Request for Authorization to Establish
Master (M) in Advanced Architectural Studies
CIP 04.0902
North Carolina State University

I. Program Highlights

- North Carolina State University (NC State) proposes the establishment of a Master of Advanced Architectural Studies (MAAS).
- The program is currently offered by NC State as a post-professional track under the existing Master of Architecture (M.Arch.) degree that does not lead to licensure.
- The National Architectural Accrediting Board (NAAB) is requiring all institutions to discontinue the use of "Master of Architecture" for any program that is not accredited and does not lead to licensure.
- NC State University will continue to offer the Master of Architecture degree as a professionally accredited program that leads to licensure.
- Approval of this program change will not result in any increase in faculty, courses, or costs. It simply changes the administrative structure from a concentration to a degree.

II. Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** The University of North Carolina at Charlotte (UNCC) offers both the accredited professional Master of Architecture (M.Arch., CIP 04.0902) and the Master of Science in Architecture (MS, CIP 04.0902) that is not NAAB accredited and does not lead to licensure.

2. **Relation to Campus Distinctiveness and Mission.** The MAAS program supports the UNC System and NC State University missions and strategic plans in several ways. NC State University's mission statement focuses on both research and teaching excellence, highlighting the creation and application of knowledge through collaboration and interdisciplinary efforts. As a synergistic program focusing on the development of specialized research for application in the field of design, the MAAS program supports the goals of educational innovation, engaging research, interdisciplinary approaches, organizational excellence, and fostering partnerships.

3. **Student Demand.** The MAAS program will attract and invite a diverse applicant pool. While the NC State School of Architecture is one of two professional architecture schools in North Carolina, MAAS will be unique. According to the National Architectural Accrediting Board (NAAB), "there are over 150 NAAB-accredited programs offered by more than 120 institutions of higher learning in the U.S." Of these, very few offer a program of this type, and none with its mix of specializations. The robust design and

entrepreneurial culture of the Research Triangle Area will draw a significant pool of applicants.

4. **Potential for Unnecessary Duplication.** NC State and UNC Charlotte are the two UNC System institutions that offer professional and non-professional/post-professional degree programs in architecture. Like NC State, UNC Charlotte was required to comply with the National Architectural Accrediting Board restricting use of the term "Master of Architecture" to professional degree programs. In response, UNC Charlotte created a non-professional Master of Science in Architecture (M.S.) with two concentrations: (1) Digital Technologies and Material Systems, and (2) Design Science and Building Systems. The NC State proposed MAAS program differs in focus and aligns with their existing graduate concentrations and certificates in Public Interest Design, Energy and Technology, City Design, and History and Theory. Students would focus their courses and research on one of these topics.

5. **Employment Opportunities for Graduates.** The MAAS program will offer students a rich environment to pursue meaningful research questions to help shape future design practice. Graduates of the program will be prepared to advance the profession of architecture locally, nationally, and internationally with enhanced research and design skills. Alternatively, students graduating with this degree will be well prepared to apply for teaching positions in schools of architecture and design. This program's benefits to the public will be profound, as students graduating from this program will be prepared to advance the technical and artistic qualities of the built environment through ethical practice that prioritizes human wellbeing and ecological sustainability.

6. **Faculty Quality and Number.** No new faculty are required for the Master of Advanced Architecture Studies program over the first four years. Teaching responsibilities will be absorbed by existing faculty. This does not represent additional workload for existing faculty members because the Master of Advanced Architectural Studies program is replacing the current Master of Architecture (Track 2) program. NC State has fifteen tenure-line faculty in the School of Architecture that will be directly involved in the program.

7. **Availability of Campus Resources (library, space, etc.)** In addition to NC State University's two main libraries (James B. Hunt on Centennial Campus and D.H. Hill on Main Campus), the College of Design has a branch Library (Harrye B. Lyons Design Library in Brooks Hall) that is operated the NC State University Libraries. The Harry B. Lyons Design Library is located on the College of Design campus and will be accessible to all students in the Master of Advanced Architectural Studies program. The Design Library has sufficient holdings, resources, and services to serve the Master of Advanced Architectural Studies program without diminishing existing services to other College of Design or NC State University programs.

The Harrye B. Lyons Design Libraries collection includes books and journals that focus on architecture, landscape architecture, graphic design, industrial design, and art and design. In addition, the library has a collection of approximately 150,000 digital images that are available through Luna Insight 6.3.

In addition to the Design Library, the D.H. Library Special Collections Resource Center contains archives of numerous celebrated architects from the region, including Phil Freelon, George Matsumoto, Henry Kamphoefner, and Milton Small. Located centrally in Brooks Hall, the library is comprised of a reading room, book stacks, shelved journal, a lightroom, staff offices, and a printing/scanning area. Library staff are specially trained to assist design students in their research.

Existing College of Design facilities are adequate for the Master of Advanced Architectural Studies program. No new facilities are required. The program will be accommodated within the College of Design buildings, including Brooks Hall, Leazar Hall, and Kamphoefner Hall. Collectively, these buildings on the north portion of NC State's main campus contain faculty, staff, and administrative offices, classrooms, conference rooms, lecture halls, a 160-person auditorium, the Harrye B. Lyons Design Library, the William Bayley IT lab and computer clusters, a materials lab (a shop for working with various materials, including wood, metals, concrete, and plastics), a digital prototyping lab, PhD workspaces, and a project gallery and exhibition space.

The existing facilities will adequately serve the Master of Advanced Architectural Studies program without compromising other College of Design programs. These facilities will be adequate at the outset of the program and should remain sufficient for the next decade, assuming routine maintenance and normal technology upgrades continue.

8. **Relevant Lower-level and Cognate Programs.** NC State's School of Architecture offers a full complement of degrees, including the accredited, professional Bachelor of Architecture (M.Arch.) and Master of Architecture (M.Arch.). The proposed MAAS program is currently offered as a track within the existing Master of Architecture degree.

9. **Impact on Access and Affordability.** As the program is currently offered as a track within the existing Master of Architecture degree, there are no anticipated changes in access or affordability.

No change to the approved tuition, tuition differential, or fees from the existing Master of Architecture program is requested. Tuition and fees at the fall 2021 and spring 2022 full-time (9+ credit hour) rates are as follows:

Full-Time 2021-22 Graduate Tuition and Fees per Semester (In Dollars)

Category	**Resident**	**Non-Resident**
Tuition	4,547.50	13,541.00
Tuition Differential	700.00	700.00

Mandatory Fees (Student Activities, Health Services, Education & Technology, Campus Safety, Debt Service, ASG)	1180.30	1180.30
Special Fees	6.00	6.00
Application Fee	85.00	85.00

10. **Expected Quality.** The Master of Advanced Architectural Studies will reside within the School of Architecture and the College of Design at NC State University. The existing MAAS program and School of Architecture are both widely recognized in the field for their academic quality. The MAAS is an innovative and collaborative degree program that will provide students with opportunities to engage current and emerging trends in the architecture profession through specialized research. MAAS students will focus on research in one of four distinct areas already established as graduate certificates and concentrations in the NC State University School of Architecture: Public Interest Design (PID), City Design (CD), Energy and Technology (ET), and History and Theory (HT). The MAAS program will bring together cohorts in a collaborative setting, employing Design Thinking methods to address grand challenges in the built environment. The MAAS program will draw on existing faculty expertise and resources to enhance NC State's land-grant mission, its strong commitment to community engagement, and its legacy of technological innovation.

    The School of Architecture has a Director of Graduate Programs (DGP) who will assist with recruiting, admissions, and advising students in the program. The College of Design employs a Graduate Student Services Coordinator who provides support for admissions, communication with the Graduate School, record keeping, and enrollment.

    The NC State University Graduate School and its Dean provide supervision of all graduate programs. The Graduate school sets policies and provides oversight for each degree program. The Graduate School and its staff are responsible for admissions, program assessment, appointing Graduate Faculty, reviewing student Plans of Work, outlining and enforcing procedures, publishing the Graduate Handbook and Catalog, providing resources to students, encouraging academic and research excellence, and reviewing and approving new programs.

11. **Feasibility of Collaborative Program.** This program is currently offered by NC State as a track under the existing Master of Architecture degree. Operations and collaborations will therefore continue in a manner similar to previous years.

12. **Other Considerations.** None.

III. Summary of Review Processes

1. **Campus Review Process and Feedback.** The proposal was reviewed by NC State's faculty, department head, faculty, graduate school, CFO, provost, and chancellor. Approval and support were provided at all levels.

2. **UNC System Office Review Process and Feedback.** Throughout the review process, NC State provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support the statements made.

IV. Recommendation

It is recommended that the Board of Governors approve North Carolina State University's request to establish the Master of Advanced Architectural Studies (CIP 04.0902) effective fall 2021.

Request for Authorization to Establish
PhD in Computer Science
CIP 11.0701
University of North Carolina at Greensboro

I. Program Highlights

- The University of North Carolina at Greensboro (UNCG) proposes the establishment of a Doctor of Philosophy (Ph.D.) in Computer Science.
- The proposed Ph.D. program builds upon UNCG's historic strengths in the traditional arts and sciences, including biology, chemistry, geography, kinesiology, mathematics and statistics, nanoscience, and more.
- The proposed program would be located on-campus and would not require a tuition differential or program-specific fee.

II. Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** Within the UNC System, North Carolina A&T State University, North Carolina State University, and the University of North Carolina at Chapel Hill currently offer an in-person Ph.D. in Computer Science (CIP 11.0701). The University of North Carolina at Charlotte offers a related in-person Ph.D. in Computing and Information Systems (CIP 11.0101). Duke University also offers a Ph.D. in Computer Science (CIP 11.0701).

2. **Relation to Campus Distinctiveness and Mission.** The proposed Ph.D. program in Computer Science supports UNCG's role as a well-established research university with a strong arts and sciences background. UNCG stresses collaborative scholarship and creative activity, encouraging engagement across the disciplines. This proposed Ph.D. program would leverage the unique history and focus of UNCG in incorporating liberal arts and technology. As an engaged research university, UNCG is prepared to develop a program with strong basic and applied research components.

3. **Student Demand.** UNCG anticipates significant student demand for the proposed Ph.D. in Computer Science. For the 2020-21 academic year, nearly 1,000 students applied for admission across the five related doctoral programs in North Carolina, but only 261 were admitted. While all of these students would not be qualified for a doctoral program, conversations with program directors at the other institutions indicated that many of those students were qualified, but the programs were at capacity. As such, there are potentially hundreds of students who wish to pursue a doctoral program in Computer Science in North Carolina who might consider this program.

In a similar fashion, demand for UNCG's existing computer science programs (BS and MS) have grown dramatically in the past five years, with a 79% increase in undergraduate enrollment and a 54% increase in graduate enrollment. UNCG is projecting a "steady-state" enrollment level of roughly 25 students in the program.

4. **Potential for Unnecessary Duplication.** The proposed program is designed to complement, but not compete, with the other existing Ph.D. Computer Science programs in North Carolina. While there are five related doctoral programs offered in North Carolina in Computer Science, the UNCG program would have a data-centric focus, with primary specializations in bioinformatics, data analysis, data science, natural language processing, and network analysis. In particular, these areas of focus are discreet from and complement those in place at NC A&T State University, the program most geographically proximate to UNCG. Additionally, the UNC System Graduate Council, which is comprised of the graduate deans or designees from each constituent institution, voted unanimously to support the creation of this program.

5. **Employment Opportunities for Graduates.** External estimates of employment opportunities were secured from the Taulbee Report, EAB, and Economic Modeling Specialists, Inc. (EMSI). UNCG also consulted with Burning Glass Labor/Insight and United States Bureau of Labor Statistic reports. All of these external sources demonstrate a strong labor market for graduates of the proposed Ph.D. program. The EAB analysis noted that "…increasing state and national demand for doctoral-level computer science professionals indicates opportunity for program development at UNCG." National data demonstrated a consistent and significant demand for doctoral-level computer science professionals. The EMSI Labor Market Analytics project a 20.6% increase in demand for computer scientist doctorates in North Carolina between 2019 and 2029, with median earnings of $88,200 per year. The EMSI analysis of related job postings in North Carolina shows a posting intensity (number of job postings per unique job) of 6:1, higher than the regional average, and indicative of a situation in which demand exceeds supply. NC Tower data further demonstrates the wage premium for graduates from these programs, with 2015-16 graduates of the other UNC System Ph.D. programs in Computer Science earning on average $122,790 three years after graduation.

   Graduates of doctoral programs in computer science are also likely to pursue full-time positions in industry, with nearly two out of three graduate's securing employment in this area, and roughly one of three securing an academic position. North Carolina remains a hub for computer and technology development as evidenced by the recent announcement that Apple will invest $1 billion and establish a campus in Research Triangle Park. The ripple effects of this investment and related growth will only increase demand for computer science doctorates in the years to come.

6. **Faculty Quality and Number.** UNCG has a strong cadre of computer science faculty that has doubled in size, moving from 6 to 12 between 2008 and 2017. Those faculty lead strong research programs supported by regular external funding and producing

publications in leading journals and conferences. Recent faculty additions have targeted interdisciplinary research, with a specific focus on data science and related areas. UNCG expects additional growth in students and faculty as computer science becomes a centerpiece of cross-disciplinary information processing for health sciences, natural sciences, social sciences, and the humanities.

7. **Availability of Campus Resources (library, space, etc.)** UNCG libraries provide access to adequate physical and online resources to all students, faculty, and staff. The collections consist of a variety of formats, including more than 1.2 million print monographs, over 620,500 federal and state documents, more than 300,000 microfilms, and 49,000 audio units. The libraries provide access to more than 50,000 serial titles, of which over 45,000 are electronic journals. In recent years, the number of electronic books has increased substantially, with over 370,000 accessible made available to campus constituents. Specific library resources in support of the program include ACM Digital Library and SpringerLink, two leading publishers of computer science resources. There is also a full-time science librarian, who serves as a liaison between the academic department and the university library.

   The Department of Computer Science currently has sufficient facilities to support the existing BS and MS program, with general and special purpose laboratory facilities available. UNCG may elect to reposition programs and faculty in the future contingent upon growth in the undergraduate and graduate computer science programs. UNCG also provides significant on-campus computing labs, network connectivity, and technological support for general-purpose and research computing. Computer Science research labs include advanced computing system, dedicated locally-managed storage, special purpose systems (including a Lambda DevBox specialized for machine learning tasks) and dedicated system administration staff that manage these platforms.

8. **Relevant Lower-level and Cognate Programs.** UNCG has offered high-quality bachelor's and master's degrees in computer science for many years, with the BS in Computer Science having been started in 1991, and the MS in Computer Science since 1998. The Department of Computer Science became a stand-alone unit (separate from mathematical sciences) since 2006. Enrollment has been incredibly strong in these existing programs, with undergraduate enrollment increasing from 146 to 481 and graduate enrollment increasing from 27 to 40 between 2008 and 2017.

9. **Impact on Access and Affordability.** The proposed program expands access to North Carolina students wishing to pursue research in the high-demand field of computer science. UNCG has been committed to improving access, enhancing student success, and improving affordability, as demonstrated by their recent accomplishments in achieving UNC System Strategic Plan goals. This program would expand access to a high-quality doctoral program in the growing computer science field in North Carolina. As a research doctorate, UNCG is planning for all students enrolled in the program to receive financial support in the form of stipends and tuition waivers. The level of those benefits is designed

to ensure that any student that has enters with a MS or has completed the equivalent level of coursework in the program will not require any student loans to cover their costs. Additionally, no tuition differential or program specific fee is requested for this program.

Full-Time 2021-22 Graduate Tuition and Fees per Semester (In Dollars)

Category	**Resident**	**Non-Resident**
Tuition	2,609.50	9,468.50
Tuition Differential	--	--
Mandatory Fees (Athletics, Student Activities, Health Services, Education & Technology, Campus Security, Debt Service, ASG)	1,464.00	1,464.00
Special Fees	--	--
Application Fee	65.00	65.00

10. **Expected Quality.** UNCG will build upon their successful BS and MS programs in Computer Science in developing this proposed Ph.D. program. The existing research infrastructure and graduate school administration is also prepared to help facilitate the introduction of the Ph.D. program, with policies and procedures related to student advisory committees, dissertation committees, and research activities in place. The doctoral curriculum has been designed to accommodate students entering with either a BS or a MS in Computer Science, with the number of required credits varying dependent upon prior academic experience.

    Additionally, all degree programs at UNCG undergo annual assessment and review, coordinated by UNCG's Office of Assessment, Accreditation, and Academic Program Planning, and the Student Learning Enhancement Committee, which consists of faculty from across the university. The Department of Computer Science has significant experience with program and student learning assessment through both the UNCG assessment process and active engagement with ABET, the accrediting body for undergraduate computer science programs.

11. **Feasibility of Collaborative Program.** The proposed program is designed to complement the existing doctoral computer science programs offered in North Carolina, as described in greater detail earlier in the document. Ongoing conversations have taken place between UNCG and NC A&T regarding ways to partner and support their complementary programs. The Greater Greensboro Consortium allows students to easily take courses across the institutions, and collaborative research projects and grant applications are expected. Furthermore, a number of UNCG Computer Science faculty members have ongoing relationships with colleagues in the other Ph.D. programs in the state.

12. **Other Considerations.** None.

III. Summary of Review Processes

1. **Campus Review Process and Feedback.** The proposal was reviewed by UNCG's faculty, department head, graduate curriculum committee, college dean, graduate dean, CFO, provost, and chancellor. Approval and support were provided at all levels.

2. **UNC System Office Review Process and Feedback.** Throughout the review process, UNCG provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support the statements made. UNCG also received feedback and comments from other constituent institutions as well as from scholars from institutions outside the state through the external feedback process and incorporated those perspectives into their proposal.

IV. Recommendation

It is recommended that the Board of Governors approve the University of North Carolina at Greensboro's request to establish the Doctor of Philosophy in Computer Science (CIP 11.0701) to enroll students starting fall 2022.

UNC System: Delegated Academic Program Actions

Mode of Delivery Changes

	Institution	Degree	Program Title	CIP	Mode	Date
1.	ASU	BS	Middle Grades Education	13.1203	Online	12/04/2020
2.	ASU	BSBA	Supply Chain Management	52.0203	Online	03/26/2021
3.	UNC-CH	MSA	School Administration	13.0409	Online	05/03/2021
4.	UNCC	DNP	Doctor of Nursing Practice	51.3818	Online	02/15/2021
5.	UNCC	MA	Spanish	16.0905	Online	03/26/2021
6.	UNCC	BA	Sociology	45.1101	Online	04/05/2021
7.	UNCC	MBA	Business Administration	52.0201	Online	05/03/2021
8.	UNCG	DNP	Doctor of Nursing Practice	51.3818	Online	02/05/2021
9.	UNCG	BSN	Bachelor of Science in Nursing	51.3801	Online	03/05/2021
10.	UNCG	BS	Accounting	52.0301	Online	03/16/2021
11.	UNCG	BS	Finance	52.0801	Online	03/16/2021
12.	UNCG	BS	Hospitality and Tourism Management	52.0901	Online	03/16/2021

Instructional Site Discontinuations

	Institution	Degree	Program Title	CIP	Mode	Date
1.	UNCG	EDS	Specialist in Education	13.0401	On Campus	12/04/2020

CIP, Degree, and Title Changes

	Order	Institution	Degree	Program Title	CIP	Date
1.	Old	ASU	BS	History, Social Studies Education	13.1328	03/26/2021
1.	New	ASU	BS	History/Social Studies Education	13.1328	

	Order	Institution	Degree	Program Title	CIP	Date
2.	Old	ECU	MS	Counselor Education	13.1101	02/05/2021
2.	New	ECU	MS	Counselor Education	51.1504	

	Order	Institution	Degree	Program Title	CIP	Date
3.	Old	FSU	BA	Intelligence Studies	44.0401	05/10/2021
3.	New	FSU	BA	Intelligence Studies	29.0202	

	Order	Institution	Degree	Program Title	CIP	Date
4.	Old	NCSU	M	Accounting	52.0301	02/15/2021
4.	New	NCSU	M	Accounting	52.1301	

	Order	Institution	Degree	Program Title	CIP	Date
5.	Old	UNC-CH	BA	Psychology	42.0101	03/26/2021
5.	New	UNC-CH	BA	Psychology	30.0701	

	Order	Institution	Degree	Program Title	CIP	Date
6.	Old	UNC-CH	BS	Psychology	42.0101	03/26/2021
6.	New	UNC-CH	BS	Psychology	30.0701	

	Order	Institution	Degree	Program Title	CIP	Date
7.	Old	UNC-CH	MA	Psychology	42.0101	03/26/2021
7.	New	UNC-CH	MA	Psychology	30.0701	

	Order	Institution	Degree	Program Title	CIP	Date
8.	Old	UNC-CH	PhD	Psychology	42.0101	03/26/2021
8.	New	UNC-CH	PhD	Psychology	30.0701	

	Order	Institution	Degree	Program Title	CIP	Date
9.	Old	UNCC	BS	Exercise Science	31.0505	04/05/2021
9.	New	UNCC	BS	Exercise Science	26.0908	

	Order	Institution	Degree	Program Title	CIP	Date
10.	Old	UNCG	BS	Sustainable Tourism and Hospitality	52.0901	03/16/2021
10.	New	UNCG	BS	Hospitality and Tourism Management	52.0901	

	Order	Institution	Degree	Program Title	CIP	Date
11.	Old	UNCG	BS	Marketing	52.0201	03/16/2021
11.	New	UNCG	BS	Marketing	52.1401	

	Order	Institution	Degree	Program Title	CIP	Date
12.	Old	UNCW	BA	Environmental Studies	03.0103	05/10/2021
12.	New	UNCW	BA	Environmental Sciences	03.0104	

	Order	Institution	Degree	Program Title	CIP	Date
13.	Old	UNCW	PhD	Marine Biology	26.1302	02/01/2021

13.	New	UNCW	PhD	Integrative, Comparative, and Marine Biology	26.9999	

	Order	**Institution**	**Degree**	**Program Title**	**CIP**	**Date**
14.	Old	WCU	BS	Hospitality Tourism Management	52.0901	05/10/2021
14.	New	WCU	BSBA	Hospitality Tourism Management	52.0901	

	Order	**Institution**	**Degree**	**Program Title**	**CIP**	**Date**
15.	Old	WCU	MST	Technology	15.0612	05/10/2021
15.	New	WCU	MSET	Engineering Technology	15.0000	

Specialty Code Changes

	Institution	**Degree**	**Program Title**	**CIP**	**Date**
1.	FSU	MAT	Master of Arts in Teaching	13.1299	05/03/2021
2.	FSU	BS	Birth-Kindergarten	13.1210	05/04/2021
3.	NCA&T	MAED	Reading Education	13.1315	12/02/2020
4.	UNCC	MAT	Master of Arts in Teaching	13.1299	05/03/2021
5.	UNCG	MAT	Master of Arts in Teaching	13.1299	02/05/2021
6.	UNCG	MED	Special Education: General Curriculum	13.1001	05/03/2021
7.	UNCP	BS	Mathematics	27.0101	12/02/2020
8.	UNCP	MSW	Master of Social Work	44.0701	02/17/2021
9.	UNCP	MSA	School Administration	13.0409	02/17/2021