 2023. Over the past few years, there has been a notable increase in the number of MS students successfully graduating from the college's Engineering (MS) program, particularly with a focus on mechanical engineering. Furthermore, informal feedback from current students suggests a preference for specialized majors over a generic engineering major title. The introduction of a new MS program in Mechanical Engineering is anticipated to attract a larger cohort of graduate students, subsequently enhancing research productivity in this interdisciplinary field. Additionally, it will position the school to effectively recruit and retain highly skilled faculty members dedicated to cultivating a robust and sustainable research program.

Many of UGA's peer institutions and departments have already adopted distinct majors within their disciplines, and those that have not are progressively moving away from generalized Engineering MS programs. UGA's alignment with these trends is crucial for maintaining competitiveness in graduate student recruitment.

Another noteworthy point pertains to the employability of MS graduates with a specialized degree like Mechanical Engineering. Generalized Engineering MS programs have limitations, as numerous employers, including academic institutions, tend to prefer candidates with degrees directly aligned with their respective fields. Expanding the number of UGA MS graduates entering academia is poised to significantly enhance the program's reputation and maturity.

Based on enrollment figures at other universities, the growing interest in engineering at the University of Georgia, and the institution's geographic location, faculty conservatively estimate that within five years, between 40 to 50 MS degrees will be conferred annually.

Graduate Students from MS in Mechanical Engineering

Institution	2019	2020
University of Texas - Austin	58	44
University of California - Berkeley	130	149
University of California - Los Angeles	75	60
University of Illinois at Urbana - Champaign	112	27
University of Michigan - Ann Arbor	142	150
University of Minnesota - Twin Cities	54	56
University of Wisconsin - Madison	64	57
Texas A&M University	88	92
University of Florida	142	102
North Carolina State University	10	83

Data from: <https://shinyapps.asee.org/apps/Profiles/>

20. Identify the partners you are working with to create a career pipeline with this program^{4.^}

Mark all that apply

High School CTAE

High School STEM

Career academies

- TCSG programs Employers Other (specify below)
 Other USG institutions Community partnerships
 Other universities Professional associations None

21. Are there any competing or complementary programs at your own institution?

No

Yes (If yes, provide additional information about the competing program(s) below).

This program's content is currently being offered as areas of emphasis under M.S. in Engineering. These areas of emphasis will be phased out after the approval of M.S. in Mechanical Engineering.

22. The program service area is used as the basis for labor market supply and demand analysis. What is the program's service area (local, regional, state, national)? If outside of the institution's traditional service area, provide a compelling rationale for the institution to offer the program. If the program's service area is a region within the state, include a map showing the counties in the defined region.

The program's service area is national. The program service area is used as the basis for labor market supply and demand analysis.

23. Do any other higher education institutions in close proximity offer a similar program?

No *Yes (If yes, provide a rationale for the institution to offer the program)*

Within the University System of Georgia, the Georgia Institute of Technology, Georgia Southern University, and Kennesaw State University are the institutions offering M.S. programs in Mechanical Engineering. While these institutions have a notable track record in producing high-quality mechanical engineering graduates, there exists an evident demand for a broader educational approach that equips mechanical engineers with interdisciplinary expertise from related fields such as data science. The pertinence of such a convergence-based approach is underscored by the National Science Foundation's recognition of its critical role in scientific discovery and the resolution of complex research conundrums. The proposed MS program, in response to this evolving academic landscape, endeavors to leverage UGA's distinct cross-disciplinary strengths, creating a platform for students to engage in collaborative research ventures with esteemed faculty from the College of Engineering and the Franklin College of Arts and Science. Notably, the faculty within the School of Environmental, Civil, Agricultural, and Mechanical Engineering actively partake in several unique interdisciplinary research centers at UGA, including but not limited to the Institute for Resilient Infrastructure Systems, the New Materials Institute, Georgia Informatics Institutes for Research and Education, Institute for Precision Agriculture, and the Engineering Education Transformations Institute.

Moreover, UGA's engineering faculty have been actively fostering partnerships with Georgia Tech on major, multi-institutional grants, exemplified by various manufacturing initiatives supported by federal

and state funding. These symbiotic collaborations leverage the complementary expertise present in both institutions, culminating in a comprehensive and convergent approach to tackling broad engineering challenges. The proposed establishment of a dedicated MS program in Mechanical Engineering at UGA is envisioned to augment these collective endeavors by recruiting and nurturing additional students, thus enhancing the impact of such collaborative pursuits. As the landscape of engineering education evolves, the proposed MS program at UGA serves as an instrumental endeavor, fostering a new generation of mechanical engineers endowed with convergent expertise, well-equipped to take on the multifaceted engineering challenges of the future. By capitalizing on the university's interdisciplinary strengths and synergistic partnerships, UGA is poised to usher in a new era of mechanical engineering education, further contributing to scientific progress and societal welfare.

24. Using IPEDS data, list the supply of graduates in the program and related programs in the service area.

Competitor Institutions Selected Based on Aspirational at the National Level

Similar or Related Degrees/Programs	CIP Code	Supply ¹ (Graduates/Completers)	Competitor Institutions ²
MS in Mechanical Engineering	14.1901	586	University of California-Berkeley (116), University of California-Los Angeles (74), University of Illinois Urbana-Champaign (61), University of Michigan-Ann Arbor (110), University of Minnesota-Twin Cities (60), The University of Texas at Austin (51), University of Wisconsin-Madison (63), The Pennsylvania State University (51)

Competitor Institutions Selected Based on Peer at the National Level

Similar or Related Degrees/Programs	CIP Code	Supply ¹ (Graduates/Completers)	Competitor Institutions ²
MS in Mechanical Engineering	14.1901	331	University of Arizona (16), University of California-Davis (31), University of Iowa (8), University of Maryland-College Park (18), Michigan State University (10), University of Missouri-Columbia (10), Stony Brook University (56), Ohio State University-Main Campus (67), Purdue University-Main Campus (115)

Competitor Institutions Selected Based on Peer at the South Regional Level

Similar or Related Degrees/Programs	CIP Code	Supply ¹ (Graduates/Completers)	Competitor Institutions ²
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MS in Mechanical Engineering	14.1901	304	University of Florida (138), University of Kentucky (12), North Carolina State University at Raleigh (95), Virginia Polytechnic Institute and State University (59)

¹ Supply = Number of program graduates last year within the study area

² Competitors = List other USG institutions that offer this program or a similar program in the area (see [Question 23](#))

25. Based on the program’s study area, what is the employment outlook for occupations related to the program. An Excel version of the CIP to SOC crosswalk is also available from [NCES](#). If data for the study area is not available, then use state- or national-level data. Only list the jobs that are highly aligned and likely to be those for which you are preparing students and not every possibility.

Possible resources:

- Click [here](#) for US and Georgia occupation projections
- Click [here](#) for 2026 Georgia Department of Labor data projections for the State or Georgia Workforce Board Regions in Qlik (link to GDOL Projections); data is also available through the [GDOL Labor Market Explore Website](#)
- For a custom Georgia geography – request a Jobs EQ report from [USG Academic Affairs office](#).
- Using data from *O*-Net*, identify the average salary for the related occupations identified in question.

Labor Market/Career Placement Outlook/Salary:

Occupation	O*Net ¹	Current Employment	% Growth	Average Salary (O-Net data)	Future Earnings Potential (O-Net data)
Architectural and engineering managers	https://www.onetonline.org/link/summary/11-9041.00	191,100	7.3	\$159,920	\$219,010
Mechanical engineers	https://www.onetonline.org/link/summary/17-1141.00	284,900	6.2	\$96,310	\$132,730

	mary/17-2141.00				
Mechanical drafters	https://www.onetonline.org/link/summary/17-3013.00	49,400	7.9	\$61,310	\$87,240
Mechanical Engineering Technologists and Technicians	https://www.onetonline.org/link/summary/17-3027.00	41,700	10.1	\$61,990	\$100,180
Engineering Teachers, Postsecondary	https://www.onetonline.org/link/summary/25-1032.00	45,800	10.2	\$103,550	\$178,740

¹National Center for O*NET Development. *O*NET OnLine*. Retrieved [include date] from <https://www.onetonline.org/>

26. Based on the data provided in questions **24** and **25**, discuss how this program will help address a need or gap in the labor market?

(Provide letters of support and explain the collaboration and how partners will share or contribute resources. Consider internal pipeline programs – “off-ramp programs,” Nursing to integrated health, or MOUs for pathways with other USG institutions (pipelines – keep them in state for grad school if possible).

Embracing a diverse array of principles from mechanical systems, thermal systems, manufacturing, and design, mechanical engineering stands as the most expansive among engineering disciplines. Renowned for their creativity and versatile skill set, mechanical engineers find themselves indispensable across virtually every industry. In the transportation sector, their contributions encompass a wide spectrum, ranging from the development of hybrid and electric cars to pioneering advancements in autonomous cars, airplanes, and underwater vehicles. Additionally, mechanical engineers are at the forefront of energy systems, striving to enhance power generation efficiency and devise alternative energy sources to mitigate environmental impact. The advent of artificial intelligence, automation, Internet of Things, and

cyber-physical systems heralds a new era of innovation, continuing to reshape the landscape of engineering disciplines.

In this context, the proposed MS program in Mechanical Engineering emerges as a timely and vital initiative, aligning itself with the evolving needs of the engineering field. By cultivating skilled professionals and experts, the program aims to address the pressing requirements of local and regional engineering industries, ensuring that they remain at the vanguard of this transformative era. Fortified by Georgia's highly educated workforce, distinguished research institutions, cutting-edge technological resources, and global connectivity facilitated by Atlanta's Hartsfield-Jackson International airport, the state has emerged as a magnet for substantial federal and private investments. A case in point is the construction of one of the largest battery manufacturing facilities in the U.S., spanning nearly 2.5 million square feet, by SK Innovations in Commerce, GA. Moreover, Rivian Automotive's intent to establish a vehicle manufacturing facility in East Atlanta further attests to the state's position as a hub of growth and technological innovation.

To sustain this trajectory of progress, the demand for mechanical engineering graduates, equipped with comprehensive training in engineering and cross-disciplinary domains, is witnessing a significant surge among local and regional employers. The proposed MS program in Mechanical Engineering, addressing these urgent needs, promises to play a pivotal role in nurturing a skilled workforce capable of driving engineering advancements in the local and regional landscape. As Georgia continues to embrace an era of transformational growth, this program stands as a crucial catalyst, fostering expertise, innovation, and progress within the field of mechanical engineering.

27. Using data from *O*-Net*, identify the average salary for the related occupations identified in question. Then list at least three technical skills and three Knowledge, Skills and Abilities (KSAs) associated with the related occupations. This information can be found using at [onetonline.org](https://www.onetonline.org). (Standard Occupation Code = SOC)

Occupation	SOC Code (6 digit)	Occupation specific technology skills & KSAs
Architectural and engineering managers	11-9041	https://www.onetonline.org/link/summary/11-9041.00 Analytical or scientific software; Computer aided design CAD software; Complex Problem Solving; Computers and Electronics; Judgment and Decision Making
Mechanical engineers	17-2141	https://www.onetonline.org/link/summary/17-2141.00 Computer aided manufacturing CAM software; Industrial control software; Critical Thinking; Technology Design; Quality Control Analysis; Production and Processing; Mechanical
Mechanical drafters	17-3013	https://www.onetonline.org/link/summary/17-3013.00 Computer aided design CAD software; Document management software; Judgment and Decision Making; Active Listening; Operations Analysis; Engineering and Technology; Production and Processing
Mechanical Engineering	17-3027	https://www.onetonline.org/link/summary/17-3027.00 Analytical or scientific software; Computer aided design CAD software; Complex Problem Solving; Mathematics;

Technologists and Technicians		Systems Analysis; Active Listening; Engineering and Technology; Computers and Electronics; Physics
Engineering Teachers, Postsecondary	25-1032	https://www.onetonline.org/link/summary/25-1032.00 Analytical or scientific software; Computer aided manufacturing CAM software; Information retrieval or search software; Instructing; Learning Strategies; Systems Analysis; Mathematics; Engineering and Technology; Education and Training

Notes:

28. Using **GOSA Earning and Learnings data**, what is the typical salary range 5 years after graduation from the program?

Average Salary	75 th Percentile	50 th Percentile	25 th Percentile
1 year after graduation	N/A	N/A	N/A
5 years after graduation	N/A	N/A	N/A

Provide any additional comments, if needed:

No data are available for MS engineering graduates from GOSA Earning and Learning data.

29. Based on the data compiled and analyzed for this section (see Section C: Need), what is the job outlook for occupations filled by students with this degree?

The landscape of mechanical engineering in Georgia is poised for unprecedented growth, with job prospects surging at an impressive rate of 22.1%, outpacing the nationwide projection of 7%⁶. Furthermore, the anticipated annual influx of 1,000 job openings in the field from 2018 to 2028 underscores the state's vibrant and burgeoning engineering landscape⁷. This remarkable trajectory is spurred by investments in artificial intelligence, automation, Internet of Things, cyber-physical systems, and the establishment of cutting-edge manufacturing plants, all of which are driving transformative changes in the traditional realm of mechanical engineering. This paradigm shift, in turn, necessitates a highly skilled and well-trained workforce, highlighting the pertinence of an innovative MS program.

At the local level, Georgia stands poised to witness an influx of corporations in critical areas such as automation, automotive, and electrification, further accentuating the demand for mechanical engineering students and highly qualified professionals. The positioning of such a program at UGA offers immense potential to bolster the state's appeal to prospective corporations, ensuring a readily available and adept workforce, thus propelling Georgia to the forefront of engineering-driven industrial developments.

In light of these transformative dynamics, the proposed MS program in Mechanical Engineering at the University of Georgia emerges as a decisive endeavor, aligning with the evolving needs of the engineering industry. By cultivating a cadre of skilled professionals and highly qualified prospects, the program seeks to empower Georgia with a competent and adaptive workforce capable of embracing the

challenges and opportunities that lie ahead. As the state positions itself as a hub of innovation and industrial progress, this forward-looking initiative will undoubtedly serve as a catalyst for propelling mechanical engineering into a new era of excellence and advancement.

D. CURRICULUM

30. Enter the number of credit hours required to graduate[^]

32

31. Are you requesting a credit hour requirement waiver (either below or above traditional credit hour length requirements as prescribed by the University System of Georgia? See section 2.3.5 (Degree Requirements) of the USG Board of Regents Policy Manual [here](#) for more information).

No

Yes (If yes, explain the rationale for the request in the space below)

32. Related to SACSCOC accreditation, specify if the program format of the proposed program is a[^]:

Format (Check 1)	50% or more of the program is delivered online
<input type="checkbox"/> Combination of on-campus and online	<input type="checkbox"/> Yes
<input type="checkbox"/> Combination of off-campus and online	<input type="checkbox"/> Yes
<input type="checkbox"/> Hybrid, combination delivery	<input type="checkbox"/> Yes

33. Is the program synchronous or asynchronous?⁵ Mark one of the options below.

Synchronous

The majority of courses are offered at scheduled, pre-determined times with students connecting to a virtual room or location and interacting with faculty and fellow students via web/video conferencing platform.

⁵ See SACSCOC Handbook for Institutions Seeking Initial Accreditation [here](#).

Asynchronous

34. For **ALL** degree proposals, which **High Impact Practices**⁶ (HIPs) will faculty embed into the program? Mark all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Internships | <input checked="" type="checkbox"/> First-Year Experiences |
| <input type="checkbox"/> Common Intellectual Experiences | <input type="checkbox"/> Undergraduate Research |
| <input checked="" type="checkbox"/> Diversity/Global Learning | <input type="checkbox"/> Capstone Courses and Projects |
| <input type="checkbox"/> ePortfolios | <input type="checkbox"/> Learning Communities |
| <input type="checkbox"/> Service Learning, Community Based Learning | <input type="checkbox"/> Writing-Intensive Courses |
| | <input checked="" type="checkbox"/> Collaborative Assignments and Projects |

35. For **ALL** degrees, discuss how **HIPs** will be embedded into the program? Your discussion should provide specific examples and include whether the HIP is required or an optional component. It should also indicate at what point the experience is offered or required.

As part of the quest to cultivate adept and proficient mechanical engineers, the proposed MS program mandates students to engage in a structured orientation program during their first year of enrollment. This initial phase lays the groundwork for their academic journey, fostering a robust foundation in the field while honing essential skills such as critical thinking and problem-solving. Complementing this, each student will be appointed a mentor, adept at navigating the intricacies of the program, furnishing guidance on academic and research matters, and facilitating connections with diverse resources and opportunities. To equip M.S. students for their future careers, an array of workshops and seminars spanning various topics, including grant writing, communication skills, and professional development, will be offered, empowering them to meet the challenges of their prospective careers with confidence.

In the spirit of fostering collaboration and skills enhancement, collaborative assignments and projects hold intrinsic value within the realm of mechanical engineering. Through such endeavors, students are granted invaluable opportunities to work synergistically, fostering the acquisition of vital teamwork skills. Incorporating team-based research projects, group assignments, peer mentoring, and interdisciplinary undertakings, the M.S. program seeks to imbue students with the spirit of cooperation and ingenuity, positioning them for success in an ever-evolving engineering landscape. By championing a comprehensive and integrative approach, the proposed program seeks to empower aspiring mechanical engineers with the competence and collaborative prowess essential for making transformative contributions to the field.

36. Does the program take advantage of any USG initiatives?

Mark all that apply, and provide a letter of support from applicable initiatives' leadership.

eCampus

Georgia Film Academy

FinTECH

Other: Specify Initiative Here

¹ Direct measures may include assessments, HIPs, exams, etc.

⁶ See Kuh (2008). High-Impact Practices: What They Are, Who Has Access to Them, and Why They Matter. *Association of American Colleges and Universities*, 14(3), 28-29).

37. For **ALL** degree proposals, fill in the table below to demonstrate the link between the **learning outcomes** and NACE **career ready competencies**.

Insert more rows as needed.

Career Ready Competencies (NACE)	Student Learning Outcomes	Direct Measure (s) ¹
Critical Thinking/Problem Solving	Ability to identify problems and develop economically feasible solutions through critical thinking	Course assignments and exams; Research projects; Capstone projects; Direct observation from major professors.
Oral/Written Communications	Demonstrate the ability to effectively communicate experimental results orally with a range of audiences and exhibit efficient writing skills demonstrated through scientific publications and grant proposals.	Writing assignments such as research papers or technical reports; Presentations such as research seminars or project presentations; Peer and faculty evaluation;
Team Work/ Collaboration	Ability to perform efficiently in an interdisciplinary team as a member or as a leader to create a collaborative environment	Group projects; Peer and faculty evaluations; Case studies or simulations for complex problems.
Digital Technology	Ability to perform efficiently in an interdisciplinary team as a member, integrate concepts, and techniques to solve challenging mechanical engineering problems.	Hands-on projects involving Digital technologies; Examinations such as programming skills; Faculty evaluation during the research meetings; Industry certifications
Leadership	Ability to perform efficiently in an interdisciplinary team as a leader.	Group projects for leadership roles; Peer evaluation on the leadership skills; Faculty evaluations; Leadership activities and workshops
Professionalism/ Work Ethic	Ability to identify problems and develop economically feasible solutions through critical thinking,	Faculty evaluation; Self-assessment; Mentor evaluations; Career development activities; Graduate surveys.

	scientific knowledge, etc.	
Career Management	Demonstrate the ability to effectively communicate experimental results orally with a range of audiences and exhibit efficient writing skills	Career assessments; Career development activities; Alumni surveys; Internships and co-op experiences; Mentor evaluation.
Global/Intercultural Fluency	Ability to identify problems and develop economically feasible solutions through critical thinking, scientific knowledge, engineering tools, and systematic approaches related to advanced mechanical engineering field	Self-assessment; Faculty evaluations; Study abroad experiences; Cross-cultural projects via international collaboration; Cultural diversity and inclusion training

38. How will learning outcomes for the program be assessed? Attach the curriculum map for the upper division or major curriculum.

The assessment of the program will be conducted by the School of Environmental, Civil, Agricultural and Mechanical Engineering (ECAM) graduate faculty working in conjunction with the College of Engineering's Senior Associate Dean for Academic Affairs. The results of the annual assessment will be reported to the UGA Office of Accreditation and Institutional Effectiveness, as well as to the School of Environmental, Civil, Agricultural and Mechanical Engineering graduate faculty and the ECAM External Advisory Board for their use in program development.

The student learning outcomes and the specific, measurable performance indicators are listed below:

- a. **Ability to identify problems and develop economically feasible solutions through critical thinking, scientific knowledge, engineering tools, and systematic approaches related to advanced mechanical engineering field.**
 1. The research objectives are supported by a critical review of current, relevant literature.
 2. The research objectives address a critical societal and/or technological need.
 3. The research objectives will contribute novel and unique knowledge to the discipline.

- b. **Ability to perform efficiently in an interdisciplinary team as a member or as a leader to create a collaborative environment, integrating concepts, and techniques to solve challenging mechanical engineering problems.**
 1. The student is able to identify and execute appropriate scientific/engineering methods to test the research objectives.
 2. The student can analyze and evaluate his/her data/model/simulations using correct statistical analysis, where appropriate.
 3. The student can draw sound conclusions that are supported by his/her results.

4. The student demonstrates extensive knowledge of contemporary issues that are directly and indirectly associated with his/her research.
 5. The student has a clear understanding of required future work.
- c. Demonstrate the ability to effectively communicate experimental results orally with a range of audiences and exhibit efficient writing skills demonstrated through scientific publications and grant proposals.**
1. The student presents information in a logical and interesting sequence with a clear and strongly supported central message.
 2. The student uses relevant graphics and/or multimedia to explain and reinforce the presentation.
 3. The student delivery (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and the speaker appears polished and confident.
 4. The student appearance, language, and presentation convey a high level of professionalism.

Direct assessment of the student learning outcomes will be performed by the Graduate Advisory Committee members during each student thesis defense. An assessment rubric has been developed by the College of Engineering and is currently used for assessment of students in Engineering. Indirect assessment of student learning outcomes will be undertaken with a student exit survey.

39. How will outcomes for graduates of the program be assessed?

(Outcomes may include employment and placement rates, student or employer surveys, or other assessments of graduate outcomes)

Alumni Survey: The M.S. in Mechanical Engineering alumni will be asked to complete a Qualtrics survey every 3 years, which assesses employment and placement rates and the value of their education in their current position. This survey will also aid in determining specific courses and research areas in the Mechanical Engineering program that are considered the most relevant to the industry and whether new areas need to be incorporated into the program of study. The Graduate Coordinator will collect the survey responses and the School Chair will tabulate the results and report them to the faculty at the annual faculty meeting. This is an indirect assessment of all learning outcomes.

Advisory Board Focus Group: The Mechanical Engineering (M.S.) program has identified two primary constituencies: the *mechanical engineering industry* and *mechanical engineering alumni*. The School of Environmental, Civil, Agricultural, and Mechanical Engineering advisory board is comprised of representatives from both of these constituent groups. Each member of the board serves a three-year term; at the completion of the term each member can opt to step down from the board or commence another three-year term. Focus groups are performed during the annual advisory board meeting every three years to ensure graduate outcomes are consistent with industry needs and that outcomes are being attained. The results of the focus groups are reviewed by the School Chair to determine alignment with industry needs and satisfactory attainment. If an obvious disparity exists between the constituencies' needs, a special faculty meeting will be scheduled. Program faculty review feedback from the focus groups and draft an appropriate response based on constituent needs. This will be sent to the advisory board who will determine if the response is acceptable or if further revisions are needed.

40. List the entire course of study required to complete the academic program.

The M.S. in Mechanical Engineering with thesis option is provided for students wishing to receive professional training via coursework integrated with research training through the successful completion of a thesis. This option requires a minimum of 32 semester hours in the Program of Study, which consists of:

- A minimum of 23 semester hours of coursework, which must include:
 - 21 hours of graduate-level coursework, including
 - 9 hours selected from the Emphasis course lists.
 - 12 hours from UGA courses open only to graduate students and exclusive of thesis (ENGR 7300, Master's Thesis) and research (ENGR 7000, Master's Research, and ENGR 7010, Project-Focused Masters Research).
 - 1 hour of ENGR 8950, Graduate Seminar*
 - 1 hour of GradFirst
- A minimum of 6 hours of master's research (ENGR 7000, Master's Research) or project-based research (ENGR 7010, Project-Focused Masters Research). A typical student's research hours will exceed this minimum; however, at most 6 hours of ENGR 7000 or ENGR 7010 may be listed on the program of study.
- 3 hours of thesis preparation and writing (ENGR 7300, Master's Thesis)

** Only 1 hour of Graduate Seminar may apply on the program of study. Students are strongly encouraged to continue regular attendance at speaker series presentations even if not formally registered in the seminar.*

In this M.S. with thesis option program, all coursework is selected consistent with specific degree and emphasis area requirements in coordination with the Student's Faculty Advisor and approved by the student's Advisory Committee on the Program of Study. To receive the M.S. degree, each student is required to present a satisfactory research proposal approved by the student's advisory committee and the graduate coordinator and pass a final examination and defense of the research thesis.

The M.S. in Mechanical Engineering with non-thesis option is available for students who wish to emphasize professional training without performing a research-based thesis. This degree option is suitable for students who are interested in engineering as a second major, undergraduates currently enrolled in double majors pathway, mid-career professionals, non-traditional students who are currently employed in engineering-related professions. This option requires a minimum of 33 semester hours in the Program of Study, which consists of:

- A minimum of 30 semester hours of coursework, which must include:
 - 27 hours of graduate-level coursework, including
 - 15 hours selected from the Emphasis course lists.
 - 12 hours from UGA courses open only to graduate students and exclusive of thesis (ENGR 7300, Master's Thesis) and research (ENGR 7000, Master's Research, and ENGR 7010, Project-Focused Masters Research).
 - 1 hour of ENGR 8950, Graduate Seminar

- 1 hour of GradFirst
- 3 hours of project-based research (ENGR 7010, Project-Focused Masters Research)

For the M.S. in Mechanical Engineering with non-thesis option, the program of study will include course work that is consistent with specific degree and emphasis area requirements that is approved by the program's Graduate Coordinator. Each student is required to complete a three-credit-hour Master's project (ENGR 7010) under the supervision of the faculty project advisor. The student needs to identify an appropriate graduate faculty in his/her degree program to serve as faculty project advisor for his/her Master's project. To receive the M.S. degree under the non-thesis option, each student should prepare a project plan at the beginning of his/her Master's project for the faculty project advisor's approval, then follow the project plan to successfully finish the Master's project, and finally submit a written Master's project report for the faculty project advisor's approval.

Emphasis course list

- BIOE 6740, Biomaterials (3 credit hours)
- BIOE 6760, Biomechanics (3 credit hours)
- CVLE(MCHE) 8160, Advanced Fluid Mechanics (3 credit hours)
- CVLE(MCHE) 8350, Nonlinear Finite Element Analysis (3 credit hours)
- CVLE(MCHE) 8640, Advanced Strength of Materials (3 credit hours)
- CVLE(MCHE)(LAND) 6660, Sustainable Building Design (3 credit hours)
- ELEE 6210, Linear Systems (3 credit hours)
- ELEE 6220, Feedback Control Systems (3 credit hours)
- ELEE 6230, Sensors and Transducers (3 credit hours)
- ELEE 6235, Industrial Control Systems (3 credit hours)
- ELEE 6260, Introduction to Nanoelectronics (3 credit hours)
- ELEE 8310, MEMS Design (3 credit hours)
- ENGR 6350, Introduction to Finite Element Analysis (3 credit hours)
- ENGR 6670, Quality Engineering (3 credit hours)
- ENGR 6920, Theory of Design (3 credit hours)
- ENGR 8103, Computational Engineering: Fundamentals, Elliptic, and Parabolic Differential Equations (3 credit hours)
- ENGR 8180, Advanced Mass Transfer (3 credit hours)
- ENGR 8220, Microfluidic Transport Phenomena (3 credit hours)
- ENGR 8270, Computational Nanomechanics (3 credit hours)
- ENGR 8900, Directed Study in Engineering (1-3 credit hours)
- ENVE 6230, Energy in Nature, Civilization, and Engineering (3 credit hours)
- ENVE 6250, Energy Systems and the Environment (3 credit hours)
- ENVE 6530, Energy and Environmental Policy Analysis (3 credit hours)
- ENVE 6550, Environmental Life Cycle Analysis (3 credit hours)
- INFO 6150, Engineering Informatics (3 credit hours)
- MCHE 6310, Introduction to Vehicle Dynamics (3 credit hours)
- MCHE 6360, Robotic Manipulators (3 credit hours)
- MCHE 6380, Solid Mechanics (3 credit hours)
- MCHE 6390, Advanced Mechanical Vibration (3 credit hours)

- MCHE 6400, Air Pollution Engineering (3 credit hours)
- MCHE 6430, Introduction to Tribology (3 credit hours)
- MCHE 6500, Advanced Thermal Fluid Systems (3 credit hours)
- MCHE 6530, Combustion and Flames (3 credit hours)
- MCHE 6580, Computational Fluid Dynamics (CFD) (3 credit hours)
- MCHE 6590, Fluid Mechanics II (3 credit hours)
- MCHE 6650, HVAC Systems for Buildings and Industry (3 credit hours)
- MCHE 6850, Advanced Manufacturing Processes (3 credit hours)
- MCHE 6860, Advanced Vehicle Manufacturing (3 credit hours)
- MCHE 8170, Advanced Heat Transfer (3 credit hours)
- MCHE 8250, Combustion Science (3 credit hours)
- MCHE 8380, Continuum Mechanics (3 credit hours)
- MCHE 8500, Technical Foundations of Energy for Policy Practitioners (3 credit hours)
- MCHE 8650, Aerosol Science and Engineering (3 credit hours)
- MCHE 8850, Gas Dynamics (3 credit hours)
- MIST 6550, Energy Informatics (3 credit hours)

E. IMPLEMENTATION

41. Provide an enrollment projection for the next four academic years

	Year 1	Year 2	Year 3	Year 4
Fiscal Year (Fall to Summer)	2023-24	2024-25	2025-26	2026-27
Base enrollment ¹	17	11	28	33
Lost to Attrition (should be negative)	0	-2	-2	-2
New to the institution	4	30	35	40
Shifted from Other programs within your institution	0	0	0	0
Total Enrollment	21	39	61	71
Graduates	10	11	28	33
Carry forward base enrollment for next year	11	28	33	38

¹Total enrollment for year 1 becomes the base enrollment for year 2

- a. Discuss the assumptions informing your enrollment estimates (i.e. for example, you may highlight anticipated recruiting targets and markets, if and how program implementation will shift enrollment from other programs at the institution, etc.)

Graduate faculty in the School of Environmental, Civil, Agricultural, and Mechanical Engineering currently advise students enrolled in Engineering (M.S.) with areas of emphasis in mechanical engineering. In Fall 2023, 10 students were enrolled in Engineering (M.S.) with the emphasis in mechanical engineering; these students are expected to switch to the new M.S. in Mechanical Engineering program.

Historical data indicate for the previous three years the college consistently recruited around 30 new students to Engineering (M.S.) with the above areas of emphasis each academic year and graduate 40-50% of current students. The school fully expects to sustain a program enrollment of at least 30 students for the new M.S. program in Mechanical Engineering and anticipates enrollment will increase in future years as additional faculty members are being recruited through the current Presidential Cluster Hiring Initiative.

b. If projections are significantly different from enrollment growth for the institution overall, please explain.

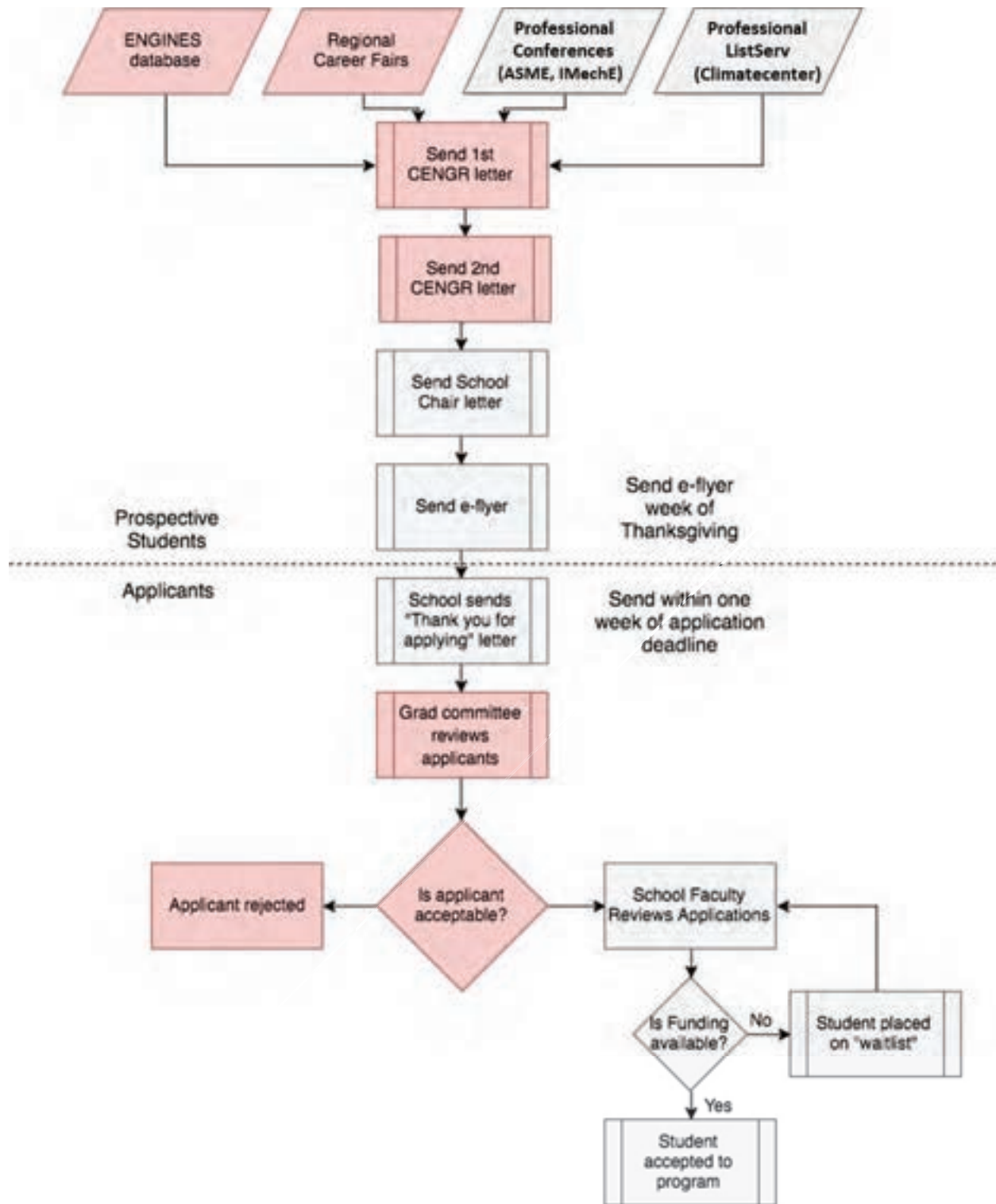
Not applicable.

42. If projected program enrollment is not realized in year two, what actions are you prepared to take?

In the event that program enrollment is not realized, the School of ECAM will increase recruitment activities by increasing social media presence, advertising in relevant print and online publications such as the College of Engineering, ASME, IMechE, NSPE, AMPs, SAE, SES, SEM, etc., websites, and by proactively encouraging current undergraduate and M.S. students to pursue this Ph.D. program.

43. Discuss the marketing and recruitment plan for the program. Include how the program will be marketed to adult learners and underrepresented and special populations of students. What resources have been budgeted for marketing the new program?

The School of ECAM will utilize a number of avenues to market the new program and recruit students, including the ENGINES database of prospective engineering graduate students, regional career fairs, professional meetings including the American Society of Mechanical Engineering (ASME), Institute of Mechanical Engineers (IMechE), National Society of Professional Engineers (NSPE), Advanced Manufacturing & Processing Society (AMPs), Society of Automotive Engineering (SAE), Society of Experimental Mechanics (SEM), Society of Engineering Science (SES), American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) and the Student Aerospace Initiative (SAI) American Physics Society (APS), American Society of Education Engineers (ASEE), and a variety of professional listservs, such as Climatecenter. The program will be prominently displayed on the school's website. The flow chart for student recruitment is presented below.



44. Provide a brief marketing description for the program that can be used on the Georgia [OnMyLine website](#).

Embark on a transformative journey with the MS in Mechanical Engineering program at the University of Georgia (UGA). Rooted in excellence and innovation, our cutting-edge curriculum equips students with a comprehensive skill set, encompassing mechanical systems, thermal systems, manufacturing, and design. Whether you aspire to advance your career in the transportation industry, contribute to energy

system innovation, or pioneer groundbreaking research in emerging fields, our program offers unrivaled opportunities to excel.

At UGA, we believe in fostering a collaborative and supportive learning environment. Engage with distinguished faculty and expert mentors as you navigate your academic and research pursuits, while benefiting from a wealth of interdisciplinary resources and initiatives. Empowered by our state-of-the-art facilities and global connectivity, you'll be well-prepared to embrace the dynamic challenges of today's engineering landscape. Join us at UGA, and become a driving force in the future of mechanical engineering. Embrace a world of possibilities and unlock your potential with our transformative MS program. Apply now and elevate your engineering journey at UGA.

45. If this proposal is for a Doctorate program, provide information below for at least three external and one USG reviewer of aspirational or comparative peer programs.

Not applicable.

Note: External reviewers must hold the rank of associate professor or higher in addition to other administrative titles.

Note: It is the responsibility of the institution proposing the doctoral degree program to attain external reviews and submit those reviews to their proposal.

F. RESOURCES

F1. Finance^: Complete and submit the Excel budget forms and the questions below

(Do not cut and paste in the excel budget template into this document, submit the Excel budget templates separately.)

46. Are you requesting a differential tuition rate for this program? (masters, doctoral, and professional programs only)

- No (Move to answer question 48)
- Yes (If yes, answer questions 47a & 47b)

a. What is the differential rate being requested? The rate below should reflect the core tuition plus the differential, i.e. the tuition rate being advertised to the student.

In-State per Semester: \$Enter Amount

Out-of-State per Semester: \$Enter Amount

b. Provide tuition and mandatory fee rates assessed by competitive/peer programs per full-time student per semester. Please complete the table below:

Institution name	Link to institution's tuition & fee website	In-state tuition	Out-of-state tuition	In-state fees	Out-of-state fees

47. If existing funds are being reallocated, describe the impact on existing programs and the plan to mitigate these impacts.

Neither faculty nor staff hiring or reassignments are necessary, as the courses and program materials are already being offered as an area of emphasis under Engineering (M.S.). The school will not need to create new sections of any existing courses to meet additional demand.

48. If student fees are being charged (excluding mandatory fees), explain the cost and benefit to students, per fee.

Not applicable.

49. Are there any additional financial costs that students will have to take on as part of this program, but not assessed directly by the institution? (e.g. software licenses, equipment, travel, etc.) If so, please describe these costs and what strategies you have considered to decrease the student's financial burden?

No additional costs to students are anticipated.

50. How does the institution plan for and fund increased indirect costs associated with the growth in students anticipated in the proposed program? Consider costs such as student advisement, student support services, tutoring, career services, additional library materials, technology, or other infrastructure.

All resources needed for the program are pre-existing, as it is already being offered as an area of emphasis under Engineering (M.S.). The School of ECAM will utilize the current resources (personnel, library, equipment, laboratory, and computing) available at the school, college, and university levels. In addition, the school will obtain funds from the university for new hires as part of the Presidential Interdisciplinary Hiring Initiative.

F2. Faculty^ – Explain your faculty and staff plan for the program

51. Discuss how existing courses may be incorporated into this new program:

a. Course Development

of total courses in the curriculum: **42**

of existing courses to be part of the new program **42**

Net number of new courses to be developed **0**

b. Comment on the costs and workload related to the new course development.

All courses are currently being offered. No new courses are being proposed or developed as part of the program and therefore, no new resources are needed to cover instructional costs.

52. Explain how **current faculty and staff** will contribute to the program.

a. How many faculty will be re-directed to this program from existing programs?

0

- b. If this program is approved, what will be the new teaching load and distribution of time for the current faculty members? How will existing staff be impacted?

The School of Environmental, Civil, Agricultural, and Mechanical Engineering has **27** faculty currently teaching courses that are directly related to the proposed program of study or who are performing mechanical engineering research. These faculty will be the major professors for students enrolled in the proposed M.S. program. The teaching loads for existing faculty will remain the same. The courses, currently offered as part of the existing areas of emphasis in mechanical engineering major, will now be offered as part of the new major. Existing staff will not be impacted by the creation of the new major.

- c. List the faculty that will be redirected from their current teaching load assignments to support this new program

No faculty will be redirected from their current teaching assignments. The proposed degree will incorporate courses that are currently taught by existing, qualified faculty as part of the areas of emphasis in mechanical engineering.

- d. Explain who will be teaching the existing courses that are being released so faculty can teach a new program course. Additionally, please discuss the fiscal implications associated with course releases and redirections of faculty.

Not applicable; all courses are already being offered.

- e. What costs are included in your budget for course development? (Consider professional development, course development time buy out, overload pay, and re-training)

Not applicable.

- f. Attach your SACSCOC roster for the proposed program. Include in parentheses the individual with administrative responsibility for the program and whether listed positions are projected new hires and/or currently vacant.

Faculty Name	Rank	Courses Taught	Academic Degrees	Current Workload % EFT	Other Qualifications and Comments <i>Research Areas</i>

				<i>Research, Instruction, Service</i>	
Camelio, Jaime	Full Professor	MCHE xxx	Ph.D., Mechanical Engineering, University of Michigan, 2002	30(R) 10(I) 60(S)	<ul style="list-style-type: none"> Intelligent manufacturing systems Cyber physical security for manufacturing systems – vulnerability mapping, mitigation technologies Data mining and statistical learning applications for manufacturing processes and systems, process monitoring, diagnosis, prognosis, and control
Chorzepa, Mi Geum	Associate Professor	CVLE(MCHE) 8350 Nonlinear Finite Element Analysis, 3 (G), CVLE(MCHE) 8640 Advanced Strength of Materials, 3 (G)	Ph.D., Structural Engineering, Washington University in St. Louis, 2008	50(R) 50(I)	<ul style="list-style-type: none"> Structural Analysis & Design Nonlinear Finite Element Analysis Nuclear Safety Related Structures Containment Structures Steel Plate Structures Cryogenic Structures Sustainable Building Design Progressive Collapse Analysis Materials Modeling Forensic Engineering Structural Repair <p>Composite Materials</p> <p>Earthquake Engineering</p>
Davis, Benjamin	Associate Professor	MCHE 6390 Advanced Mechanical Vibrations, 3 (G)	Ph.D., Mechanical Engineering, Duke University, 2008	50(R) 50(I)	<ul style="list-style-type: none"> Structural Analysis & Design Structural Vibration Acoustics Acoustic-Structure Interaction Nonlinear Dynamics Flow-Induced Vibration Fluid-Structure Interaction Elastic Stability
Freeman, Eric	Associate Professor	BIOE 6760 Biomechanics, 3 (G), ENGR 6350 Introduction to Finite Element Analysis, 3 (G) MCHE 6380 Solid Mechanics, 3 (G) ENGR 8220 Microfluidic Transport	Ph.D., Mechanical Engineering, University of Pittsburgh, 2012	60(R) 40(I)	<ul style="list-style-type: none"> Microfluidics Modeling Electrophysiology Drug Delivery Bioinspiration Smart Materials Droplet Mechanics Soft Materials

		Phenomena, 3 (G)			
Gattie, David	Associate Professor	ENVE 6250 Energy Systems and the Environment, 3 (UG/G), MCHE 8500, Technical Foundations of Energy for Policy Practitioners, 3 (G)	Ph.D., Ecology, University of Georgia, 1993	50(R) 50(I)	<ul style="list-style-type: none"> • Energy systems and environmental issues • Power generation • Energy policy
Haidekker, Mark	Full Professor	ELEE 6220 Feedback Control Systems, 3(G)	Ph.D., Computer Science – University of Bremen, Germany, 1998	50(R) 50(I)	<ul style="list-style-type: none"> • Biosensing and bioimaging; • instrumentation
Handa, Hitesh	Associate Professor	BIOE 6740 Biomaterials, 3 (G)	Ph.D., Material Science & Engineering, Wayne State University, 2008	60(R) 40(I)	<ul style="list-style-type: none"> • Biomaterials for Medical Device Applications • Nitric Oxide Releasing Materials • Blood-Material Interactions • Antimicrobial and Hemocompatible Materials • Wound Healing Materials
Hilten, Roger	Assistant Professor of Practice	ENGR 6670 Quality Engineering, 3(G)	Ph.D. Bio and Ag Engineering, 2012	10(R) 10(I) 80(S)	<ul style="list-style-type: none"> •
Hu, S. Jack	Full Professor and Provost		Ph.D., Mechanical Engineering, University of Michigan, 1990	100(S)	<ul style="list-style-type: none"> • Manufacturing Systems • Assembly and materials joining • Smart manufacturing
Kastner, James	Associate Professor	ENGR 8180 Advanced Mass Transfer, 3 (G)	Ph.D., Applied Biology, Georgia Institute of Technology, 1993	60(R) 40(I)	<ul style="list-style-type: none"> • Biochemical engineering • Environmental, nanostructured and chemical catalysts • Enhanced biomass pyrolysis and gasification processes •
Kazanci, Caner	Associate Professor	ENGR 8103 Computational Engineering: Fundamentals, Elliptic, and Parabolic Differential Equations, 3 (G)	Ph.D., Mathematical Sciences, Carnegie Mellon University, 2005	50(R) 50(I)	<ul style="list-style-type: none"> • Biological and ecological modeling, simulation and analysis. • Numerical analysis, dynamical systems. • Ecological network analysis (ENA), ecological thermodynamics. • Stochastic modeling tools, individual based modeling. • Collective behavior of large biochemical reaction networks, the relation between network structure and system dynamics.

Kisaalita, William	Full Professor	ENGR 8910, Foundations for Engineering Research, 3(G)	Ph.D. in chemical engineering, University of British Columbia	60(R) 40(I)	<ul style="list-style-type: none"> • Microtissue engineering • Development engineering •
Lawrence, Thomas	Professor of Practice	MCHE 6650, HVAC Systems for Buildings and Industry, 3(G) CVLE(MCHE)(LAND) 6660, Sustainable Building Design, 3(G)	Ph.D., Mechanical Engineering, Purdue University, 2004	22(R) 60(I) 18(S)	<ul style="list-style-type: none"> • Green buildings • Smart grid and building energy management • HVAC systems • Energy informatics
Leo, Donald	Full Professor and Dean	MCHE 6390, Advanced Mechanical Vibrations, 3(G)	Ph.D., Mechanical and Aerospace Engineering, University of Buffalo, 1995	100(S)	<ul style="list-style-type: none"> • Smart Materials • Biomolecular Materials
Li, Ke	Associate Professor	ENVE 6550, Environmental Life Cycle Analysis, 3(G)	Ph.D., Environmental Engineering, Michigan Technological University, 2003	50I 50(I)	<ul style="list-style-type: none"> • Environmental engineering • Water/wastewater treatment and sustainability •
Mani, Sudhagar	Full Professor	MCHE 8710, Engineering Properties of Animal and Plant Materials: Form and Function, 3(G)	Ph.D., Chemical and Biological Engineering, University of British Columbia, Canada, 2005	50(R) 50(I)	<ul style="list-style-type: none"> • Biological and chemical process modeling, simulation & optimization • Sustainable biomass feedstock supply logistics system • Novel biomass densification, torrefaction and thermal conversion technologies • Techno-Economic Analysis (TEA) and Life Cycle Assessment (LCA) • Novel routes to produce nano-size cellulose, chemicals & bio-composites •
Mativo, John	Full Professor		Ph.D., Mechanical Engineering, University of Dayton, 2020	50(R) 50(I)	<ul style="list-style-type: none"> • Energy • Mechanics • Mechatronics • STEM Education K-16
Morkos, Beshoy	Associate Professor	MCHE 6850, Advanced Manufacturing Processes, 3(G) MCHE 6860, Advanced Vehicle Manufacturing, 3	Ph.D., Mechanical Engineering, Clemson University, 2012	50(R) 50(I)	<ul style="list-style-type: none"> • Computational Design • System Representation and Reasoning • Model Based System Engineering • Manufacturing Resource Optimization and Operations • Complex System Design • Cyber-Physical-Social Systems in Manufacturing • Human-AI interaction in Design and Manufacturing

Pidaparti, Ramana	Full Professor	ENGR 6560 Engineering Design Optimization, 3 (G); ENGR 8900 Directed Study in Engineering, 1-3	Ph.D., Aeronautics & Astronautics, Purdue University, 1989	50(R) 50(I)	<ul style="list-style-type: none"> • Design engineering and innovation • Computational mechanics • Drug delivery devices • STEM education
Rao, Haygriva	Professor of Practice	INFO 6150 Engineering Informatics, 3 (G)	PGD, Knowledge Engineering, National University of Singapore, 2001	100(I)	<ul style="list-style-type: none"> • <i>AI and Machine Learning</i>
Rotavera, Brandon	Associate Professor	MCHE 6500, Advanced Thermal Fluid Systems, 3 (G) MCHE 6530, Combustion and Flames, 3 (G) MCHE 8250, Combustion Science, 3 (G) MCHE 8850 Gas Dynamics, 3 (G)	Ph.D., Interdisciplinary Engineering, Texas A&M University, 2012	60(R) 40(I)	<ul style="list-style-type: none"> • Biofuels • Sustainable Energy • Combustion • Thermodynamics, • Lasers/Optics • Physical Chemistry • Chemical Kinetics • Fluid Dynamics • Spectroscopy • Gas Chromatography • Mass Spectrometry
Saleh, Rawad	Associate Professor	MCHE 6400, Air Pollution Engineering, 3(G) ENGR 8990, Advanced Topics in Engineering	Ph.D., Environmental Engineering, Duke University, 2010	50I 50(I)	<ul style="list-style-type: none"> • Atmospheric Aerosols • Gas-particle Interaction • Aerosol optical properties • Combustion emissions • Air quality and climate modeling • Chemical Transport Modeling
Schramski, John	Associate Professor	ENVE 6230, Energy in Nature, Civilization & Engineering, 3(G)	Ph.D., Ecology, University of Georgia, 2006	60(R) 40(I)	<ul style="list-style-type: none"> • Energy systems • Ecosystem energetics • Thermodynamics • Theoretical ecology • Complex network analysis • Ecological network theory • Energy Supply and Demand • Environmental Energy Systems • Sustainable Use of Global Ecosystems • Food Security • Natural Resources Engineering

Shao, Yunli	Assistant Professor	ELEE 6210, Linear Systems (3 credit hours) ELEE 6220, Feedback Control Systems (3 credit hours)	Ph.D., Mechanical Engineering, University of Minnesota, 2019	50(R) 50(I)	<ul style="list-style-type: none"> • Dynamic systems and control • Optimal control • Connected and automated vehicles • Intelligent transportation systems • Automotive systems
Song, Kenan	Associate Professor	MCHE 6850, Advanced Manufacturing Processes (3 credit hours)	Ph.D., Mechanical Engineering, 2014	50(R) 50(I)	<ul style="list-style-type: none"> • Advanced manufacturing • Advanced materials • Composite engineering • Energy devices • Biomedical scaffolds
Sun, Hongyue	Associate Professor	MCHE 4440 Design and Control of Production Systems, 3 (UG)	Ph.D., Industrial Engineering, Virginia Tech, 2017	50(R) 50(I)	<ul style="list-style-type: none"> • Advanced manufacturing • Process modeling, monitoring, diagnosis, and control • Data analytics for manufacturing processes and systems, occupational safety and health
Wang, Xianqiao	Associate Professor	ENGR 8270, Computational Nanomechanics, 3(G) MCHE 8330, Continuum Mechanics, 3(G)	Ph.D. Mechanical Engineering, George Washington University, 2011	50(R) 50(I)	<ul style="list-style-type: none"> • Brain mechanics • Mechanics of architected materials and structures • Materials design by machine learning and AI • Mechanics of cell and nanoparticle interactions • 2D materials • Multiscale modeling and simulations
Yang, Jidong	Associate Professor	ENGR 8990, Advanced Topics in Engineering, 3(G)	Ph.D., Civil Engineering, University of South Florida,	50(R) 50(I)	<ul style="list-style-type: none"> • Transportation Engineering and Planning • Sustainable and Resilient Infrastructure Systems • Smart Mobility Systems • Statistical and Econometric Models • Data Mining and Machine Learning Methods • Computer Vision and Artificial Intelligence Applications

53. Explain your plan for new faculty and staff for the program:

The faculty are already in place, and the courses are being offered under Engineering (M.S.). This proposal is only to move the program content from an area of emphasis to an independent major.

54. How many new staff will be needed for this program over the next four years?

0

- a. Discuss why new or additional staff resources are needed. Consider staff needs, support services (i.e. advisement, faculty support, etc.)

No new staff or staff resources will be required for the proposed major.

F3. Facilities – complete the questions below

55. Where will the program be offered?^ Mark all that apply

- Main campus
- Satellite campus: Specify Here
- Other: Specify Here
- 100% Online

If the program is 100% online and will use only existing faculty, remaining facilities questions can be skipped.

56. Complete the table below. Specify if these spaces are existing or new in the table below. If new, provide the semester and year of completion.

Space	New Space (ASF)	Use Existing Space (as is) (ASF)	Use Existing Space (Renovated) (ASF)	Semester/Year of Occupancy
Dry Labs (STEM related)	10,000		Fall/2018; Spring/2022; Fall/2022	10,000
Wet Labs (STEM related)	2,000		Fall/2018/Spring/ 2022; Fall/2022	2,000
Dedicated Offices	6,000		Fall/2018; Spring/2022; Fall/2022	6,000
Fine Arts Spaces ¹				
Classrooms	4,000		Fall/2018; Fall/2022; Spring/2022	4,000
Meeting Rooms	300		Fall/2022	300
Student Study Space	500		Fall/2018; Spring/2022; Fall/2022	500
Other (Specify)				

¹Fine arts spaces can include theatres, recital halls, visual arts studios, performing arts centers, recording studios, design labs, and other performance venues.

57. If the anticipated program includes labs or “other” specialized spaces, please describe specific requirements for these rooms, including equipment.

There are no new laboratories needed for this program, since all laboratories are already established as a part of the MS in Engineering with an emphasis in Mechanical Engineering. These existing laboratories and facilities and their locations are listed on the UGA College of Engineering web pages at: <https://engineering.uga.edu/facilities>. Specifically:

In the Driftmier Engineering Center:

- The Materials Testing and Heat Transfer Laboratory in Driftmier 1301
- The Systems Simulation Laboratory in Driftmier 1304
- The Systems Design Laboratory in Driftmier 1310
- The Mechanical, Thermal, and Fluid Systems Laboratory in Driftmier 1311

- The Design and Discovery Lab in Driftmier 1350
- The Process Automation Laboratory in Driftmier 1355
- The Measurement Systems Laboratory in Driftmier 1361

In I-STEM 1:

- The Advanced Manufacturing Laboratories 1022, 1048, and 2036

In I-STEM 2:

- Advanced Manufacturing and Materials Laboratory in 1230
- Sensing and Perception Laboratory in 1239 and 1239A

In Boyd Research and Education Center 7th Floor:

- Advanced Mobility/E-Mobility Laboratory: 701 and 702
- Design Informatics and Computational Engineering: 706
- Smart Mobility and Infrastructure Laboratory: 714

In Whitehall/Engineering Education and Research Campus (EERC):

- Large-scale research and testing facility for all engineering disciplines; educational venue

58. What building(s) will be used to accommodate these programs? Please indicate specific building areas or room numbers where possible. If new construction, leasing, or land acquisition is required, please describe those plans.

No new buildings are needed for this program, since all offices and laboratories needed are already established as a part of the MS in Engineering with an emphasis in Mechanical Engineering. The Driftmier Engineering Center will be used for delivering all courses offered under the new program as well as provide offices for existing faculty and students. In addition, the following existing office spaces will be used outside Driftmier:

In I-STEM 1:

- Offices in rooms 1022, 1048, 2036, 2036A, 2036B, 2040A, and 2040B

In I-STEM 2:

- Offices in rooms: 1250, 1252, and 1254
- Offices in rooms: 2208, 2209, 2210, 2211, 2221, 2250, 3211, 3212, 3213, 3214, 3215, and 3221

In Riverbend North:

- Offices in rooms: 125A, 155C, and 155E

In Riverbend South:

- Office in room: 191

In Boyd, 7th Floor:

- Offices in 708A, 708B, 708C, 708D, 716, 717A, 716B

59. What is the anticipated cost of facilities investments necessary during the first 4 years of the program?
What is the planned funding source for initial facilities needs?

Not applicable.

F4. Technology

60. Identify any major equipment or technology integral to program start-up and operations. List any equipment or assets over \$5,000 (cumulative per asset) needed to start-up and run the program (insert rows as needed)

	Technology and Equipment	Start-up Costs	On-going Costs	Est. Start Date of Operations/Use
1				
2				
3				
4				
5				
6				
Total Technology Costs		0	0	

G. RISKS AND ASSUMPTIONS

61. In the table below, list any risks to the program’s implementation over the next four years. For each risk, identify the severity (low, medium, high), probability of occurrence (low, medium, high), and the institution’s mitigation strategy for each risk. Insert additional rows as needed. (e.g. Are faculty available for the cost and time frame).

Risk	Severity	Probability	Risk Mitigation Strategy

This major is currently offered as a concentration with a robust enrollment. Therefore, there is no assumed risk in implementing it as a major.

62. List any assumptions being made for this program to launch and be successful (e.g. SACSCOC accreditation request is approved, etc.).

The school has successfully developed M.S. engineering program with areas of emphasis in mechanical engineering and electrical engineering. Student enrollment in the current program is strong and continues to increase. This successful experience together with current resources would ensure the success of the proposed M.S. program in Mechanical Engineering.

H. INSTITUTION APPROVAL

Have you completed and submitted the signature page?



APPENDIX I

Use this section to include letters of support, curriculum course descriptions, and recent rulings by accrediting bodies attesting to degree level changes for specific disciplines, and other information.

Course Descriptions

Course Prefix/Number	Credit Hours	Course Title	Course Description	Required /Elective
BIOE 6740	3	Biomaterials	Biomaterials and groundwork for topics such as mechanical, chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body is studied for the biological point of view.	S
BIOE 6760	3	Biomechanics	The application of engineering principles to solid mechanics and to body dynamics is discussed. The student should understand the mechanics of the musculoskeletal system.	S
ELEE 6210	3	Linear Systems	Time and frequency domain analysis of linear systems, convolution, fourier series, and fourier transforms with applications	S
ELEE 6220	3	Feedback Control Systems	The analysis and design of continuous and discrete time, and linear feedback control systems.	S
ELEE 6230	3	Sensors and Transducers	Fundamentals of the sensing process, transducers and their environments and the measurement problem. Transducer types and modeling. Displacement, motion, pressure, fluid-flow, temperature measurements.	S
ELEE 6235	3	Industrial Control Systems	Introduces basic concepts of industrial automation, modeling, and control of industrial processes. It introduces various elements in industrial automation, including pneumatic and hydraulic valves and actuators. Controller programming (such as PID and PLC) and tuning will be covered. Practical components include hardware selection, software design, and system integration.	S
ELEE 6260	3	Introduction to Nanoelectronics	Recent advances in nanoelectronics, including the novel properties and device structures when classical transport is replaced by quantum transport as the device size is reduced down to nanometer scale. Introduction of new fabrication and characterization techniques developed for these nanoscale devices.	S
ELEE 8310	3	MEMS Design	Exploration of the world of microelectromechanical systems (MEMS) through awareness of material properties, microfabrication technologies, structural behavior, sensing techniques, actuation schemes, fluid behavior, electronic circuits, and feedback systems. Lectures will be augmented with homework assignments and design projects.	S
ENGR 4350/6350	3	Finite Element Analysis (F)	Fundamental finite element theory for the solution of engineering problems. Geometrical modelling techniques, element selection, and tests for accuracy. Emphasis on problems in structural mechanics and elasticity.	S
ENGR 6560	3	Engineering Design Optimization	The design of better products and processes is a fundamental goal of all engineering. Fundamental concepts of optimization techniques that can be used for a variety of engineering components or systems.	S

ENGR 6670	3	Quality Engineering	Introduces fundamentals, principles, and techniques of quality engineering through a toolkit that includes project management, quality management, and quality improvement for products and processes. Throughout the course, students get hands-on experience in exploring, understanding, and developing quality management tools and strategies to address real-world industrial challenges.	S
ENGR 6920	3	Theory of Design	Design is structured process found in numerous professions. The theory of design provides a scientific basis for this structured process and provides principles for optimizing the design outcome. Two axioms of design, the independence axiom and the information axiom, and their applications in several disciplines will be investigated.	S
ENGR 8103	3	Computational Engineering: Fundamentals, Elliptic, and Parabolic Differential Equations	The use of computational mathematics to develop models, evaluate data, and make predictions of relevance to engineering. Numerical differentiation and integration, numerical solutions of algebraic, ordinary, elliptic and parabolic differential equations, error analysis, and programming techniques are examined in the context of engineering applications.	S
ENGR 8110	3	Informatics in Engineering and Environmental Systems	The philosophical and theoretical basis of informatics, with applications in civil engineering, environmental engineering, and the environmental sciences. Readily available software will be used throughout the course. Specific applications will depend on the needs of the students in the course.	S
ENGR 8130	3	Statistical Learning and Data Mining	Explores statistical learning methods and techniques with an emphasis on their applications in engineering. The focus will be on the classic and modern statistical and machine-learning methods, including linear and logistic regression, discriminant analysis, k-nearest neighbors, tree-based methods, support vector machines, principal components analysis, manifold learning, clustering methods, and artificial neural networks.	R
ENGR 8180	3	Advanced Mass Transfer	Basic laws of mass transport will be derived. Advanced mass transport will focus on molar flux, Fick's law, binary diffusion, two phase transfer, convective mass transfer, mass transfer coefficients, and mass transfer with chemical reaction. A project will be assigned requiring numerical solution of governing mass transport equations.	R
ENGR 8220	3	Microfluidic Transport Phenomena	A mathematical description of transport and exchange at smaller length scales. Topics include channel flow, transport laws, diffusion and dispersion, surface tension dominated flows, and charged species flows.	S
ENGR 8270	3	Computational Nanomechanics	Computational nanomechanics has been emerging as a fundamental engineering analysis tool for designing nanodevices and for predicting intriguing phenomena at the nanoscale. The basic knowledge of computational nanomechanics, such as force fields, interatomic potentials, statistical quantities, and program coding skills. Students are encouraged to develop a molecular dynamics program by	S

			themselves, learn and utilize analytical software to solve nanomechanics problems, and investigate fundamental questions in nanoscience.	
ENGR 8825	3	Bioinspired Design and Analysis	This course offers a unique interdisciplinary advanced design experience, and provides an opportunity to learn the bio-inspired design, develop competence as innovators, and gain the necessary tools and experience.	S
ENGR 8910	3	Foundations for Engineering Research	The philosophy of engineering research, research and design methodologies, review of the departmental research programs and related training goals, and writing and presenting thesis and dissertation proposals and grant proposals	R
ENGR 8950	1x4	ECAM Graduate Seminar	Presentations/discussions related to engineering research, teaching, design, and service presented by students, faculty, and industry leaders.	R
ENGR 8990	3	Advanced Topics in Engineering - Deep Learning and Engineering Applications	Introduces modern deep learning methods and architectures (e.g., convolutional neural networks (CNNs) and recurrent neural networks (RNNs), energy-based models) with an emphasis on their engineering applications. The focuses of the course will be on major advancements in deep learning in recent years. The core ideas and principles of deep learning will be discussed. Both supervised and self-supervised learning will be covered with an emphasis on vision applications, including image classification, object detection, and image segmentation.	S
ENGR 9000	3	Doctoral Research	Research while enrolled for a doctoral degree under the direction of faculty members.	R
ENGR 9010	3	Project-Focused Doctoral Research	Project-focused research while enrolled for the Ph.D. degree under the direction of faculty members. This course is for students who are performing sponsored research specifically devoted toward completing project deliverables important to project sponsors that may not be directly related to Ph.D. dissertation research.	R
ENGR 9300	Variable	Doctoral Dissertation	Dissertation writing under the direction of the major professor.	R
ENVE 6550	3	Environmental Life Cycle Analysis	An in-depth look at life cycle analysis (LCA), the existing models and analytical methodologies, and their applications. Conducting Life Cycle Analyses for small scale items such as individual manufactured products up through larger scaled engineered system items such as an engineered structure, transportation system, etc.	S
INFO 6150	3	Engineering Informatics	Provides instruction and insights into data, theory, and application of machine learning algorithms and skills to apply these algorithms to real world datasets and applications in Engineering. The course also provides hands-on experience through project work.	S
MCHE 6310	3	Introduction to Vehicle Dynamics	Course focuses on the dynamics and controls of land vehicles. Activities include a physical understanding of automotive vehicle dynamics such as simple lateral, longitudinal, and ride quality models; a design of ground vehicles for directional stability and control; tire mechanics and their effects on vehicle performance; and a synthesis of the steering mechanism and suspension system. Digital	S

			simulation of vehicle dynamics using computers will be conducted.	
MCHE 6360	3	Robotics Manipulators	Derivation of kinematic equations and inverse kinematic solutions for robotic manipulators; general models for robot arm dynamics and dynamic coefficients for multiple degrees of freedom robot arms with parallel and serial structures; and control of single- and multiple-link manipulators and how to design simple feedback control laws.	S
MCHE 6380	3	Solid Mechanics	A continuation of Strength of Materials. An introduction to elasticity, continuum mechanics, and 3-D stress transformations. Asymmetrical bending of beams, torsion of general cross-section bars, and energy methods are discussed.	S
MCHE 6390	3	Advanced Mechanical Vibration	Modeling and analysis of multi-degree-of-freedom vibrating systems, including free and forced response of both undamped and damped systems. Lumped parameter and distributed parameter systems will be studied. Application of time domain and frequency domain techniques to the design and analysis of complex mechanical systems.	S
MCHE 6400	3	Air Pollution Engineering	The course builds on concepts in thermodynamics, transport phenomena, and physical chemistry to introduce the formation of particulate and gaseous pollutants and their effect on air quality. Special focus will be on engineering design strategies to control pollutants associated with energy generation (power plants) and utilization (on-road vehicles) systems.	S
MCHE 6430	3	Introduction to Tribology	The study of friction, wear, lubrication, and the design of bearings from the consideration of engineering and materials science.	S
MCHE 6500	3	Advanced Thermal Fluid Systems	Advanced study of concepts in thermodynamics and fluid dynamics applied to thermofluid systems, including gas turbines, compressors, wind turbines, and rocket nozzles. Design analysis of pumps, fans, and wind turbines. Introduction to high-speed compressible flow, shock wave physics, and propulsion devices.	S
MCHE 6530	3	Combustion and Flames	Fundamentals of thermodynamics, fluid dynamics, and mass transfer in laminar and turbulent flames in combustion systems. Introduction to chemical kinetics, explosions, supersonic combustion, deflagration and detonation, and ignition dynamics. Introduction to combustion in stationary gas turbines for power generation, internal combustion engines, and combustion systems in jet engines.	S
MCHE 6580	3	Computational Fluid Dynamics	The course outlines how numerical data analyses are used to predict the fluid dynamics and thermal interactions between fluids and their surroundings. Fundamental concepts in modeling are first presented, then students compare CFD results to laboratory data. Students then apply their CFD skills to a more detailed project.	S
MCHE 6590	3	Fluid Mechanics II	Analysis of both internal and external viscous incompressible flows. Specific examples include pipe flow, flow between parallel plates, restriction flow meters, boundary layer flow, the Blasius equation, drag force, and lift force. An introduction	S

			to computational fluid dynamics, with application to the course topics, is also covered.	
MCHE 6650	3	HVAC Systems for Buildings and Industry	A study of the system concepts, sizing, design, and equipment used for the heating, ventilation, and air conditioning systems in buildings (commercial and residential) as well as industrial applications.	S
MCHE 6660	3	Sustainable Building Design	Design features and technologies contained in sustainable (green) building design and the process to create a green building to include commercial and residential construction. Topics include energy and water, construction materials, site work, indoor environmental quality, and how design practices fit into the overall picture of developing a more sustainable society.	S
MCHE 6860	3	Advanced Vehicle Manufacturing	Advanced analysis of ground and spaceflight vehicle manufacturing and assembly processes. Emphasis placed on the design, analysis, and manufacturing of automotive (e.g., passenger vehicles) and rocket spaceflight vehicle systems. Details the quantitative and qualitative components of manufacturing, material selection, material treatment, identification of processes used to manufacture, methods for quality control, and factory performance metrics as it relates to ground and space vehicular systems.	S
MCHE 8160	3	Advanced Fluid Mechanics	A mathematical treatment of fluid mechanics using tensors with emphasis on viscosity, momentum balance in laminar flow, equations of change, velocity distribution in laminar and turbulent flow, interphase transport, macroscopic balance, and polymeric liquids. Analytical and numeric methods for solving fluid mechanic problems will be used.	S
MCHE 8170	3	Advanced Heat Transfer	Conduction, convection, and radiation heat transfer will be covered from an analytical and applications viewpoint. Computer tools for solving heat transfer problems will be emphasized. Projects will involve the analyses of a research-related or design-related heat transfer problem involving at least two of the three heat transfer modalities.	S
MCHE 8250	3	Combustion Science	Fundamental concepts related to the use of combustion as a source of transportation energy and advanced combustion technologies. Topics include mathematics of combustion, characteristics and structure of flames, chemical thermodynamics/thermochemistry, chemical kinetics, potential energy surfaces, collision theory, and molecular structure of hydrocarbons and biofuels.	S
MCHE 8350	3	Nonlinear Finite Element Analysis	The formulations and numerical solution of nonlinear problems in structural, mechanical, and biological/biomedical engineering by finite element methods. Both geometric and material nonlinearities will be studied. Students are expected to learn how to use a finite element analysis tool and complete a practical engineering project.	S
MCHE 8380	3	Continuum Mechanics	Continuum mechanics is concerned with the deformations and motions of continuous material media under the influence of external effects. This course will present various classic theories of solid and fluids. The theory of continuous media- the	S

			basic laws of motion and constitutive theory-will be discussed.	
MCHE 8500	3	Technical Foundations of Energy for Policy Practitioners	An in-depth study of the technical foundations appropriate and necessary for preparing practitioners to engage in the complex and diverse challenges of 21st-century energy policy development at state, national, and international levels. This will range from basic principles of energy conversion to analytical methods for translating technical energy concepts into implementable policy frameworks. All energy resources will be covered, with a particular focus on electric power generation.	S
MCHE 8640	3	Advanced Strength of Materials	Provides students with the essential knowledge necessary to analyze structural/mechanical systems and components as well as the ability to interpret analysis results. Basic concepts and tools for analyzing engineering problems (elasticity equations, equilibrium, compatibility, etc.) will be emphasized as well as the mathematical formulations.	S
MCHE 8650	3	Aerosol Science and Engineering	The tools required to analyze aerosol systems both as pollutants and vehicles for drug delivery. We start with fundamental aerosol concepts (size statistics, motion, thermodynamics, gas-particle interactions, coagulation, optical properties), and then use these concepts to investigate topical applications (pollution formation and control, aerosol-climate interactions, pharmaceutical aerosols).	S
MCHE 8850	3	Gas Dynamics	This course is concerned with the physics of gas flows in propulsion devices, including gas turbine and rocket engines. Emphasis is placed on fluid mechanics and thermodynamics, including compressible flow, shock waves, and supersonic wind tunnels. Specific topics include inlets and nozzles, combustors and afterburners, and rocket engine design and performance.	S
MCHE(CHEM) 8970	3	Combustion Science	Fundamental concepts related to the use of hydrocarbons and biofuels as a source of transportation energy for advanced combustion technologies. Topics include chemical bonding, theory/mathematics of combustion, chemical thermodynamics, chemical kinetics, potential energy surfaces, collision theory, ignition dynamics, pollutant formation, and related topics applied to combustion.	S
MIST 6550	3	Energy Informatics	Energy Informatics involves analyzing, designing, and implementing systems to increase the efficiency of energy demand and supply systems. This requires the collection and analysis of data used to optimize energy distribution and consumption networks. Students will leverage the necessary information systems competencies and multi-disciplinary knowledge to increase societal energy efficiency.	S



**UNIVERSITY OF
GEORGIA**
College of Engineering

MEMORANDUM

**Requesting review and approval of Graduate Certificate in Natural Infrastructure from the
School of Environmental, Civil, Agricultural, and Mechanical Engineering (ECAM)**

January 29, 2024

The College of Engineering Curriculum Committee (CCC) approved a Graduate Certificate in Natural Infrastructure from the School of Environmental, Civil, Agricultural, and Mechanical Engineering (ECAM) on December 7, 2023. The certificate is interdisciplinary, and letters of support is attached to this proposal. The College of Engineering is proposing four new courses that are in process. This proposal has been approved by Dean of Engineering Dr. Donald Leo; ECAM Chair Dr. Bjorn Birgisson; and College of Engineering Assistant Dean of Academic and Faculty Affairs Dr. Mable Fok. We are now forwarding this proposal to the Graduate School for your review and approval.

Mable P. Fok

Mable Fok
Assistant Dean for Academic and Faculty Affairs, College of Engineering

PROPOSAL FOR A CERTIFICATE PROGRAM

Date: 11/21/2023

School/College/Unit: College of Engineering - School of Environmental, Civil, Agricultural, and Mechanical Engineering.

Department/Division: Institute for Resilient Infrastructure Systems (IRIS)

Certificate Title: Graduate Certificate in Natural Infrastructure

Effective Term: Fall 2024

Which campus(es) will offer this certificate? Athens

Level (Undergraduate, Graduate, or Post-Baccalaureate): Graduate

Point of Contact / Coordinator: Brian Bledsoe, School of Environmental, Civil, Agricultural, and Mechanical Engineering

Program Abstract: This program is designed for graduate students seeking in-depth knowledge and expertise in the field of natural infrastructure. It offers a combination of required core courses, elective courses, and practical experiences, providing students with a well-rounded skill set in planning, developing, and implementing innovative natural infrastructure projects. This program also aims to prepare a diverse cadre of graduate students with specific competencies and practical experience to meet the unique workforce demands of effectively and equitably implementing natural infrastructure solutions. It integrates an interdisciplinary approach, drawing from various disciplines to provide a comprehensive understanding of natural infrastructure and its applications.

1. Purpose and Educational Objectives

State the purpose and educational objectives of the program. How does this program complement the mission of the institution?

Through a combination of required core courses, elective courses, and hands-on experiences, this certificate program aims to equip graduate students with the skills and expertise needed to effectively address complex challenges and develop resilient solutions within the broader context of infrastructure systems. Through the program's emphasis on innovative and integrated problem-solving at the intersection of engineering, ecology, landscape design, and

social science, students will be trained to acquire the skills and experiences they need to effectively plan, design, build, and manage natural infrastructure systems.

In tandem with Institute for Resilient Infrastructure Systems (IRIS) mission, the program contributes significantly to the broader objectives of the University of Georgia. By fostering interdisciplinary collaboration and promoting a comprehensive understanding of natural infrastructure, the program aligns with the university's commitment to academic excellence, research, and service to society. In addition, this certificate will help prepare students to address real-world challenges in an inclusive and holistic manner, aligning with the university's goal of producing graduates who are capable of effecting positive change.

Upon successful completion of this certificate program, the student will be able to:

- Understand and implement natural infrastructure and nature-based solutions and their various applications in water resource management and engineering such as flood risk management, coastal erosion, effects of transportation networks on waterways, and water quality management.
- Understand and navigate the planning and regulatory processes for large-scale civil works projects utilizing nature-based solutions.
- Understand pragmatic and specific examples of how natural infrastructure can be intentionally co-designed to work together with and strengthen conventional infrastructure for sustainable urban development and resilience.
- Understanding the role of communities as stakeholders affecting and affected by natural infrastructure outcomes and be fluent in best practices for stakeholder engagement.
- Incorporate multi-scale spatial thinking for understanding natural infrastructure systems.
- Incorporate the key principles of sustainability and resilience as they apply to natural infrastructure into project planning and management.
- Perform risk and uncertainty analysis for climate-resilient infrastructure.
- Speak and write clearly and persuasively in the context of interdisciplinary water and environmental management issues.
- Function effectively in a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

2. Need for the Program

Explain why this program is necessary. (See attached letter from US Army Corps of Engineers)

One of the most critical challenges plaguing our present-day society is the rising social, ecological and economic costs of natural disasters such as flooding and erosion, driven by both climate change and human development patterns. Despite the massive investments in

conventional flood defenses such as levees, breakwaters and seawalls, there is a need to explore more resilient and adaptive infrastructure systems that can meet the future challenge of amplified flooding, rising sea levels, and increased wave action within a context of rapid social change.

Policymakers, practitioners and the public are increasingly recognizing and understanding the roles of natural infrastructure in achieving the twin engineering objectives of sustainable development of the built environment and protecting the natural environment. Right now, in the U.S., there are broad calls for major investments in NI to support climate resilience and adaptation. Recent policies including the Infrastructure Investment and Jobs Act and the Water Resources Development Act explicitly require the inclusion of NI and “natural and nature-based features” in numerous types of civil works projects including hazard mitigation, transportation, and water resources infrastructure.

With increasing climate change impacts, mounting threats of habitat and biodiversity loss, and massive global infrastructure investments anticipated over the next few decades, there is an urgent need to train a workforce capable of delivering effective NI solutions at multiple scales. Therefore, this certificate will provide students with the right knowledge, skills and experiences to effectively plan, design, build, and manage NI systems. Upon completion of this certificate program, students will be able to understand how natural and engineering processes can work together to deliver effective NI solutions that generate far-reaching social, economic, and ecological benefits.

Enrollment Information:

- a. Semester/Year of Program Initiation:** Fall 2024
- b. Semester/Year of Full Implementation of Program:** Fall 2024
- c. Semester/Year First Certificates will be awarded:** Spring 2025
- d. Annual Number of Graduates expected (once the program is established):** 20-30
- e. Projected Future Trends for number of students enrolled in the program:** We anticipate that most students will take 1-2 years to complete the certificate. In the first year, we expect at least 10 students to earn the certificate, with up to 20 enrolled. After three years, we expect an enrollment of 50-60 students, with 20-30 completing the certificate each year.

3. Student Demand

- a. Provide documentation of evidence of student demand for this program, including a student survey.**

Based on the survey responses from 26 students, the likelihood of pursuing a certificate in Natural Infrastructure and Nature-Based Solutions (NI/NBS) was assessed. The results revealed that a significant majority of students, constituting 92% of the respondents, expressed their intent to pursue the certificate. Among them, 69% indicated they were ‘Very likely,’ while 23% mentioned they were ‘Somewhat likely.’ These findings underscore a strong interest in specialized training in this field.

Here are a selected list of quotes from the survey responses:

“I want to pursue this as a full-time career, and I believe the certificate will make me competitive entering the workforce.” - Masters student, College of Engineering.

“This is exactly what I want to devote my career to; I’d take any opportunity to expand my knowledge on it and also give it a little credibility on my resume!” - Doctoral student, College of Engineering.

“I believe this is a critical knowledge base for a landscape architect who wants to utilize natural systems in design.” - Masters student, College of Environment and Design

“It’s clear that nature-based infrastructure is part of the future of environmental and civil engineering, so it’s worth it to master the related skills.” - Masters student, College of Agricultural and Environmental Sciences

b. Provide evidence that demand will be sufficient to sustain reasonable enrollment.

See the attached letter from USACE. Industry input provided during the formation of IRIS’ Innovation Ecosystem for an NSF Engineering Research Center proposal, as well as feedback from an Industry Summit on Nature-Based Solutions indicate very strong and sustained demand for this certificate. With the passage of the Bipartisan Infrastructure Law and its investment of billions of dollars in nature-based solutions, we anticipate a sustained demand for upskilling and workforce development across the next decade and beyond.

c. To what extent will minority student enrollments be greater than, less than, or equivalent to the proportion of minority students in the total student body?

We anticipate that the proportion of minority student enrollment in this program will be higher than that of the general student body in Engineering. We believe that this certificate’s focus on solutions that are environmentally and economically sound and that include robust stakeholder engagement will be particularly attractive to underrepresented students.

4. Program of Study

Provide a detailed program of study for the certificate program, including:

a. Identify any new courses created for this program

The certificate in natural infrastructure is appropriate for graduate students from multiple disciplines including engineering, ecology, environmental design, biology, natural resources, marine science, anthropology, economics, and other related disciplines. The graduate certificate will be housed in the Institute for Resilient Infrastructure Systems (IRIS), operating under the jurisdiction of the College of Engineering. The certificate offers a blend of required core courses, elective courses, and practical experiences, providing students with a well-rounded skill set in planning, developing, and implementing innovative natural infrastructure projects. Some of the required courses for the certificate are currently being developed and will be submitted through the established faculty governance course approval process.

These newly developed courses are:

ENVE 8310 Fundamentals of Natural Infrastructure and Nature-Based Solutions (3 credit hours - required):

This course will introduce students to the concepts, theories, and applications of natural infrastructure at multiple scales, including the site level, watershed, and regional scales. Students will be presented with the best available information on innovative use of natural processes and systems to increase infrastructure performance, efficiency, and benefits (social, environmental, and economic) in upland, riverine, and coastal settings. This course also provides students with knowledge on the integration of engineering, ecological design, and economic perspectives in the planning, design, implementation, and adaptive management of nature-based infrastructure systems that work in harmony with conventional infrastructure.

ENVE 8320 Engineering Design of Natural and Hybrid Infrastructure (3 credit hours - elective):

This immersive engineering design course will equip students with natural infrastructure design concepts and their applications in riverine and coastal settings. Students will have access to state-of-the-art information, exploring the essence, relevance, and practical implementation of engineering and ecological design principles to enhance infrastructure performance, efficiency, and benefits across economic, environmental, and social dimensions. Design projects will be a core component of the course, offering students the opportunity to actively contribute to real-world projects that utilize natural infrastructure in both riverine and coastal contexts.

ENVE 8330 Field Experiences in Natural Infrastructure (1 credit hour - required):

The course will cover various topics related to the planning, design, and execution of nature-based solutions for water resource management. Students will explore these topics through

fieldwork components, engaging in hands-on activities and gaining practical experience. Field sites around Athens will be visited to observe and study the interaction of natural systems and infrastructure. These activities aim to deepen the understanding of concepts discussed in other UGA courses on natural infrastructure and bridge the gap between theoretical knowledge and real-world application. The course also offers a unique opportunity for students to collaborate with professionals, experts, and local stakeholders involved in diverse ecosystems.

ENVE 8340 Internship for Natural and Hybrid Infrastructure (3 credit hours - required):

This internship course is a unique and immersive capstone course that offers students the opportunity to work directly with industry, agency and nonprofit partners on real-world natural infrastructure design projects. This practicum provides students with valuable hands-on experience in designing and implementing solutions to enhance natural infrastructure systems. Under the supervision of experts and industry representatives, students work within a professional environment to develop their skills and competencies in natural infrastructure design. The course allows students to integrate theoretical knowledge with practical application, showcasing their abilities in addressing real-world challenges.

b. Program Content

All students will be required to complete the necessary coursework, with a minimum of 14 credit hours attainable. This includes taking the “Fundamentals of Natural Infrastructure and Nature-Based Solutions,” “Field Experiences in Natural Infrastructure,” “Skills for Collaborative Research,” “Internship in Natural and Hybrid Infrastructure,” and any two elective courses from the provided menu. The two electives must be chosen from different categories to ensure broad experience.

Required Coursework	Course Prefix	Credit Hours
Fundamentals of Natural Infrastructure and Nature-Based Solutions	ENVE 8310	3
Field Experiences in Natural Infrastructure	ENVE 8330	1
Skills for Collaborative Research	ECOL 8550	1
Internship in Natural and Hybrid Infrastructure	ENVE 8340	3
Electives from a menu of approved options	(Choose 2)	5-6
TOTAL HOURS		13 - 14

Students must pick two electives from the list below. These courses must have different category codes (E, B, or S). Additional courses may be added to this list after consideration by the Executive Committee.

	Course Title	Course Prefix	Credit Hours
E	Engineering Design of Natural and Hybrid Infrastructure	ENVE 8320	3 credits
E	Coastal Engineering	ENGR 6990	3 credits
E	Environmental River Mechanics	CVLE 8110	3 credits
B	Foundations of Restoration Ecology	ECOL 6220	3 credits
B	Ecological Landscape Restoration	LAND 6390	3 credits
B	Wetland Management	WASR 4400/6400	3 credits
B	Stream Ecology	ECOL 8220	2 credits
B	Freshwater Ecosystems	ECOL 6310	3 credits
S	Environmental Ethics	PHIL 6200	3 credits
S	Environmental Justice	ENVE 6730	3 credits
S	Social Science Research Applications	ANTH 7200	3 credits

E = Engineering; B = Biology/Ecology; S = Social/Policy/Economics

5. Model Program and Accreditation

- a. Identify any model programs, accepted disciplinary standards, and accepted curricular practices against which the proposed program could be judged. Evaluate the extent to which the proposed curriculum is consistent with these external points of reference and provide a rationale for significant inconsistencies and differences that may exist.
 - b. If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.
- Not applicable.

6. Student Learning Outcomes

Upon successful completion of this certificate program, the student will be able to:

- Understand and implement natural infrastructure and nature-based solutions and their various applications in water resource management and engineering such as flood risk management, coastal erosion, effects of transportation networks on waterways, and water quality management.
- Understand and navigate the planning and regulatory processes for large-scale civil works projects utilizing nature-based solutions.
- Understand pragmatic and specific examples of how natural infrastructure can be intentionally co-designed to work together with and strengthen conventional infrastructure for sustainable urban development and resilience.
- Understanding the role of communities as stakeholders affecting and affected by natural infrastructure outcomes and be fluent in best practices for stakeholder engagement.
- Incorporate multi-scale spatial thinking for understanding natural infrastructure systems.
- Incorporate the key principles of sustainability and resilience as they apply to natural infrastructure into project planning and management.
- Perform risk and uncertainty analysis for climate-resilient infrastructure.
- Speak and write clearly and persuasively in the context of interdisciplinary water and environmental management issues.
- Function effectively in a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

7. Assessment and Admissions

Describe how the learning outcomes for the program will be assessed. Describe the process and criteria for how students will be admitted to and retained in the program.

Assessment

The certificate program is designed to help students gain a comprehensive understanding of natural infrastructure through a combination of theoretical knowledge, practical experiences, and interdisciplinary collaboration. The courses are designed to provide complementary learning outcomes, but when completed together, they fulfill the eight sustainability competencies outlined by the United Nations (UN). These include: 1) Systems thinking competency, (2) Anticipatory competency, (3) Normative competency, (4) Strategic competency, (5) Collaboration competency, (6) Critical thinking competency, (7) Self-awareness competency and (8) Integrated problem-solving competency.

Students will be assessed by grades in courses, evaluation of the capstone project, and an exit survey to comprehensively gauge their learning outcomes and overall educational experience. All core courses will be reviewed each semester by the program coordinator against

UGA-approved student learning outcomes, following UGA's Academic Affairs Policy No. 2.04-4. Per this policy, the College of Engineering has an assessment plan in place already and collects data on at least one of the student learning outcomes each semester.

Admissions

Students will apply to the certificate program by submitting a letter of interest to the Executive Committee. Because these students will work with community members and professionals, they will be asked to demonstrate both their interest in natural infrastructure and their professionalism and ability to engage with stakeholders. Any student who wishes to attempt the certificate and shows appropriate motivation and aptitude will be invited to do so.

Please submit documentation of the following approvals with the proposal:

- Department Head/Director
- Dean/Vice President
- Heads of any academic units which offer courses used in the program of study
- Heads of any academic units which offer similar programs



UNIVERSITY OF
GEORGIA

Warnell School of Forestry and
Natural Resources

Office of the Associate Dean for Academic Affairs

180 E. Green Street

Athens, Georgia 30602-2152

TEL 706-542-4284 | FAX 706-542-8356

www.warnell.uga.edu

November 10, 2023

Dear Dr. Bledsoe,

The School of Forestry and Natural Resources is pleased to support the proposed "Graduate Certificate in Natural Infrastructure" sponsored by the College of Engineering at UGA. We are excited to support the certificate and offer an elective, WASR 4400/6400 Wetland Management (3 credit hours, in CAPA), to count towards the certificate.

As you know, we appreciate the opportunity to contribute to interdisciplinary education and workforce development to meet vexing challenges while increasing environmental and social resiliency. We fully support using our course as an elective and look forward to future collaborations.

C. Rhett Jackson
Interim Associate Dean for Academic Affairs
& Professor

W. Dale Greene
Dean



DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
ENVIRONMENTAL LABORATORY
WATERWAYS EXPERIMENT STATION, 3909 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-6199

October 13, 2023

Brian P. Bledsoe, Ph.D., P.E.
UGA Athletic Association Distinguished Professor and Director
Institute for Resilient Infrastructure Systems
School of Environmental, Civil, Agricultural, and Mechanical Engineering
College of Engineering
University of Georgia
Building 1132 I-STEM-2, Rm. 3214
302 East Campus Road
Athens, GA 30602

RE: Graduate Certificate in Natural Infrastructure

Dear Dr. Bledsoe,

I write to express support for the establishment of a Graduate Certificate in Natural Infrastructure (NI) at the University of Georgia (UGA). As an organization strongly committed to accelerating, expanding, and improving the practice of natural infrastructure and nature-based solutions, the US Army Corps of Engineers' (USACE) Engineering With Nature® (EWN®) Program believes that this certificate program aligns perfectly with our mission and with our workforce development needs.

The proposed certificate program represents a significant and much needed opportunity to educate and train tomorrow's engineers and scientists, and to instill the skills and experiences they need to effectively plan, design, build and manage natural and hybrid infrastructure systems. I also anticipate that our existing practitioners will have significant interest and participation in this program.

I eagerly anticipate the initiation of UGA's NI certificate program and the opportunity to garner essential training and hire well-prepared graduates who share our commitment to deployment of nature-based solutions to protect people, communities and livelihoods while delivering a broad array of social and environmental benefits.

In closing, the EWN Program is highly supportive of UGA's proposed certificate program. Please don't hesitate to contact me by email at jeffrey.k.king@usace.army.mil or by phone at (202) 706-3534, if I can provide any additional information.

Sincerely,

A handwritten signature in black ink that reads "Jeffrey K. King".

Jeffrey K. King, Ph.D., P.E.
National Lead and Program Manager,
Engineering With Nature® Program

From: Sonia A Hirt <Sonia.Hirt@uga.edu>

Sent: Monday, November 6, 2023 3:23 PM

To: Brian Bledsoe <bbledsoe@uga.edu>

Cc: Jon Calabria <jcalabr@uga.edu>

Subject: Nat. Infr. Graduate Certificate - Request for approval to use elective courses from your unit

Dear Dr. Bledsoe,

The College of Environment & Design is pleased to support the proposed "Graduate Certificate in Natural Infrastructure" sponsored by the College of Engineering at UGA. We are excited to support the certificate and offer an elective, LAND 6390 Ecological Landscape Restoration, to count towards the certificate.

As you know, we appreciate the opportunity to contribute to interdisciplinary education and workforce development to meet vexing challenges while increasing environmental and social resiliency. We fully support using our course as an elective and look forward to future collaborations.

Sonia Hirt | Dean

Hughes Professor in Landscape Architecture and Planning

College of Environment + Design | www.ced.uga.edu

University of Georgia | 285 South Jackson Street, Athens, GA 30602

Sonia.Hirt@uga.edu | phone 706.542.8113

Guggenheim Fellow '23-24



Franklin College of Arts and Sciences
Office of the Dean

324 Old College
Athens, Georgia 30602
TEL 706-542-1538
www.uga.edu

November 16, 2023

Dr. Brian Bledsoe
UGA Athletic Association Distinguished Professor and Director
Institute for Resilient Infrastructure Systems
School of Environmental, Civil, Agricultural, and Mechanical Engineering
College of Engineering, University of Georgia
Building 1132 I-STEM-2, Rm. 3214
302 East Campus Road

Dear Dr. Bledsoe,

The Franklin College of Arts and Sciences is pleased to support the proposed "Graduate Certificate in Natural Infrastructure" sponsored by the College of Engineering at UGA. We are enthusiastic to support the certificate and offer electives, PHIL 6200, Environmental Ethics, and ANTH 7200, Social Science Research Applications, to count towards the certificate.

The Franklin College appreciates the opportunity to contribute to interdisciplinary education and workforce development and fully supports using these Franklin courses as electives. We look forward to future collaborations.

Sincerely,

A handwritten signature in black ink, appearing to read "Anna Stenport".

Anna Stenport
Dean
Franklin College of Arts and Sciences



November 9, 2023

Dr. Brian Bledsoe
UGA Athletic Association Distinguished Professor and Director
Institute for Resilient Infrastructure Systems
School of Environmental, Civil, Agricultural, and Mechanical Engineering
College of Engineering, University of Georgia

Dear Dr. Bledsoe:

The Odum School of Ecology is pleased to support the proposed National Science Foundation Research Traineeship titled "Graduate Certificate in Natural Infrastructure" sponsored by the College of Engineering at UGA. We are excited to support the certificate and offer the following electives to count towards the certificate:

ECOL 6220 Foundations of Restoration Ecology,
ECOL 6310 Freshwater Ecosystems,
ECOL 8220 Stream Ecology.

We at the Odum School appreciate the opportunity to contribute to interdisciplinary education and workforce development to meet important societal challenges while increasing environmental and social resiliency. We fully support using our courses as electives and look forward to future collaborations.

Sincerely,

Pejman Rohani
Associate Dean for Academic Affairs, Odum School of Ecology
Regents' Professor
UGA Athletics Association Professor
Deputy Director, Center for Influenza Disease & Emergence Research



UNIVERSITY OF
GEORGIA

120 Hooper Street
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Grady College of Journalism and Mass Communication

Office of the Dean

January 8, 2024

Dean Ron Walcott
The Graduate School
University of Georgia
Brooks Hall / 310 Herty Drive
Athens, GA 30602

Dear Dean Walcott:

I have reviewed and enthusiastically support the proposed **Graduate Certificate Program in Crisis, Risk, and Disaster Communication** to be led by the Grady College's Crisis Communication Think Tank and administered at the Graduate Studies of the Grady College of Journalism and Mass Communication. The proposed program has been presented to and received unanimous support from the faculty of the Grady College of Journalism and Mass Communication at the Fall 2023 Grady College Faculty Meeting.

Faculty votes: Unanimous votes for approving the program.

This distinct program, based on strong student demand, demonstrated industry needs, and the success of the Crisis Communication Think Tank model created and sustained, contributes to the Grady College's missions and goals to advance interdisciplinary collaboration in teaching, research and training at UGA (partnering with Terry College of Business and College of Public Health) and in deep and meaningful connections with the industry in the U.S. and globally.

I believe this new graduate certificate program will advance excellence in teaching and training the next generation of leaders in crisis, risk and disaster communication management.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. N. Davis', written over a circular stamp or seal.

Charles N. Davis
Dean, Grady College of Journalism and Mass Communication

PROPOSAL FOR A CERTIFICATE PROGRAM

Date: December 6, 2023

School/College/Unit: Grady College of Journalism and Mass Communication

Department/Division: Graduate Studies, Grady College of Journalism and Mass Communication

Certificate Title: Graduate Certificate in Crisis, Risk, and Disaster Communication

CIP: XXXXXXXX

Effective Term: Fall 2024

Which campus(es) will offer this certificate? Athens

Level (Undergraduate, Graduate, or Post-Baccalaureate): Graduate

Program Abstract:

Effective communication and competency in crisis management leadership is pivotal for organizations and stakeholders in times of crisis, risk, and disaster. The Crisis Communication Think Tank (CCTT), a thought leadership entity established in 2018 at the University of Georgia (UGA) and housed in the Grady College of Journalism and Mass Communication, has become a globally-recognized best practice model in building academia-industry collaborations among leading crisis scholars and practitioners through dialogue on emerging topics and co-creation of theory-driven, evidence-based advice for crisis research and practice. To educate the next generation of crisis communication leaders, based on the successful CCTT model of bridging academia and industry, this 12-credit graduate certificate program in crisis, risk, and disaster communication will provide advanced learning about crisis, risk, and disaster communication through specialized coursework connecting theory and practice across sectors and industries. Program participants will be recruited primarily from current and future graduate students in the Grady College of Journalism and Mass Communication, the Terry College of Business, and the College of Public Health. It is specifically aimed at students interested in obtaining in-depth and integrated education in the interdisciplinary areas of crisis and risk communication, risk management, and disaster management.

The certificate's curriculum is designed to be completed within the two years of study typically undertaken by students in master's degree programs. It will utilize currently available UGA graduate courses, instructional personnel, and classroom facilities. Graduate student participants who successfully complete the certificate will have the advanced communication management knowledge, skills, hands-on experiences, and demonstrated competencies to work with organizational leaders, corporate and/or firm executives, community partners, media professionals, and key stakeholders in and outside organizations to effectively manage crisis, risk, and disaster threats and challenges.

1. Purpose and Educational Objectives

State the purpose and educational objectives of the program. How does this program complement the mission of the institution?

The purpose of this graduate certificate is to provide students with advanced knowledge, skills, hands-on experiences, and demonstrated competency in applying crisis, risk, and disaster communication theories and principles to manage challenging and complex crisis, risk, and disaster issues. Students who graduate with this certificate will be better able to provide sound guidance on issues that can quickly and potentially profoundly harm organizational reputation, business well-being, and public health and safety. UGA has a commitment to excellence in research, teaching, and learning, with a mission to foster a well-prepared student body. Given the growing need for organizational readiness, and the critical role of effective and ethical public communication in society, there is much demand for advancing the training of future leaders and executives in the crisis, risk, and disaster communication domains. In times of crisis, risk, and disaster, leaders in the communication industry, business, and public health agencies must quickly meet the information needs of affected individuals and communities. Students in this certificate will acquire the knowledge and abilities needed to use communication to effectively respond to information needs, provide clear guidance in situations where uncertainties abound, and foster compliance with recommendations.

This certificate's administration will be housed in the Grady College of Journalism and Mass Communication. In addition to utilizing existing graduate courses and resources, along with the theory and practice foundation provided by the Crisis Communication Think Tank (CCTT), Grady College will collaborate with the Terry College of Business and the College of Public Health in making this a distinct program that advances excellence in crisis, risk, and disaster communication education with three core features:

- *Interdisciplinary*: Mass Communication, Business, Public Health
- *Interconnected*: CCTT as the model for academia-industry collaboration and partnerships
- *International*: CCTT-International network across countries and cultures

Specifically, the following educational objectives will be met by this program:

1. Increased advanced knowledge in the interdisciplinary areas of crisis, risk, and disaster communication for graduate students from mass communication, business, and public health.
2. Increased student communication leadership competency as reflected in greater knowledge and abilities in applying crisis, risk, and disaster communication theories, legal and regulatory considerations, disaster response practices, and research to decision-making, response plans and strategies, and communication activities and messages.
3. Increased student ability to use communication strategies, tactics, theories, and best practices to help organizations, agencies, and others formulate and implement sound, evidence- and theory-based communication activities in a crisis, risk, or disaster management situation.
4. Increased student ability to apply advanced communication management models and frameworks, including from hands-on, project-based, and scholar-practitioner learning experiences.

2. Need for the Program

Explain why this program is necessary. In addition, provide the following information:

- a. *Semester/Year of Program Initiation:* Fall 2024
- b. *Semester/Year of Full Implementation of Program:* Fall 2024
- c. *Semester/Year First Certificates will be awarded:* Spring 2026
- d. *Annual Number of Graduates expected (once the program is established):* 30
- e. *Projected Future Trends for number of students enrolled in the program:* 30 annually

Industry and societal demand for graduates with an advanced degree with crisis communication management skills and knowledge are not only increasing but becoming critical in the U.S. and globally, as illustrated by business community and industry thought leadership. For example, a 2023 business

journal article at the Wharton School is titled “The prepared leader: The five phases of crisis management” (<https://knowledge.wharton.upenn.edu/article/the-prepared-leader-the-five-phases-of-crisis-management/>); and a 2023 Forbes article discusses “Why cross-cultural communication can be critical in a business crisis” (<https://www.forbes.com/sites/edwardsegal/2023/07/28/why-cross-cultural-communication-can-be-critical-in-a-business-crisis/>). UGA has been positioned to not only address this need but take the lead as a national and international model for training the next generations of crisis communication leaders.

C. Richard Yarbrough, a 1959 UGA graduate, past president of the National Alumni Association, and recipient of the Distinguished Alumni Award, has established the C. Richard Yarbrough professorship in Crisis Communications Leadership, the first of its kind in the nation. Named one of The 100 Most Influential Public Relations Practitioners of the 20th Century by *PR Week* and twice identified by Georgia Trend magazine as one of the 100 Most Powerful and Influential People in the State of Georgia, Yarbrough’s vision is to make UGA “the go-to place for the study of crises.” In addition, the UGA Crisis Communication Think Tank (CCTT) is named one of the best practice models by the *Journal of Contingencies and Crisis Management* via connecting “the best of both worlds” (i.e., crisis scholars and practitioners) in the U.S. and globally. The CCTT leadership has established a partnership with risk management and legal studies experts at the Terry College of Business and disaster management experts at the College of Public Health.

In the program feedback session with industry leaders, Greg Trevor, UGA Associate Vice President and University Spokesperson provided the following thoughts: *“As a crisis communications practitioner for more than a quarter-century, I have seen first-hand how current and future generations of crisis communicators would benefit from an even higher level of academic preparation and practical training. I also can state unequivocally that the CCTT’s existing partnership between academics and practitioners has greatly enhanced my own insights into this rapidly changing field. Based on my preliminary conversations with fellow practitioners, I am convinced that this graduate certificate -- combining the distinctive strengths of the University of Georgia’s crisis, risk, and disaster communication curricula -- will be highly valued not only by current graduate students, but also by professionals looking to expand their knowledge and skills, and by prospective employers in academia, industry, and the non-profit sector.”*

Other leading crisis scholars and practitioners also offered their support and why this program is needed.

“The Graduate Certificate in Crisis, Risk, and Disaster Communication is the type of interdisciplinary program we have been needing in crisis management for years. The blend of communication, business, and public health makes it something unique and valuable to students. The certificate program is an amazing opportunity for graduate students at the University of Georgia that students at other schools will envy.” - Timothy Coombs, Editor-in-Chief, *Journal of Contingencies and Crisis Management*

“In today’s world risks, crises, and disasters are ever present. Tomorrow’s leaders must be equipped to successfully steer their organizations through choppy waters, and effective communication is essential to this success. With this proposal, UGA will cement their international reputation as the center for risk, crisis, and disaster communication education and research. The proposed certificate is novel and necessary. I anticipate wide interest in this certificate.” - Brooke Liu, Professor of Communication and former Associate Dean for Graduate Studies at the University of Maryland

"Communications practitioners all too often learn the business side of crisis management while responding to an issue. Bringing together elements from Communications, Legal, Risk Management, and Disaster Management into a single curriculum puts practitioners from each discipline into a better position to work together more efficiently and effectively when situations arise." - Matt O'Connor, Executive Director, Public Relations, Wellstar Health System

"For corporations, the ability to work together cross-functionally is critical in successfully anticipating, preparing and responding to crisis situations. This certificate program helps to address real-world challenges with a grounding in research." - Karen White, APR, Retired Executive Director, Corporate Affairs, Amgen

"The Graduate Certificate in Crisis, Risk, and Disaster Communication is an important step in both acknowledging the complexities of modern crises and preparing organizations for dealing with them. Most organizations, especially corporate entities, still have a traditional hierarchical structure and work in silos, with the various functions and operations within that structure fairly isolated from each other. Because of this, they are ill-prepared to work cross-functionally and in a matrix style when a crisis occurs. On top of that, the very nature of modern crises has evolved into a veritable hydra of disaster, with multiple risks and impacts all needing responses simultaneously. Bringing together the critical disciplines taught separately at Grady, Terry, and the College of Public Health is a best-in-class approach for crisis communications. With this innovative graduate certificate program, the UGA Crisis Communication Think Tank is redefining how organizations prepare for and respond to threats and crises." - Jason Anthoine, Managing Founder, Audacity

The need for such a program is also strongly supported by UGA faculty. For example:

"The proposed Graduate Certificate in Crisis, Risk, and Disaster Communication (CRDC) would meet a growing need for graduate students at the University of Georgia. Winston Churchill once said that "the difference between mere management and true leadership is communication." At the University of Georgia, we strive to create leaders in an array of fields. Crises challenge even the best leaders and only with training and preparation can future leaders navigate them. As the co-director of the University's Public Affairs Professional Certificate program that strives to prepare students for leadership roles in public affairs communications, I strongly support the establishment of the CRDC to prepare our leaders to effectively communicate on the crises, risks, and disasters of the future." - Joe Watson Jr., Carolyn Caudell Tieger Professor of Public Affairs Communications, Grady College of Journalism and Mass Communication

"This proposed certificate is an exemplar of effective collaboration across this great university.. Combining the resources and expertise in the Grady College, Terry College, and College of Public Health is exactly what is needed to allow students to understand and explore the inter-connectedness of crisis, risk, and disaster communication. Breaking out of proverbial silos, and taking a comprehensive approach to identifying problems and providing solutions, is essential to succeed in today's world. No matter which college a student is coming from, they will have a learning experience like no other that will provide them tremendous personal growth and allow them to take their knowledge and skills to the next level in their careers." - Jason Epstein, Lecturer of Legal Studies, Terry College of Business

"Crisis communication is a burgeoning field in organizational communication driven by a need to communicate instantly when faced with an organizational crisis. In its annual crisis report, the Institute for Crisis Management identified more than 2 million news mentions of crises ranging

from consumer activism to cyber crime to executive mismanagement and more. The challenge of crisis communication will be addressed by the proposed Graduate Certificate in Crisis, Risk, and Disaster Communication (CRDC). This Certificate will help graduate students and business and nonprofit executives be prepared for the ever-growing challenges of crisis communication management. The CRDC Certificate will be an academic credential in this field that is dominated by superficial training in for-profit workshops and other short-term, case study-focused learning. This Certificate will bring the academic rigor of combining research findings of leading crisis communication scholars and literature with the applied practicality that has become a hallmark of the University of Georgia's annual Crisis Communication Think Tank that is administered at Grady College of Journalism and Mass Communication. An additional benefit of this Certificate is the collaboration it represents between faculty from the Grady College, the Terry College of Business, and the College of Public Health. As C. Richard Yarbrough Professor of Crisis Communication Leadership Emeritus, I believe this is an important next step in furthering the reputation of the University of Georgia as a place to turn for crisis communication expertise. I am very excited by the prospects of this Certificate and enthusiastically endorse it without reservation." - Bryan Reber, C. Richard Yarbrough Professor of Crisis Communication Leadership Emeritus, University of Georgia

Additionally, graduate students' demand in advancing knowledge in this area has been increasing. As an example, since 2018, the enrollments of Grady College's graduate risk communication and undergraduate crisis communication courses have been increasing. As demonstrated in thesis and dissertation titles from Grady College M.A. and Ph.D. graduates since 2017, many are either focused on or related to crisis (e.g., organizational responses to crisis misinformation attacks, corporate change management, public health crisis management, ethical considerations in conflict communication), risk (e.g., misinformation spread on social media, health risk message fatigue), and/or disaster areas (e.g., environmental hazard and climate change related risk communication). [See student demand evidence from students and alumni in "Results of Student Survey" in the next section.]

This program will be initiated and implemented in Fall 2024, with the first certificates being awarded in Spring 2026. Thirty annual graduates are expected, a number which will likely hold steady, if not increase, given the growing market and industry demands. Grady College, together with Terry College of Business and College of Public Health program partners, will track these trends to ensure that adequate faculty and staff resources are in place to support graduate students in the certificate program.

3. Student Demand

a. Provide documentation of evidence of student demand for this program, including a student survey.

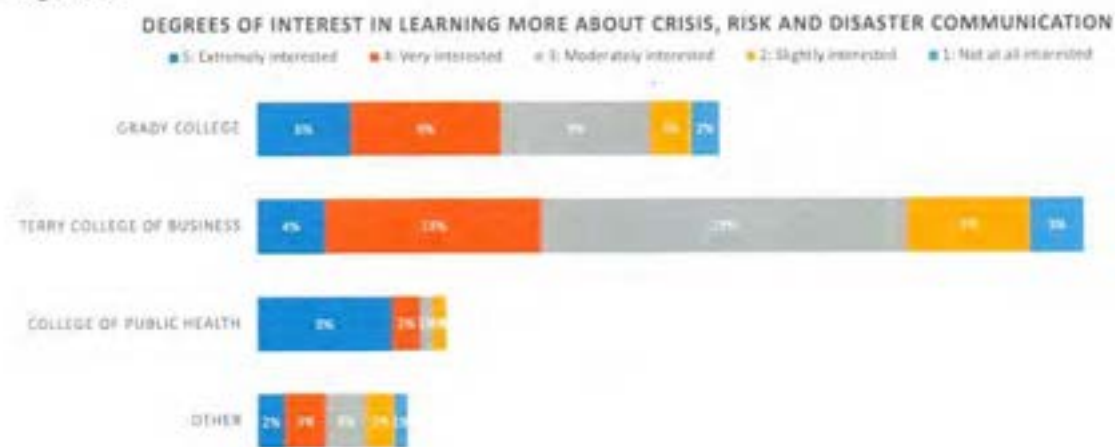
Results of Student Survey

A survey was launched in October 2023 and completed by 120 UGA students in total (75 undergraduate students and 45 graduate students) who are (1) enrolled in crisis, risk, and/or disaster related courses (e.g., ADPR 5120, Crisis Communication; DMAN 7100, Introduction to Disaster Management; EMBA 7710, Legal and Regulatory Environment of Business; JRMC 8170, Risk Communication; JRMC 9010, Mass Communication Theory, and LEGL 4400/6400, Business Law); (2) in or considering a graduate program, and/or (3) participating in applied communication focused practice/research student-led, faculty-advised groups at UGA, such as Talking Dog Agency and the Crisis Insights and Analytics Lab at Grady College. About 50.8% of them (n = 61) are from the Terry College of Business, 28.3% (n = 34) are from the Grady College of Journalism and Mass

Communication, and 11.7% (n = 14) are from the College of Public Health. Eleven students are from other colleges (e.g., Lamar Dodd School of Art, College of Education, Franklin College of Arts and Sciences, or School of Public and International Affairs).

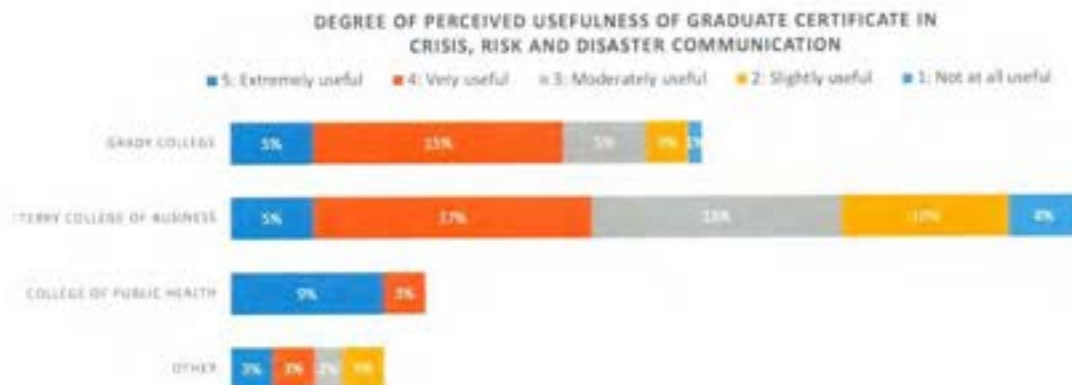
Students were asked to rate how interested they were in learning more about Crisis, Risk, and Disaster Communication. The question was measured with a 5-point scale ranging from *Not at all interested* (1) to *Extremely interested* (5). In their responses, 7 students (5.8%) indicated not at all interested, 15 (12.5%) students indicated slightly interested, 42 (35.0%) were moderately interested, 32 (26.7%) were very interested, and 24 (20.0%) were extremely interested. See Figure 1 for how degrees of interest are distributed across students from multiple colleges. Among the students who completed the survey, all the students from the College of Public Health indicated some degree of interest in learning more about Crisis, Risk, and Disaster Communication, 94.1% of students from Grady College indicated some degree of interest, and 93.4% of students from Terry College indicated some degree of interest.

Figure 1.



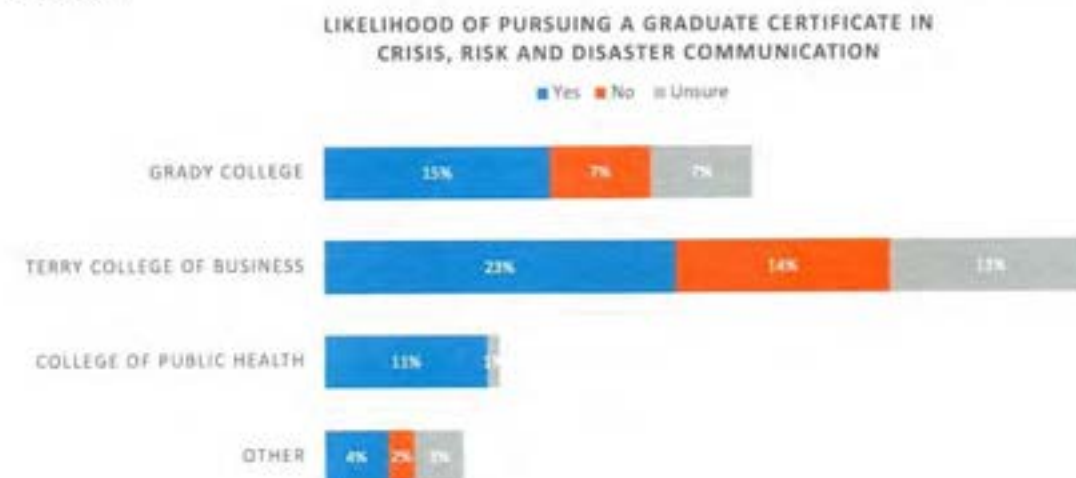
When it comes to the question “How useful do you think a Graduate Certificate in Crisis, Risk, and Disaster Communication would be for you, considering your interests and future career goals?” on a scale of 1 (*Not at all useful*) to 5 (*Extremely useful*), 6 (5.0%) students reported not at all useful, 18 (15.0%) reported slightly useful, 26 (21.7%) reported moderately useful, 44 (36.7%) indicated very useful, and 26 (21.7%) indicated extremely useful. See Figure 2 for how degrees of perceived usefulness of getting a Graduate Certificate in Crisis, Risk, and Disaster Communication are distributed across students from multiple colleges. Among the students who completed the survey, all the students from the College of Public Health indicated some degree of perceived usefulness in the certificate, 97.1% of students from Grady College indicated some degree of perceived usefulness, and 91.8% of students from Terry College indicated some degree of perceived usefulness.

Figure 2.



When asked about their likelihood of pursuing a Graduate Certificate in Crisis, Risk, and Disaster Communication, 64 (53.3%) students selected yes, 27 (22.5%) selected no, and 29 (24.2%) indicated unsure. See Figure 3 for how likelihood is distributed across students from multiple colleges. Among those who are likely pursue the graduate certificate, 43.8% (n = 28) students are from Terry College, followed by 28.1% (n = 18) from Grady College, 20.3% (n = 13) from College of Public Health, and 7.8% (n = 5) from other colleges.

Figure 3.



In the “open comments” section of the survey, multiple respondents indicated their strong interest in the program and/or explained why it would be attractive. Here are a few examples of the quotes:

- *“Crisis Communication is often at the center of Disaster Management and Public Health, so to have the opportunity to learn more about it as a certificate would be amazing. Thank you for creating this!”*
- *“I think it would be a really helpful thing for any job in public health. Currently I am taking a policy analysis elective to gain skills in that area. I think the same would be true for disaster communication because it isn’t necessarily my strong suit but it is a vital topic I need to learn about.”*

- *"Being an artist studying Disaster Management, art is one of the few 'universal languages' that can be understood by most people. Both risk and communication can be interpreted by art and if one has a solid understanding of the two, it would seem to be very beneficial when broadcasting to a wide audience when handling delicate/hazardous situations."*
- *"I think this is a great area to look into."*
- *"Def a good idea to have a certificate related to insurance considering the large role it is continuing to have and develop in the world and economy."*
- *"It seems like a great opportunity for those who want to work for big organizations/companies, especially those who have an interest in public health! ... it seems amazing."*
- *"I will not be able to participate in this certificate as I am a second year graduate student, but if I was here longer, I would definitely pursue it."*
- *"I think it'd be great if this certificate was open to all colleges, not just Grady, the College of Public Health, & Terry. I graduated from Grady & am now a grad student in SPLA, but I would still love to do this certificate! :)"*

Alumni Feedback

UGA alumni were also asked to provide feedback for this proposed certificate program from the perspective of a former student and rising leaders in industry and/or academia. A few examples:

"Conducting research in crisis communication was a powerful complement to my degrees. I am so grateful for the opportunity to deepen my understanding of strategic communication and organizational crises, both as a communicator and leader. Especially in modern media environments, swift and tactful navigation of crises is essential to organizational leadership, and I feel well prepared to enter the workforce with a solid foundation in this skillset." - Elise Karinshak, Schwarzman Scholar 2024 and UGA Foundation Fellow 2023

"The Graduate Certificate in Crisis, Risk and Disaster Communication would be an invaluable addition to UGA's roster of certificate programs. During my time at UGA, I was a CCTT intern, took Dr. Jin's crisis course, and took a Disaster Management class with Cham Dallas. These crisis-specific experiences prepared me to have a keener eye in spotting potential crises within a business, understand how to manage difficult conversations with stakeholders, and be in the habit of staying up to date on the current socio-political climate. In my career at a scaling, direct-to-consumer ecommerce start-up, I understand that businesses can be held under a microscope, with the cruciality of social media, focus on climate change/sustainability, and trends that people gravitate towards brands/businesses that reflect their personal values. Offering this certificate would bring a new wave of professionals that are passionate about & equipped with crisis communication skills as the need for it rises." – Sarah McRae, Brand Manager at Kitty and Vibe

"I do feel that as a PR professional this certificate and its associated courses would be beneficial for anyone to have as they pursue a career in communications. It's not the mastery - that comes with years of practice and doing - but the exposure to best practices, standards and strategic plan building around times of crisis and/or disaster in the classroom that will set students with this certificate apart as they will be more prepared to understand and react to these types of situations when the time comes in their careers." - Laura Burr, Assistant Account Executive, Arketi Group

"As a former PhD student who was deeply interested in the interdisciplinary research between health and risk communication through the lens of public relations, CCTT served as the perfect

arena to learn from the experts from all of these disciplines, get to share my research ideas and receive feedback from these experts. It was very helpful for me to prepare myself for the job market by sharing my research ideas in front of these experts. I fully support and am so excited for this graduate certificate program.” - Hyoyeun Jun, Ph.D., Assistant Professor/Mass Communication and Public Relations, Department of English, Communications and Media Salve Regina University

“As a former student, I believe that my experience in the field of public relations has been built upon foundational skills gained from the University of Georgia. I would have been thrilled to earn a graduate certificate in crisis, risk and disaster communication and know that it will help students acquire a competitive edge that can be used in the workplace.” - Jacob Smith, Junior Associate - Weber Shandwick

“As a recent graduate of Grady, having attended and experienced The Crisis Communications Think Tank, I have leaned on this crisis and risk curriculum in my new career. Having the skills to handle a crisis is so important to master whether or not you are in a crisis management field. In my position, with a focus on travel and tourism, I must track crises that are happening daily because this can affect client communications, pitching and even business success. The Graduate Certificate in Crisis Risk and Disaster Communications will be essential to graduate students when they enter the public relations job market. Dr. Jin sets the bar high to ensure students are prepared to handle any crisis and I would gladly sign up for this course as it would be very beneficial to me in my career today.” - Jordan McManus, Account Coordinator at Lou Hammond Group

“Grady College is where I had the best years in my life. During my Ph.D. studies, Grady College provided me the opportunity to fulfill my career aspirations and helped me to grow academically and professionally. I feel certain that Grady College offered me with the ideal mix of academic rigor, resources, and mentors expert in crisis, risk, and disaster communication of my interests. The Graduate Certificate in Crisis, Risk and Disaster Communication would give more students valuable opportunities to engage with Grady College's outstanding academic program and to pursue their interests under the guidance and tutelage of supportive faculty members. I would highly recommend this certificate program to anyone interested in pursuing a career in crisis, risk, and disaster communication.” - Sungsu Kim, Ph.D., Assistant Professor, Advertising & Public Relations School of Communication, Kookmin University, Seoul, South Korea

“As seen through world events over the past few years, issues and crises can happen at any moment and — in both my background as a research and work as a practitioner — a high level of interdisciplinary work is needed to develop efficient, effective, and ethical communication. The cross-industry knowledge the proposed graduate certificate would provide interested students—the chance to see issues and crises from variant perspectives—is a boon that would greatly benefit University of Georgia graduates and the university at large. Additionally, the integration of the academic/practitioner Crisis Communication Think Tank expertise further establishes the University of Georgia's Grady College as a leader in the communication field. Under Dr. Yan Jin's leadership, I have no doubt that this uniquely developed certificate will greatly benefit many parties for years to come.” - Taylor Voges, Ph.D., Research Consultant, Ketchum

b. Provide evidence that demand will be sufficient to sustain reasonable enrollment.

At Grady College, there is a strong demand among graduate students in advancing knowledge in crisis, risk, and disaster communication, as evidenced in (1) the increasing enrollment of Grady College's graduate risk communication and undergraduate crisis communication courses, and (2) the crisis, risk, and/or disaster focused theses and dissertations among M.A. and Ph.D. graduates since 2017-2018. In terms of annual enrollments among courses proposed to be included in this certificate (see "Program of Study" for details), the estimated enrollment numbers are robust, providing a comprehensive indication of strong pools of students who study in these core courses and are likely to consider the certificate program (e.g., MGMT 7011, Leasing Evolving Organizations - around 50; JRM 8170, Risk Communication - 15-20; DMAN 7100, Introduction to Disaster Management - 15-20; RMIN 7100, Fundamentals of Risk Management - 15-30). Additionally, there 15-30 students in the Grady-Public Health joint undergraduate certificate program (many taking crisis communication classes) in Strategic Health and Risk Communication, as well as over undergraduate and graduate students (from Grady College, Terry College and other units) actively participating in CCTT-affiliated Crisis Insights & Analytics Lab. Together, there is a strong pool in terms of student demand and for sufficiently recruiting interested students to participate in the graduate certificate in crisis, risk, and disaster communication.

The student survey indicated that 43.8% respondents from Terry College, 28.1% from Grady College, 20.3% from the College of Public Health, and another 7.8% from other colleges are interested in pursuing a Graduate Certificate in Crisis, Risk, and Disaster communication. This suggests many current and future graduate students would pursue this certificate. With an initial target enrollment of 30 graduate students per year, demand for the certificate is expected to be sufficient to sustain, and potentially increase, this projected enrollment in the program.

c. To what extent will minority student enrollments be greater than, less than, or equivalent to the proportion of minority students in the total student body?

Currently, the graduate students in the Grady College's graduate program are: White (57%), Black/African American (14%), Hispanic/Latino (6%), Asian (1.8%), and 3.2% identifying as Multi-ethnic. Most graduate students in the Grady College graduate program identify as female (74%).

For the primary program partners: Terry College's graduate program in Risk Management and Insurance (RMI) has approximately 25% minority students, and international students make up 50% of the enrollment. About half of the graduate students in the RMI graduate program identify as female (50%). The College of Public Health is the 2nd most diverse college at UGA, with 34% minority students, and international students making up 5% of the enrollment.

Given the composition of the three colleges collaborating on this Grady College-led graduate certificate, it is expected that minority student enrollments would be greater than or equivalent to the proportion of minority students in the total student body at UGA.

4. Program of Study

Provide a detailed program of study for the certificate program, including:

- a. Specific course prefixes, numbers, and titles*
- b. Identify any new courses created for this program*

Given the purpose of this graduate certificate to provide students with advanced knowledge, skills, and experience across the fields of crisis, risk, and disaster communication management research and practice, and its interdisciplinary nature of content and industry trends, this 12-credit graduate certificate will have its program of study constructed with two core Grady College courses (6 credits). Depending on a student's study of focus and/or career orientation (Business Track or Public Health Track), they will choose two other courses (6 credits) offered by the Terry College of Business or the College of Public Health.

Certificate Course Requirements (12 Credits/4 Courses)

Required Courses (6 hours)

- JRMC 8170, Risk Communication
- JRMC 8XXX, Crisis Communication and Strategic Conflict Management*

Choose one of the following tracks (6 hours)

- *Business Track:*
 - MGMT 7011, Leading Evolving Organizations
 - RMIN 7010, Fundamentals of Risk Management
or RMIN 7100, Fundamentals of Risk Management
or LEGL 7XXX, Legal Risk: Management, Strategy, and Communication**
- *Public Health Track:*
 - DMAN 7100, Introduction to Disaster Management
 - DMAN 7400, Public Health Crises and Disaster Management
or DMAN 7450, Geographic Information Systems (GIS) and Disasters
or DMAN 7650, Disaster Mental Health Overview

NOTES:

- (1) All the above are 3-credit graduate courses.
- (2) *New Course to be proposed; will be taught under JRMC 8160, Special Topics, until approved.
- (3) **New Course to be proposed; will be taught under LEGL 7500, Special Topics, until approved.
- (4) In all required courses, academia-industry interconnected learning-by-doing experiences (e.g., CCTT member lectures) and interdisciplinary collaborations (e.g., students from Grady College, Terry College, and College of Public Health collaborate on projects) will be incorporated.

5. Model Program and Accreditation

a. Identify any model programs, accepted disciplinary standards, and accepted curricular practices against which the proposed program could be judged. Evaluate the extent to which the proposed curriculum is consistent with these external points of reference and provide a rationale for significant inconsistencies and differences that may exist.

No peer or aspirational universities are currently operating any similar programs, although most institutions offer at least one crisis, risk, and/or disaster communication focused course(s). Based on program scanning in the U.S., the only graduate certificate program offered in similar content areas is at Wayne State University. However, the entire coursework of the 12-credit, online graduate certificate in "Risk and Crisis Communication" (<https://comm.wayne.edu/grad-certificates/riskcrisiscomm.php>) is solely offered by one unit (i.e., Department of Communication) and is primarily related to public health emergencies, lacking the business and risk management angle.

Besides adding “disaster” and “risk management and legal studies” to the important training and practice domains, what makes UGA’s proposed graduate certificate program distinct from Wayne State University’s program (and future programs other universities might develop) is the unique value grounded in UGA’s excellences in the following: (1) *Interdisciplinary*: Mass Communication, Business, Public Health; (2) *Interconnected*: CCTT as the model for academia-industry collaboration and partnerships; and (3) *International*: CCTT-International network across sectors and areas.

b. If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.

Program accreditation is not available for graduate crisis, risk, and/or disaster communication academic programs at this time.

6. Student Learning Outcomes

Describe the proposed learning outcomes for the certificate program.

Upon completion of the graduate certificate, students will:

1. Demonstrate an in-depth understanding of crisis, risk, and disaster in a competitive and complex media and information environment.
2. Demonstrate a strong command of major theories in crisis, risk, and disaster communication and management theories and how to apply them to describe, explain, and predict organizational and individual decision making and responses in times of crisis, risk, and disaster.
3. Understand the process of strategic conflict management in risk assessment and making strategic decisions in crisis and disaster responses, and how to inform internal and external stakeholders on complex and challenging issues.
4. Understand the role of advocacy, the ethical and legal guidelines, and the relationship management with media professionals and digital technology platforms.
5. Demonstrate effective and ethical crisis, risk, and disaster communication leadership and the capability to collaborate with organizations, communities, and stakeholders in different sectors, cultures and markets.

7. Assessment and Admissions

Describe how the learning outcomes for the program will be assessed. Describe the process and criteria for how students will be admitted to and retained in the program.

Successful completion of the proposed certificate is dependent on satisfactory completion of the required coursework as laid out in the 12-credit course map. Grades are assigned in each of the courses. A list of specific student learning outcomes will guide program administration in granting certificate status. All learning outcomes will be addressed in the core courses required for the graduate certificate. Performance in these courses will be used to assess attainment of these learning objectives. Additionally, students will be asked to complete a post-certificate assessment of the program through an anonymous online survey, gauging their subjective ratings of their knowledge gained in all learning objectives listed above.

This graduate certificate program will be administered by C. Richard Yarbrough in Crisis Communication Leadership and Director of the Crisis Communication Think Tank (CCTT) at Grady College of Journalism and Mass Communication, in collaboration with Head of the RMI program at Terry College and IDM director at College of Public Health. The Yarbrough Professor and CCTT

Director will oversee the program administration, including (1) distributing the call for applications to graduate students in the three colleges and other units as fit, (2) working with Associate Dean of Research and Graduate Studies and Grady College's Graduate Studies Program to administer the application and program completion processes, and (2) collaborating program heads in Terry College (RMI) and College of Public Health (IDM) in reviewing applications to discuss program admissions.

All potential participants in the graduate certificate program must be graduate students currently enrolled at UGA or be able to show documentation of their acceptance for coursework at UGA. The admission process requires an application packet containing (1) a resume including applicant's previous experience and learning in areas related to crisis, risk and/or disaster, (2) a written statement of goals and purposes, (3) writing example(s), and (4) list of three academic/industry references. In cases where there are more applicants than available positions, the graduate certificate administrators at Grady College and partners at Terry College and College of Public Health will jointly make decisions regarding the most acceptable applicants based on materials in the application packet. To select candidates from a competitive, qualified application pool, the following criteria will be used: (1) Demonstrated strong competencies in written communication in crisis, risk, and, or disaster related areas; (2) Evidence of strong interest in advancing knowledge and career in crisis, risk, and disaster communication research and/or practice; and (3) Professional experience or evidence of preparedness as demonstrated by internship experience and/or hands-on project success in crisis, risk, and/or disaster related areas. Applications will be taken throughout the academic year and students will be admitted throughout the academic year accordingly. Once applications have been received by the Grady College, all partnering program leaders and faculty representatives will meet to discuss application packets and admission decisions. Students will be notified of their acceptance status through email and provided with instructions for registering for classes.

Retention in the program will be encouraged by requiring graduate students to meet individually with the program director each fall semester to discuss their schedule for the upcoming year to make sure they are on-track to meet certificate requirements. The program director will meet with graduate advisors in all three colleges to ensure mutual understanding of certificate requirements. The graduate certificate program will host guest lectures and invited talks each semester, bringing thought leaders in the CCTT and affiliated network to provide certificate students opportunities for advanced crisis, risk, and disaster communication learning and ample networking opportunities with industry leaders and top scholars in the U.S. and globally.



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Terry College of Business

Insurance, Legal Studies & Real Estate

James M. Carson, Ph.D.

Amos Distinguished Professor of Risk Management and Insurance

Department Head & RMI Program Head

Yan Jin

C. Richard Yarbrough Professor in Crisis Communication Leadership

Grady College of Journalism and Mass Communication

University of Georgia

October 27, 2023

Dear Dr. Yan Jin:

I have reviewed the Grady College's proposal for the **Graduate Certificate Program in Crisis, Risk, and Disaster Communication**.

As Head of the Department of Insurance, Legal Studies, & Real Estate at the Terry College of Business, I am pleased to partner with you, the Grady College, and the College of Public Health on this important graduate certificate program.

I approve the use of the following Risk Management and Insurance (RMI) offered graduate courses listed under "Business Track":

RMIN 7010, Fundamentals of Risk Management

RMIN 7100, Fundamentals of Risk Management

LEGL 7XXX, Legal Risk: Management, Strategy, and Communication*

(*: New Course to be proposed; will be taught under LEGL 7500, Special Topics, until approved.)

I look forward to working with you in advancing excellence in teaching and training the next generation of leaders in crisis, risk, and disaster communication management.

Sincerely,

James M. Carson



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423 Correll Hall
600 South Lumpkin Street
Athens, Georgia 30602
TEL 706-542-3749
mpfarrer@uga.edu

Terry College of Business

Michael D. Pfarrer, Ph.D.
Associate Dean for Research and Executive Programs
C. Herman and Mary Virginia Terry Distinguished Chair of Business Administration

October 27, 2023

Dear Dr. Yan Jin:

I have reviewed the Grady College's proposal for the **Graduate Certificate Program in Crisis, Risk, and Disaster Communication**.

As Associate Dean for Research and Executive Programs at the Terry College of Business, I am pleased to partner with you, the Grady College, and the College of Public Health on this important graduate certificate program.

I approve the use of the following graduate course, offered by the Department of Management, listed under "Business Track":

MGMT 7011 - Leading Evolving Organizations

I look forward to working with you in advancing excellence in teaching and training the next generation of leaders in crisis, risk, and disaster communication management.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Pfarrer".

Michael D. Pfarrer, Ph.D.
Associate Dean for Research and Executive Programs
C. Herman and Mary Virginia Terry Distinguished Chair of Business Administration



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College of Public Health
Institute for Disaster Management

October 31, 2023

Dear Dr. Yan Jin:

I have reviewed the Grady College's proposal for the Graduate Certificate Program in Crisis, Risk, and Disaster Communication.

As Director of the Institute for Disaster Management (IDM) at the College of Public Health, I am pleased to partner with you, the Grady College, and Terry College on this important graduate certificate program.

I approve the use of the following IDM offered graduate courses listed under "Public Health Track":

DMAN 7100 Introduction to Disaster Management
DMAN 7400 - Public Health Crises and Disaster Management
DMAN 7450 - Geographic Information Systems (GIS) and Disasters
DMAN 7650 - Disaster Mental Health Overview

I look forward to working with you in advancing excellence in teaching and training the next generation of leaders in crisis, risk, and disaster communication management.

Sincerely,

Dr. Curt Harris

Curt Harris, PhD
Director | Associate Professor



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Grady College of Journalism and Mass Communication

Office of the Dean

December 6, 2023

Provost Jack Hu
Senior Vice President for Academic Affairs and Provost
University of Georgia
203 Administration Building
Athens, GA 30602-1651

Dear Provost Hu:

I have reviewed and enthusiastically support the proposed **Graduate Certificate Program in Crisis, Risk, and Disaster Communication** to be led by the Grady College's Crisis Communication Think Tank and administered at the Graduate Studies of the Grady College of Journalism and Mass Communication. The proposed program has been presented to and received unanimous support from the faculty of the Grady College of Journalism and Mass Communication at the Fall 2023 Grady College Faculty Meeting.

This distinct program, based on strong student demand, demonstrated industry needs, and the success of the Crisis Communication Think Tank model you have created and sustained, contributes to the Grady College's missions and goals to advance interdisciplinary collaboration in teaching, research and training at UGA (partnering with Terry College of Business and College of Public Health) and in deep and meaningful connections with the industry in the U.S. and globally.

I believe this new graduate certificate program will advance excellence in teaching and training the next generation of leaders in crisis, risk and disaster communication management.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles N. Davis".

Charles N. Davis
Dean, Grady College of Journalism and Mass Communication

Documentation of Approval and Notification

Proposal: Graduate Certificate in Crisis, Risk, and Disaster Communication

College: Grady College of Journalism and Mass Communication

Division: Graduate Studies

Proposed Effective Term: Fall 2024

Approval:

- Grady College of Journalism and Mass Communication Dean, Dr. Charles Davis, 12/6/2023

Use of Course Approvals:

- Grady College of Journalism and Mass Communication Associate Dean for Research and Graduate Studies, Dr. Glen Nowak, 10/27/2023
- Terry College of Business Risk Management and Insurance (RMI) Chair, Dr. James Carson, 10/27/2023
- College of Public Health Institute for Disaster Management (IDM) Director, Dr. Curt Harris, 10/31/2023



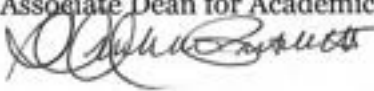
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Mary Frances Early College of Education

Office of Academic Programs

TO: Dr. Ron Walcott, Dean of the Graduate School
Fiona Liken, Associate Vice President for Instruction and Registrar

FROM: Dr. Stacey Neuharth-Pritchett, Senior Associate Dean for Academic Programs


DATE: December 7, 2023

RE: MED in Special Education – Proposal to offer Degree Online

Please find an attached a proposal to offer the MED in Special Education – General Curriculum area of emphasis.

The College of Education's Curriculum Committee approved this proposal on December 6, 2023.



**Mary Frances Early
College of Education**

*Department of Communication
Sciences and Special Education*

UNIVERSITY OF GEORGIA

570 Aderhold
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www.uga.edu

November 2, 2023

To Whom It May Concern:

The following proposal to offer the M.Ed. in Special Education-General Curriculum as an online degree program would increase the accessibility of an advanced degree in a critical shortage teacher certification area within the state of Georgia and beyond. By offering the degree online, the potential to reach a wider and more diverse group of students interested in an advance degree will increase.

In addition, since the creation of the B.S.ED/M.Ed. in Special Education-General Curriculum Double Dawg pathway enrollment in the M.Ed. program has increased from 1 in 2019 to 22 in 2022. The majority of coursework for this pathway was offered online with few courses offered on campus. By moving all coursework online, the opportunity to pursue the Double Dawg pathway becomes viable for currently enrolled online B.S.Ed. students.

Thank you for your consideration of this proposal to offer the M.Ed. in Special Education- General Curriculum as an online degree. We believe this will benefit current Special Educators in the state of Georgia and potentially nation-wide, currently enrolled students in the online B.S.Ed. program, and future students.

Sincerely,

Bethany Hamilton-Jones

Bethany Hamilton-Jones, Ph.D.
Clinical Professor and Department Head

PROPOSAL FOR AN ONLINE PROGRAM

Date: 10/23/23

College/School: Mary Frances Early College of Education

Department/Division: Communication Sciences and Special Education

Program (Major and Degree): Special Education, General Curriculum, Master of Education (MEd)

Will any approved areas of emphasis be offered under this major? Yes, the Dyslexia Endorsement is embedded within the program of study.

Proposed Effective Date: Summer 2024

The proposal for an online program must include a brief narrative that addresses the following points:

1. Assessment

The University of Georgia offers a 100% online BSED program in General Curriculum (GC). In addition, we offer a Double Dawgs program in GC. The majority of our BSED GC students would like to enroll in the Double Dawgs program but need to have an online MEd option to do so. In addition, many of our on-campus undergraduate students would like to have the option of teaching outside of the Athens area upon completion of the BSED and would like to complete the Double Dawg program online. Finally, an online MEd program would expand our reach and ability to attract non-local students to our program. Since the launch of our Dyslexia Endorsement program, which is 100% online, interest in our program has grown.

Over the last five years, enrollment in our MEd program has grown. We anticipate even greater growth if we can advertise and promote a 100% online MEd option. Enrollment data over the past five years:

- 2019 = 1
- 2020 = 8
- 2021 = 16
- 2022 = 22
- 2023 = 30

We currently have 14 BSED students who are applying for the MEd in General Curriculum for a summer 2024 start date.

2. Admission Requirements

All requirements for admission to the Online MEd General Curriculum program will be the same as those for the existing on-campus MEd in General Curriculum program. Specifically, all applicants will:

- Have earned, or will have earned, a bachelor's degree from an accredited institution before the date of enrollment at the University of Georgia.
- Have a minimum cumulative undergraduate GPA of 3.0 for all courses taken.

- [If a foreign applicant] Will have scored a minimum of 20 points each on the Speaking and Writing sections of the TOEFL with an overall minimum score of 80. Test scores must be within 5 years from the date of application.
- Submit a statement of purpose and resume/CV.
- Provide three letters of recommendation. [This requirement is waived if a Double Dawg applicant.]

3. Program Content

The basic curriculum will be the same for the online MEd program as it is for the on-campus MEd program in General Curriculum. The criteria for electives or substitutions for specific requirements will be equivalent online.

4. Student Support Services

Program faculty will provide online advising. Each online MEd student will be assigned a faculty advisor, and students will meet regularly with that advisor through the use of virtual meeting platforms. Enrolled students will have access to technology services and supports offered through the Office of Instructional Technology housed within the MFE COE. The MFE COE Office of Academic Programs will provide resources to assist online MEd students with career development. All enrolled students will have access to UGA's Office of Financial Aide and Student Care and Outreach. Students with documented disabilities can register and be assigned a counselor with the Disability Resource Center.

5. Resident Requirements

Online students MEd students will not have a residency requirement for the program.

6. Program Management

The Special Education Program Director, with the support of the staff-level Program Coordinator, will serve to maintain program processes and procedures. Additionally, Special Education faculty serving as advisors to students in the online program will provide support for program maintenance. Special Education faculty who are serving as instructors of online course offerings will maintain curricular and instructional quality. Monthly program meetings will allow faculty to collaborate and continuously evaluate program needs. An annual review of program Student Learning Objectives will allow faculty to further assess student success and program effectiveness.

The deadline for applying to the online MEd in General Curriculum Special Education is April 1st, and students will matriculate in the summer semester only. The duration of the 33-credit hour program will vary. Double Dawg students will have completed 12 of 33 required hours during their undergraduate programs and will take ~3 semesters to complete the program. Students completing the full 33-hour program will likely take 3-4 – 5 semesters to complete the program. The anticipated start semester is summer 2024. There is no duplicate program in this area.

**Program of Study
33 hours**

Core Courses (6 hours)

- _____ EDSE 7020E (3) Assessment of Dyslexia and Other Learning Disabilities (*fall*)
- _____ EDSE 7120E (3) Dyslexia and Other Learning Disabilities (*fall, spring, summer*)

Methods Courses (15 – 18 hours)

- _____ EDSE 7220E (3) Instruction of Students with High-Incidence Disabilities (*fall*)
- _____ EDSE 7150E (3) Designing Reading Interventions for Special Education (*fall, spr., summer*)
- _____ EDSE 7250E (3) Teaching Writing to Students with Disabilities (*spring*)
- _____ EDSE 7770E (3) Practicum in Intensive Reading Intervention (*summer*)
- _____ EDSE 7050E (3) Positive Behavior Intervention (*spring, summer*)

_____ *Elective (3)

[If your undergraduate degree was in special education, you will take an elective rather than complete 7460E.]

Research Courses (3 hours)

- _____ ERSH 6200E (3) Methods of Research in Education
- OR**
- _____ ERSH 6300E (3) Applied Statistical Methods in Education
- OR**
- _____ ERSH 7500E (3) Action Research

Applied Practice and Research Project (5 – 9 hours)

- _____ EDSE 7000E* (3) Masters Research
- _____ EDSE 7650E (3) Applied Project

*EDSE 7000E is typically taken the semester prior to EDSE 7650E to help students prepare for their Applied Projects.

Special Education Internship [If your undergraduate degree was NOT special education]

- _____ EDSE 7600E** (3) Special Topics in Special Education
- OR**
- _____ EDSE 7460E*** (3) Internship in Special Education

**Students should register for EDSE 7600E if they are currently teaching in their own classroom.

***Students should register for EDSE 7460E if they are not currently teaching in their own classroom.

Comprehensive Exam

All students will take the Comprehensive Exam during their final semester in the program.

7. Library and Laboratory Resources

Online UGA library resources already exist that are adequate to support this program.
No laboratory is needed.

8. Budget

There are no foreseeable start-up costs to establishing a fully online MED in General Curriculum Special Education as a counterpart to the existing on-campus MED in General Curriculum Special Education. The reason for this is that all

required courses in the existing on-campus MEd in General Curriculum Special Education are currently offered in an online format. New students entering the online MEd in General Curriculum Special Education program would register for the already offered online versions of those required courses. There are no projected expenses for the first cycle of students due to these factors. Additional costs that may be associated with future cycles of students would be dependent upon student enrollment. If future student enrollment exceeds the current capacity of existing courses, future costs would include funds for the hiring of part-time instructors to cover increased course demand.

9. Program Costs Assessed to Students

There are no costs to online students that go beyond those normally associated with the on-campus program.

10. E-Rate

No e-rate will charged.

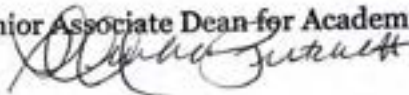


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Mary Frances Early College of Education
Office of Academic Programs

TO: Dr. Ron Walcott, Dean of the Graduate School
Fiona Liken, Associate Vice President for Instruction and Registrar

FROM: Dr. Stacey Neuharth-Pritchett, Senior Associate Dean for Academic Programs


DATE: December 7, 2023

RE: Proposal to offer the Graduate Certificate in Education Law and Policy Online

Please find attached a proposal to offer the Graduate Certificate in Education Law and Policy on online program.

The College of Education's Curriculum Committee approved this proposal on December 6, 2023.



Aderhold Hall
110 Carlton Street
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706-542-1414
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Mary Frances Early College of Education

November 29, 2023

Fiona Liken
Office of Instruction
Associate Vice President for Instruction and Registrar
102 Holmes Hunter
Athens, GA 30602, GA

The Department of Lifelong Education, Administration, and Policy is proposing to offer the Graduate Certificate in Education Law and Policy as an online program.

The faculty in the department and the program supports the offering of the graduate certificate online.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Roulston".

Kathryn J. Roulston
Department Head and Professor
Department of Lifelong Education, Administration, and Policy

Proposal: Online Option for the EDAP-Based Education Law and Policy Certificate

The University of Georgia

Date: October 30, 2023

College/School/Division: Mary Frances Early College of Education

Department: Lifelong Education, Administration, and Policy

Certificate: Interdisciplinary Certificate in Education Law and Policy

Major/Certification: Educational Administration and Policy

Proposed Start Date: Fall 2024

1. Needs Assessment

The Educational Administration & Policy (EDAP) faculty respectfully requests approval to offer the EDAP-based Education Law and Policy Certificate in an online format. No curricular changes are involved, only a change in format to better meet the current needs of students. The faculty has determined that offering the certificate program online would better serve our students. Further, we are currently losing students to competitors who offer similar online programs. To remain competitive, we must adapt to the changing needs of our students.

The Education Law and Policy Certificate program was initiated in 2013 to support education professionals in acquiring a working knowledge of relevant legal requirements; policy administration and improvement skills; and to generally support education professionals in acquiring and documenting knowledge and skills in the field of education law and policy. Education professionals with these skills are advantaged in competing for professional positions, and they are better prepared for success in practice. The primary purpose of this certificate program is to provide for unmet needs in professional development in the areas of education law-related knowledge, policy development, and administration. Students are increasingly requesting an online program, and the EDAP faculty agrees that an online format would best serve the needs of students.

All of the required courses are approved as online courses; all of the required courses have been successfully offered in an online format for many years; and no curricular changes are involved beyond a change in the program delivery format. This is solely a request to offer the existing program in an online format. The required courses are already offered in an online format.

2. Admission Requirements for the Education Law and Policy Certificate: To be considered for admission, prospective candidates must hold a bachelor's degree from an accredited college or university and must otherwise meet the requirements for admission to a graduate program at the University of Georgia. Students generally enroll in this certificate program as a supplemental program for a graduate degree. Students must submit a statement of purpose for seeking admission to the Education Law and Policy certificate program. Eligible candidates for

admission are further screened by faculty to determine whether they are likely to be academically successful in the program and whether the program is a good fit for their stated educational and professional objectives. Specifically, the admission process requires:

- (a) Completion and submission of an online application including applicable fees;
- (b) Cumulative grade point average for all previous undergraduate and graduate courses, with a preferred standard of a minimum of 3.25 on a 4-point scale;
- (c) A brief statement of purpose for study in the Education Law and Policy certificate program.

Admissions decisions are made on a continuous (fall, spring, and summer term) basis. No GRE or MAT scores are required. Standardized test scores are typically waived for graduate programs at the master's or specialist levels within the college. Although minimum and preferred requirements are outlined, applications are reviewed holistically, e.g., strengths in one area may mitigate relative weakness in another area. Students are classified as in-state or out-of-state based on University System of Georgia Board of Regents policy.

3. Program Content: Below is the program of study.

The Certificate in Education Law and Policy requires the successful completion of 15 total graduate credit-hours in the area of education law and policy, including:

- EDLP 8100e Introduction to Education Law and Policy (3 credit-hours);
- Specialization Electives in education law and/or policy (9 credit-hours);
- EDLP 9100e Research in Education Law and Policy (3 credit-hour seminar, including the completion and presentation of a capstone research/practice project).

EDLP 8100e provides students with an introduction to essential principles of education law and policy, and law and policy research, analysis, and writing skills necessary for success in the certificate program and in professional practice.

Specialization Electives in Education Law and Policy may be selected from a wide range of options including education law and policy related courses in the College of Education; Institute of Higher Education; School of Law; School of Public and Environmental Affairs; School of Social Work; School of Public Health; and other appropriate courses at the University of Georgia. Most EDLP certificate students will be completing the certificate in conjunction with a graduate degree from the University of Georgia. Specialization electives for the EDLP certificate may be completed as part of the degree program of study. These courses may be taken before or after admission to the certificate program, but students are encouraged to take EDLP 8100 as early as possible to maximize the educational and professional value of their studies.

EDLP 9100e provides students with support for completion of a capstone research/practice project and/or an externship in practice to bring a culminating focus to students' education law and policy studies and to prepare students for success in professional employment.

The course requirements and standards for this program are the same as for the current on-campus certificate program. The online option requires the same standards of academic excellence and rigor. Expectations for coursework include reading assigned materials; research, analysis, and writing; participation in class activities; passing scores on exams; and the successful completion and presentation of a capstone research project. All of the proposed required courses are offered in e-versions that have already been fully approved through university governance.

4. Student Support Services: After admission students meet individually with the certificate Program Coordinator to discuss the student’s educational and professional objectives; program options; and the planned program of study. Students are encouraged to develop a clear research focus and related area of professional expertise. Courses in this program are already part of an approved on-campus format certificate program based in EDAP. The existing support mechanisms for this program will continue with the online program. Matriculated students are made aware of university student support services (e.g., libraries, CAPS, career center, etc.).

5. Resident Requirements: Residence requirements for the online program are identical to those established for the on-campus certificate program.

6. Program Management: This program will be administered by faculty in the Department of Lifelong Education, Administration, and Policy. Day-to-day services are supported by a faculty Program Coordinator. All courses in the program are currently approved courses. Courses will be taught by full-time UGA faculty or vetted part-time instructors as necessary. Once established, the faculty hopes the program will attract, at a minimum, 10 new students per year, but the online platform will provide us with the capacity to admit and serve more students.

Role	Name	Email
Program Coordinator, Education Law and Policy Certificate Program	Dr. John Dayton	jdayton@uga.edu
Educational Administration and Policy Program Coordinator	Dr. Jami Berry, Clinical Associate Professor	jamiberry@uga.edu
Department Head, Lifelong Education, Administration, and Policy	Dr. Kathy Rolston	krolston@uga.edu

Admissions will be managed on a continuous basis. Student Learning Objectives for the online certificate program are reported within the UGA required processes and are already operationalized based on the current on-campus program. All courses are generally offered each year, but students may substitute a course that is of equal or higher value given the student’s unique educational and professional goals. The program can be completed at the learner’s pace, so there is not a time limit, except within the graduate school’s timeline requirements of six years before courses begin to expire.

Timetable for the first iteration of the online certificate program:

Spring-Summer 2024: Assess availability of and confirm existing faculty instructional support for the program. Pending approval, we will advertise and carry out admission procedures for Fall 2024 admissions.

Fall 2024: Begin offering the EDAP-based Education Law and Policy Certificate as an online program.

7. Library and Laboratory Resources: There are no laboratory requirements for the program. In terms of library access, students will have access to Galileo and GIL. Students will be required to meet the technology requirements necessary to use ELC and other necessary technologies as the program is designed to be online.

8. Budget: The online version will mirror the existing program. No new courses are required. No additional funding is required. When enrollment increases, separate sections of courses for students can be established and incorporated into instructional teaching loads or supported through part-time instructors as necessary. The proposed program will employ current library resources and does not anticipate additional fees in the form of library, laboratory, or other specialized facility resource requirements. We do not anticipate any startup costs for the proposed program, special costs for the completion of the first cycle of students, or any additional costs associated with future cycles of students.

Therefore, we submit this proposal with a \$0 budget.

9. Program Costs Assessed to Students: Costs for students to complete the Education Law and Policy Certificate program would be consistent with the established e-rate fee structure for 15 graduate hours, however, some of these hours may be from degree programs of study, reducing costs for students. The current cost per credit hour is \$629 for e-rate programs in the UGA College of Education. Instructors are encouraged to consider low-cost/no-cost textbook options.

10. Accreditation: The online Education Law and Policy Certificate will be subject to the same accreditation standards currently applied to the on-campus program, i.e., participation in college and university accreditation standards and procedures.

11. Application and Matriculation: Students will apply for admission for this program in the same way they would apply for on-campus programs. The only difference will be their stated intention to complete the program entirely online and confirmation that they have the technological capacity to participate in the program. Applications will be reviewed for initial matriculation in fall, spring, or summer.




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Mary Frances Early College of Education

Office of Academic Programs

TO: Dr. Ron Walcott, Dean of the Graduate School
Fiona Liken, Associate Vice President for Instruction and Registrar

FROM: Dr. Stacey Neuharth-Pritchett, Senior Associate Dean for Academic Programs


DATE: December 7, 2023

RE: MED in Educational Administration and Policy- Areas of Emphasis

Please find attached two proposals to create the following two official areas of emphasis under the online MED in Educational Administration and Policy.

- Academic Track
- Tier I leadership Certification Track

The College of Education's Curriculum Committee approved this proposal on December 6, 2023.

PROPOSAL FOR AN AREA OF EMPHASIS

Date: 11/29/2023

School/College: Mary Frances Early College of Education

Department/Division: Lifelong Education, Administration, and Policy

Program (Major and Degree): Educational Administration and Policy, MED

Which campus(es) will offer this program? Athens and Online

Proposed Effective Date: Fall 2024

If major has more than one area of emphasis, submit all areas of emphasis under one major together. A course may appear in more than one area of emphasis, but each area of emphasis should have a distinct focus.

1. Area of Emphasis Title: Tier I leadership Certification Track

2. Area of Emphasis Description:

Include prefixes, numbers, and titles of required courses, number of credit hours required; residency requirements (if any); and grade requirements (if any). Graduate Areas of Emphasis may refer to groups of courses if necessary.

Tier I Masters of Education (MEd) in Educational Administration and Policy Program of Study
Certification: School Leadership

Course Number	Core Course Name	Number of Credit Hours
EDAP 7040(E)	Education Law and Ethical Leadership	3
EDAP 7060(E)	Policies, Systems, and Resources for Educational Enterprises	3
EDAP 7801(E)	Clinical Practices in Educational Leadership I	3
EDAP 8115(E)	Educational Leadership for Student Success	3
EDAP 8130(E)	Leadership in a Diverse Society	3
EDAP 7802(E)	Clinical Practices in Educational Leadership II	3
EDAP 7803(E)	Clinical Practices in Educational Leadership III	3
EDAP 8390(E)	School, Family, and Community Connections	3
EDAP 7030(E)	Developing, Supporting, & Sustaining a Positive Learning Community	3
EDAP 7600(E)	Research and Data Analysis for Professional Practice	3
EDAP 7020(E)	Instructional Leadership for School Improvement	3
EDAP 7050(E)	Talent Management for Continuous Improvement	3
Total Credit Hours for Area of Emphasis		36

Residence requirements for the online program are identical to those established for the current M. Ed. degree.

3. Major Requirements:

Attach a list of requirements for the major. For undergraduate programs, attach a copy of the major requirements from the Bulletin. For graduate programs, provide a list of general requirements for the major.

Admission Requirements for Tier I M.Ed.: Prospective candidates must, at a minimum, hold a Bachelor's degree from an accredited college or university and a Clear Renewable Georgia Professional Standards Commission Certification at Level 4. Admission decisions for this program are made by the program faculty. Criteria and standards for evaluating applicants' suitability include:

- (a) Completion and submission of an online application, including fee;
- (b) Cumulative grade point average for all previous undergraduate and graduate courses, with a preferred standard of a minimum of 3.25 on a 4-point scale;
- (c) Two letters of recommendation (one from a current school administrator);
- (d) Preferred minimum of 3 years experience in an educational setting, and;
- (e) A brief statement of purpose consistent with the intended focus of the program. This statement must include the following: (1) academic and/or career goals and (2) why you want a Tier 1 leadership certificate?

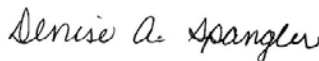
No GRE or MAT scores are required. Standardized test scores are typically waived for graduate programs at the masters or specialist level within the college.

Admissions decisions are made on a continuous (fall, spring, and summer term) basis. Although minimum and preferred requirements are outlined, applications are reviewed holistically. That is, if an applicant does not achieve minimum or preferred standards, such as those related to the grade point average, the candidate automatically might not be eliminated. Additionally, minimum and preferred requirements are not explicitly competitive – meeting the minimum requirements stated above normally results in admission. For this program, students must certify that they have access to a computer with a high-speed Internet connection. Students are classified as in-state or out-of-state based on University System of Georgia Board of Regents policy.

4. Approvals:



Department Head



Dean of School/College

Dean of Graduate School

PROPOSAL FOR AN AREA OF EMPHASIS

Date: 11/29/2023

School/College: Mary Frances Early College of Education

Department/Division: Lifelong Education, Administration, and Policy

Program (Major and Degree): Educational Administration and Policy, MED

Which campus(es) will offer this program? Athens and Online

Proposed Effective Date: Fall 2024

If major has more than one area of emphasis, submit all areas of emphasis under one major together. A course may appear in more than one area of emphasis, but each area of emphasis should have a distinct focus.

1. Area of Emphasis Title: Academic Track

2. Area of Emphasis Description:

Include prefixes, numbers, and titles of required courses, number of credit hours required; residency requirements (if any); and grade requirements (if any). Graduate Areas of Emphasis may refer to groups of courses if necessary.

Academic Track Master of Education (M. Ed.) in Educational Administration and Policy Program of Study

Course Number	Core Course Name	Number of Credit Hours
EDAP 7040e	Education Law & Ethical Leadership	3
EDAP 8210e	Educational Policy Analysis	3
EDAP 7030e	Developing a Positive Learning Community	3
EDAP 7050e	Talent Management for Continuous Improvement	3
EDAP 7060e	Policies, Systems, and Resources for Educational Enterprises	3
EDAP 7600e	Data Analysis for Practitioners	3
EDAP 7650e	Applied Project in Educational Administration and Policy	3
15 hours of electives courses to be selected with advisor		15
Total Credit Hours for Area of Emphasis		36

Residence requirements for the online program are identical to those established for the current M. Ed. degree.

3. Major Requirements:

Attach a list of requirements for the major. For undergraduate programs, attach a copy of the major requirements from the Bulletin. For graduate programs, provide a list of general requirements for the major.

Admission Requirements for the EDAP Academic Track M. Ed.: To be considered for admission, prospective candidates must hold a bachelor's degree from an accredited college or university and must otherwise meet the requirements for admission to a graduate program at the University of Georgia. Students must submit a statement of purpose for seeking admission to the EDAP Academic Track M. Ed. Eligible candidates for admission are further screened by faculty to determine whether they are likely to be academically successful in the program and whether the EDAP Academic Track M. Ed. is a good fit for their stated educational and professional objectives. Specifically, the admission process requires:

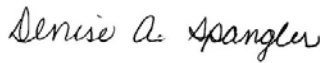
- (a) Completion and submission of an online application including applicable fees;
- (b) Cumulative grade point average for all previous undergraduate and graduate courses, with a preferred standard of a minimum of 3.25 on a 4-point scale;
- (c) Two letters of recommendation; and
- (d) A brief statement of purpose for study in the EDAP Academic Track M. Ed.

Admissions decisions are made on a continuous (fall, spring, and summer term) basis. No GRE or MAT scores are required. Standardized test scores are typically waived for graduate programs at the master's or specialist levels within the college. Although minimum and preferred requirements are outlined, applications are reviewed holistically, e.g., strengths in one area may mitigate relative weakness in another area. Students are classified as in-state or out-of-state based on University System of Georgia Board of Regents policy.

4. Approvals:



Department Head



Dean of School/College

Dean of Graduate School

Awarding Doctoral Degrees – University Faculty

Current Policy:

No member of the faculty of the University of Georgia above the rank of instructor will be awarded a doctoral degree by the University.

Rationale to change:

Occasionally, university faculty may seek a doctoral degree in a new discipline as part of their ongoing professional development. Changing this policy would permit UGA faculty to continue their graduate education in new areas.

This policy would still prohibit earning a doctoral degree from the unit in which they work to avoid conflicts of interest. However, faculty above the rank of instructor are already required to hold a terminal degree in their academic discipline, so it is unlikely that a faculty member would seek a degree in the discipline in which they are employed.

Information in consultation with OFA in response to questions raised in 1/17/24 GC meeting:

Instructor Rank

Instructor is listed as the entry level position for the University in the tenure track guidelines and requires a master's degree instead of a terminal degree. Ranks above Instructor include lecturers (all ranks), tenure-stream faculty (all ranks), clinical faculty (all ranks), and the non-tenure track categories of research scientist, librarian, academic professional.

Note that PSO faculty ranks are similar to tenure track ranks but do not require a terminal degree; nor do Admin A positions – so these are faculty positions above the rank of instructor who may seek a doctoral degree at UGA, but it's very unlikely that they're employed in an academic unit that would conflict with this proposed policy.

Full-time, contract-eligible instructors

UGA has full-time, contract-eligible instructors. There have been several of late that were converted to the rank of Lecturer due to the limitation on length of service for that rank and/or other factors (like acquiring a terminal degree).

.....

Proposed Policy (same as 1/17/24):

No full-time, contract-eligible member of the faculty of the University of Georgia above the rank of instructor may be awarded a doctoral degree earned in their academic unit of employment.