University of North Carolina at Charlotte

Interim Progress Report for Year Five

Instructions and Template

November 30, 2021

Contents

1. INSTRUCTIONS AND TEMPLATE GUIDELINES

Purpose

Continuing accreditation is subject to the submission of interim progress reports at defined intervals of 2 years and 5 years after an eight-year term of continuing accreditation is approved.

This narrative report, supported by documentation, covers three areas:
1. The program's progress in addressing not-met Conditions and Student Performance Criteria (SPC) from the Interim Progress Report Year 2 review.
2. Changes or Planned Changes in the Program.
3. Summary of Preparations for Adapting to 2020 NAAB Conditions.

Supporting Documentation

1. The narrative should describe in detail all changes in the program made in response to not-met Conditions and Student Performance Criteria, including detailed descriptions of changes to the curriculum that have been made in response to not-met SPC that were identified in the review of the Interim Progress Report Year 2. Identify any specific outcomes expected to student performance. Attach new or revised annotated syllabi identifying changes for required courses that address unmet SPC.
2. Evidence of student work is only required to address deficiencies in the following cases: (1) If there are any SPCs that have not been met for two consecutive visits; (2) If there are three not-met SPCs in the same realm in the last visit.

    - Provide three examples of minimum-pass work for each deficiency and submit student work evidence to the NAAB in electronic format. (Refer to the "Guidelines for Submitting Digital Content in IPRs" for the required format and file organization.)

    - All student work evidence must be labeled and clearly annotated so that each example cross-references the specific SPC being evaluated and shows compliance with that SPC.

3. Provide additional information that may be of interest to the NAAB team at the next accreditation visit.

Outcomes

IPRs are reviewed by a panel of three: one current NAAB director, one former NAAB director, and one experienced team chair.[1] The panel may make one of two recommendations to the Board regarding the interim report:
1. Accept the 5 yr. Interim Progress Report as having corrected deficiencies identified in the Interim Progress Report Year 2. The annual statistical report (see Section 9 of the 2015 Procedures) is still required.
2. Reject the interim report as having not corrected deficiencies or demonstrated substantial progress toward addressing deficiencies and advance the next accreditation sequence by at least one calendar year, thereby shortening the term of accreditation. In such cases, the chief academic officer of the institution will be notified and a copy of the decision sent to the program administrator. A schedule will be determined so that the program has at least six months to prepare an Architecture Program Report. The annual statistical report (see Section 9 of the 2015 Procedures) is still required.

Deadline and Contacts

IPRs are due on November 30. They shall be submitted through the NAAB's Annual Report System (ARS). As described in Section 10 of the 2015 NAAB Procedures for Accreditation "…the program will be assessed a fine of $100.00 per calendar day until the IPR is submitted." If the IPR is not received by

[1] The team chair will not have participated in the visiting team during the year in which the previous decision on a term of accreditation was made.

January 15 the program will automatically receive Outcome 2 described above. Email questions to accreditation@naab.org.

Instructions

1. **Reports shall be succinct and are limited to 40 pages/20 MBs, including supporting documentation.**
2. Type all responses in the designated text areas.
3. Reports must be submitted as a single PDF following the template format. Pages should be numbered.
4. Supporting documentation should be included in the body of the report.
5. Remove the #4 “Requirements for the Use of Digital Content in Interim Progress Reports” pages before submitting the interim progress report.

2. EXECUTIVE SUMMARY OF THE TWO MOST RECENT NAAB VISITS: 2016 and 2010

Conditions Not Met

2016 VTR	2010 VTR
None	None

Student Performance Criteria Not Met

2016 VTR	2010 VTR
B.2 Site Design	13.14. Accessibility
B.4 Technical Documentation	13.25. Construction Cost Control
B.6 Environmental Systems	
D.4 Legal Responsibilities	

3. TEMPLATE

Interim Progress Report Year 5

University of North Carolina at Charlotte
School of Architecture
Bachelor of Architecture (preprofessional degree + 30 undergraduate credit hours)
Master of Architecture
Track I (non-pre professional degree + 96 graduate credit hours)
Track II (preprofessional degree + 60 graduate credit hours)
Track AS (advanced standing)
(preprofessional degree from UNC Charlotte + 40 graduate credit hours)
Year of the previous visit: 2016

Please update contact information as necessary since the last APR was submitted.

Chief administrator for the academic unit in which the program is located:

Name: Blaine Brownell
Title: Director and Professor
Email Address: bbrownell@uncc.edu
Physical Address: UNC Charlotte School of Architecture, Storrs Hall, 9201 University City Blvd, Charlotte NC 28223

Any questions pertaining to this submission will be directed to the chief administrator for the academic unit in which the program is located.

Chief academic officer for the Institution:

Name: Joan Lorden
Title: Provost
Email Address: Joan.Lorden@uncc.edu
Physical Address: UNC Charlotte, 9201 University City Blvd, Charlotte NC 28223

I. Progress in Addressing Not-Met Conditions and Student Performance Criteria

a. Progress in Addressing Not-Met Conditions

University of North Carolina at Charlotte, 2021 Response: N/A

b. Progress in Addressing Not-Met Student Performance Criteria

B.2 Site Design

2016 Team Assessment: Evidence of student achievement at the prescribed level was not found in the areas of topography, ecology, and soil.

University of North Carolina at Charlotte, 2018 Response: Site design is integral to core design studios in the undergraduate and graduate programs. Issues related to site and context, building-ground relationships, landscape, topography and soil, slope and water run-off were given greater focus, including coordination with ARCH 4301/5301 (Materials and Assembly) taken simultaneously; an additional assignment in structural systems was added to address soils.

Topography and Ecology: assignments in ARCH 2101 (2nd yr Fall Studio-Undergraduate)and ARCH 6101 (1styr FallStudio –Graduate) demonstrate student ability in site and topography manipulation such as cut and fill, site ecology, and implementing sustainable strategies such as bio-swales, runoff management, and plant management to alleviate cooling and heating loads. Coordinating these assignments with ARCH 4301/5301(Materials and Assembly).

Soil: new assignment in ARCH 4304/5304 (Structural Systems–Undergraduate and Graduate) that addresses soil exploration including Soil Boring Logs, Atterberg Limits, and other soil properties. This includes a visit to the EPIC Building on campus for students to become more familiar with soil mechanics and properties of soils. Soil Mechanics Lab tests such as the Proctor Test and Split Spoon Sampler provide better understanding of soils and implications on foundation systems.

University of North Carolina at Charlotte, 2021 Response: Since our 2018 report, the curriculum committee decided that topography and ecology are best addressed at a more advanced level than the introductory M.Arch studio. Soil properties continue to be addressed in ARCH 4304/5304 Structural Systems, as indicated in the 2018 report.

Topography and Ecology: Assignments in ARCH 7103 (Graduate Integrated Studio) demonstrate student ability in site design, protecting natural vegetation/ biodiversity and grading site for appropriate drainage/stormwater management and rainwater collection. In addition, they enable students in designing appropriate building foundations that transfer the structural loads from a building into the ground including the insulation against the frost line and underground drainage pipe against groundwater seepage.

Soil: In ARCH 4304/5304 (Structural Systems–Undergraduate and Graduate), soils are discussed from a structural point of view. The angle of repose of soil is addressed with respect to lateral soil pressure on a retaining wall. Students learn to identify the range of bearing pressures of different soils and implications on foundation types, as well as resonance that may occur in a seismic event if the period of a soil is similar to the fundamental period of vibration of a structure.

B.4 Technical Documentation

2016 Team Assessment: Evidence of student achievement was not found at the prescribed level for outline specifications.

University of North Carolina at Charlotte, 2018 Response: In the fall of 2016, the SoA hired Prof. Marc Manack, AIA -a new tenure-track faculty member to teach Professional Practice. Prof. Manack has extensive professional experience, as well as past experience teaching in Professional Practice at the University of Arkansas. He engages a number of professional firms in his course, and his student course evaluations to date are excellent. Outline Specifications: the CSI Master Format was added to ARCH 4206/5206 (Professional Practice–Undergraduate and Graduate) and includes a rigorous outline of specifications that demonstrate students' ability to apply outline specifications through a Table of Contents that closely adheres to CSI Specifications.

University of North Carolina at Charlotte, 2021 Response: As described in the 2018 report, Prof. Marc Manack has taught the Professional Practice course, in which he addresses outline specifications.

Outline Specifications: In ARCH 4206/5206 (Professional Practice–Undergraduate and Graduate), outline specifications are covered in a dedicated course lecture about construction documents and specifications where students are introduced to the types, structure, and development of specifications. To apply this knowledge students are asked to review specifications and develop a table of contents for a previously completed studio project. Students are also quizzed on the distinctions between types of specifications.

B.6 Environmental Systems

2016 Team Assessment: Evidence of student achievement at the prescribed level was not found in student work prepared with respect to indoor air quality, acoustics, and lighting systems.

University of North Carolina at Charlotte, 2018 Response: SoA'sBuilding Technology (BT) faculty who teach an introductory course in environmental principles and an advanced course in building systems integration reviewed their syllabi, course lectures and notes, and developed new assignments in order to address an improved understanding of indoor air quality, acoustics and lighting systems.

Indoor Air Quality: new assignment in ARCH 4302/5302 (Environmental Principles–Undergraduate and Graduate) that demonstrates student's ability to evidence the appropriate type and use of Air Handling Units, High Efficiency Particulate Air (HEPA) filters and maintenance therein -for controlling common indoor pollutants in order to reduce risk of health concerns, including irritation of eyes, nose, throat, headaches, dizziness and fatigue in the near term and respiratory disease in the long term.

Acoustics: introduction of a case study assignment focused on acoustics in ARCH 4302/5302 (Environmental Principles–Undergraduate and Graduate), addressing the physical properties and qualities of a room or environment that determines how sound is transmitted; addressing noise control, sonics, vibration, reflection, absorption, and distinctive architectural(spatial and material)features for speech, video, music, etc.

Lighting Systems: new case study assignment focused on lighting systems in ARCH 4305/5305 (Building Systems Integration–Undergraduate and Graduate). Introducing students to concepts and strategies of luminous design integration and lumen method (ref. IESNA Lighting Handbook) in order to calculate light levels in a room, including consideration of reflectance and the following light loss factors: lamp lumen depreciation, ballast factor, dirt appreciation and room surface appreciation.

University of North Carolina at Charlotte, 2021 Response: Since the 2018 report, the School of Architecture hired assistant professor Liz McCormick, a tenure-track faculty member with expertise

in environmental building technology, who now teaches Building Systems Integration. This course addresses indoor air quality and

Indoor Air Quality: In ARCH 5305: Building Systems Integration, the second assignment asks students to consider several aspects of their fresh air approach - (1) how much fresh air are you considering and why? and (2) how are you providing it? This assignment demonstrates the students' ability to provide evidence of the appropriate type of air handling system in the context of human health and wellbeing as well as heat recovery principles. Lab 5 addresses the energy implications (EUI) associated with enhanced ventilation (beyond code minimum). The emphasis of these two tasks is to articulate ways that buildings not only keep us from becoming unhealthy (sick building syndrome) but also make the occupants well.

Acoustics: In ARCH 4302/5302 (Environmental Principles–Undergraduate and Graduate), Acoustical design is introduced in a lecture, and in the assignment, students are asked to choose a room and study its acoustics quality. There are two major parts involved, Reverberation Time (RT) calculation and Ray-diagramming. In the first, the students are asked to estimate the reverberation time of the room using the Sabine equation. The assignment is designed to give students an understanding of the factors that influence the reverberation time in the room, which include the volume of the room and the material selection. In the second, the students use Ray diagramming to analyze the effectiveness of the ceiling and wall shaping as well as the locations of materials inside the room to enhance sounds from the sound source and to prevent any acoustical defects, such as echoes.

Lighting Systems: In ARCH 4302/5302 (Environmental Principles–Undergraduate and Graduate), students are introduced to daylighting and electrical lighting concepts. The students are asked to use the modified lumen method to determine the number of fixtures needed to illuminate a room of their choice to 50 fc. The room must have a window. Students diagram how they would lay out the electric lighting to complement daylight in the room. In the second part of the assignment, students are asked to find at least two fixture options for the ambient/general illumination layer that they identified in their preliminary lighting layout and test the effectiveness of the two fixtures using the Visual Interior Tool.

II. Changes or Planned Changes in the Program

Please report such changes as the following: faculty retirement/succession planning; administration changes (dean, department chair, provost); changes in enrollment (increases, decreases, new external pressures); new opportunities for collaboration; changes in financial resources (increases, decreases, external pressures); significant changes in educational approach or philosophy; changes in physical resources (e.g., deferred maintenance, new building planned, cancellation of plans for new building).

University of North Carolina at Charlotte, 2021 Response:

New Administrators

2022	*currently searching*	Provost, University of North Carolina at Charlotte
2020	Dr. Sharon L Gaber	Chancellor, University of North Carolina at Charlotte
	Dr. Jose Gamez	Associate Dean for Research, College of Arts + Architecture
	Blaine Brownell	Director, School of Architecture
2019	Brook Muller	Dean, College of Arts + Architecture
	Dr. Emily Makas	Associate Director, School of Architecture
	Dr. Mona Azarbayjani	Graduate Program Director, School of Architecture

New Faculty

2022	*currently searching*	Assistant Professor, Architecture
	currently searching	Assistant Professor, Architectural History/Preservation
2021	Sekou Cooke	Associate Professor and Director, Urban Design
2020	David Costanza	Assistant Professor, Architecture (has left UNCC)
2019	Liz McCormick	Assistant Professor, Architecture
2018	Dr. Lidia Klein	Assistant Professor, Architectural History
2017	Dimitris Papanikolaou	Assistant Professor, Architecture and Software Information Systems
	Catty Zhang	Assistant Professor, Architecture
2016	Nadia Anderson	Associate Professor, Architecture and Urban Design
	Rachel Dickey	Assistant Professor, Architecture
	Marc Manack	Associate Professor, Architecture

Faculty Retirements

2021	Ken Lambla	Professor Emeritus of Architecture
2020	Michael Swisher	Associate Professor Emeritus of Architecture
2017	John Nelson	Associate Professor Emeritus of Architecture
	Dale Brentrup	Professor Emeritus of Architecture

New Collaboration Opportunities

Articulation Agreement	Central Piedmont Community College (in development for Fall 2023 official start)
Scholarship in Practice	BB&M
	C Design
	Clark Nexsen
	Stantec - Urban Design Diversity
iPAL internship	ADW Architects (2020)
	Boomerang (2017)
	Clark Nexson (2018)
	HDR (2017)
	Housing Studio (2017)
	LS3P (2016, 2020, 2021)
	Little Diversified Architectural Consulting (2016, 2020)
	Morris.Berg Architects (2017, 2020)
	Northwood Ravin (2017)
	Perkins Eastman (2018)

Sponsored Studios	Progressive AE (2019) Wright McCraw Beyer Architects (2020) LS3P (Fall 2021) list additional firms / semesters here or delete section

Enrollment Changes

Bachelor of Arts in Architecture	high yield and increased enrollment in Fall 2021. will adjust the acceptance rate for fall 2022. anticipating growth in transfer students entering in the 3rd year due to in-progress articulation agreement with local community college
Bachelor of Architecture	no longer offering. graduated final class in 2021. enrollment declined in the final two years offered.
Master of Architecture AS	introduced in 2019, enrollment has increased as students chose this option over the BArch
Master of Architecture II	steady enrollment of about 20 to 25 students
Master of Architecture I	increased enrollment in Fall 2021, plan to maintain growth at 12 to 15 students per year (was previously 8 to 12 students)

Physical & Financial Resource Changes

add content here or delete section

III. Summary of Preparations for Adapting to 2020 NAAB Conditions

Please provide a brief description of actions taken or plans for adapting your curriculum/ classes to engage the 2020 Conditions.

University of North Carolina at Charlotte, 2021 Response:

Over the course of 2021 the School of Architecture was engaged in a campus-wide strategic planning initiative. We were mindful of the new 2020 NAAB conditions as we drafted our new strategic plan; however, felt it was important to complete this broader planning process before initiating change relative to accreditation.

We devoted a fall 2021 faculty meeting to introducing the new 2020 NAAB Conditions at a schematic level as well as outlining our strategy for addressing these and planning for our next accreditation visit. In addition, multiple faculty members have attended training webinars organized by NAAB and ACSA to familiarize themselves in more detail with outcomes-based assessment and the revised Conditions for Accreditation.

We have begun forming a task force of faculty that will spend the Spring 2022 semester investigating and mapping how and where we meet the revised student and program criteria. This will give us the 2022-23 and 2023-24 academic years to gather data, with time to make assessments and revisions in the summer in between. Thus, in Fall 2024, we can assemble our APR in preparation for the NAAB Accreditation visit in Spring 2025.

We are excited about the expanded opportunities for demonstrating the shared values and program criteria and will be providing documentation including, but of course not limited to, our new strategic plan, lecture series, exhibitions, and student organization opportunities.

Our preliminary approach for addressing the new assessment-based student criteria is to revise the Student Learning Outcomes (SLOs) that we already use for tracking how certain specific target items are taught and learned in the School of Architecture. We plan to study and adjust our SLOs in Spring 2022 to ensure alignment with both the NAAB 2020 criteria and our 2021 Strategic Plan priorities. So for example, through our SLO 5, we have for years measured Environmental Systems understanding acquired by our Master of Architecture students. In the past, our SLO 5 has specifically focused on three categories: heating, cooling, and lighting. We will revisit those categories, the wording of those SLOs, and the specific assignments used to measure each to ensure that we are meeting the NAAB 2020 Student Criteria 1 Health, Safety, and Welfare and Criteria 4 Technical Knowledge.

IV. Appendix

include revised curricula, syllabi, and one-page CVs or bios of new administrators and faculty members; syllabi should reference which NAAB SPC a course addresses. Provide three examples of low-pass student work for SPCs in the following cases--if there are any SPCs that have not been met for two consecutive visits, or If there are three not-met SPCs in the same realm in the last visit--as required in the Instructions.

University of North Carolina at Charlotte, 2021 Update: Must include student work evidence for B.2, B.4, and B.6:

One-page bios of new administrators and faculty members

NEW ADMINISTRATORS

Dr. Sharon Gaber, Chancellor, UNC Charlotte

Sharon L. Gaber, Ph.D., is the fifth chancellor of the University of North Carolina at Charlotte. Known as North Carolina's urban research university, it leverages its location in the state's largest city to offer internationally competitive programs of research and creative activity, exemplary undergraduate, graduate, and professional programs, and a focused set of community engagement initiatives. UNC Charlotte maintains a particular commitment to addressing the cultural, economic, educational, environmental, health, and social needs of the greater Charlotte region.

With a student population of more than 30,000 (due to a 33% increase in enrollment since 2009), it is the fastest-growing — and second-largest — institution in the 17-member University of North Carolina System. Its diverse student body, 37% of whom are first-generation college students, comes from 47 states and 105 countries.

A native of Southern California, Gaber earned an A.B. in Economics and Urban Studies from Occidental College, an M.P.L. in Urban Planning from the University of Southern California, and a Ph.D. in City & Regional Planning from Cornell University.

Prior to her arrival at UNC Charlotte, Gaber served for five years as the President of the University of Toledo, where she was nationally recognized for her efforts to increase enrollment, improve graduation and retention rates, keep education affordable, increase research funding, improve connection to the surrounding metro region and make the campus environment diverse and inclusive. Earlier in her career, she served as provost and vice chancellor for academic affairs at the University of Arkansas. She has also served as an interim provost at Auburn University and a faculty member and administrator at the University of Nebraska-Lincoln.

An academic with a background in city and regional planning, Gaber has written numerous articles on regional and urban planning, public policy and the social dynamics that affect community decision-making. She is also co-author of a book on planning research methods. She was recently named to the Business North Carolina 2021 Power List, and in 2020 she received the YWCA Northwest Ohio Milestone Award for women's leadership. She was designated by Education Dive as one of five higher education leaders to watch in 2018 and beyond. Deeply engaged in community and regional activities, she has served on multiple NCAA committees, and she was recently appointed to the Executive Committee of Conference USA. She is a member of the Charlotte Executive Leadership Council, Women Executives, and the International Women's Forum – Carolinas.

Officially the first woman to serve as chancellor of UNC Charlotte, Gaber follows the trail blazed by founding educator Bonnie Cone, who led the institution from 1946- 1966 through several stages of growth.

Dr. Gaber is the proud mother of three adult children.

Brook Muller, Dean, College of Arts + Architecture

Brook Muller is the dean of the College of Arts + Architecture, coming to UNC Charlotte from the University of Oregon, where he was a professor in the Department of Architecture and director of the University of Oregon Portland Architecture Program. His leadership experience includes appointments as acting dean and interim dean of the School of Architecture and Allied Arts (now called College of Design), as well as associate dean for Academic Affairs for the school. He co-authored and directed the interdisciplinary Graduate Certificate in Ecological Design. In addition, he co-authored concurrent degrees: Master of Business Administration and Master of Architecture, and Master of Community and Regional Planning and Master of Architectural Design.

Prior to joining the faculty at the University of Oregon in 2004, Muller was the director of an environmental sustainability program and an assistant professor at California Polytechnic State University, where he received the Wesley Ward Outstanding Teaching Award in 2002.

Muller entered academia from practice. After earning a Master of Architecture (M. Arch.) from the University of Oregon, he worked with Behnisch and Partners Architects in Stuttgart, Germany. Among other professional pursuits, he served as project co-leader on the design of the IBN Dutch Institute for Forestry and Nature Research, a European Union pilot project for sustainable design.

Muller's research and practice focus on how site scale works of architecture can support broader scale ecological processes and the design implications of resilient urban water systems. He has written articles that have appeared in Environmental Philosophy, Nature + Culture, Journal of Landscape and Urban Planning, The Pluralist: Official Journal of the Society for the Advancement of American Philosophy, and Enquiry: The ARCC Journal of Architectural Research.

Dean Muller is author of Ecology and the Architectural Imagination (Routledge, 2014), and his latest book project, Blue Architectures: Water, Design, and Environmental Futures, will be published by The University of Texas Press. In the past five years, he has worked on projects marrying water infrastructure, architecture, and urban design in Egypt, Tanzania, and the Madeira Islands.

Dr. Jose Gamez, Associate Dean for Research, College of Arts + Architecture

José Gámez is a Professor of Architecture and Urban Design in the School of Architecture at UNC Charlotte. He has served as Interim Associate Dean for Research and Graduate Programs in the College of Arts and Architecture and as the Interim Director and as the Associate Director of the School of Architecture. He has also been a Research Fellow with both UNC Charlotte's Institute for Social Capital and Urban Institute. He served as a Provost's Faculty Fellow and he was the recipient of the 2015 Provost's Award for Community Engagement. His research explores questions of culture in architecture and urbanism through action-based research and public scholarship. His work has been published in Aztlán: A Journal of Chicano Studies, Places: A Forum of Environmental Design, The Journal of Urbanism, The Journal of Applied Geography, and

The Plan Journal. He is also the co-editor of the books Rio de Janeiro: Urban Expansion and Environment and Vertical Urbanism: Designing Compact Cities in China and he has contributed essays to books such as Writing Urbanism: A Design Reader, Expanding Architecture: Design as Activism, Charlotte, NC: The Global Rise of a New South City, and Latino Urbanism: The Politics of Planning, Policy and Redevelopment. His design contributions to the work of assemblageSTUDIO have been featured in New Museums: Contemporary Museum Architecture Around the World, Models: Architecture and the Miniature and Architectural Record. Prior to joining the faculty at UNC Charlotte, he taught at Portland State University and the University of Nevada at Las Vegas. He received his Bachelor of Environmental Design from Texas A&M, his Master of Architecture from UC Berkeley, and his Ph.D. in Architecture and Urban Design from the University of California at Los Angeles.

Blaine Brownell, Director, School of Architecture

Blaine Brownell is Professor and Director of the School of Architecture at the University of North Carolina at Charlotte, and an architect and researcher of emergent materials and applications. He earned a B.A. in Architecture with a Certificate in East Asian Studies at Princeton University in 1992, and a Master in Architecture from Rice University in 1998.

After an early career practicing at architecture firms including NBBJ, Atelier FCJZ, and Takenaka, Brownell was awarded a Fulbright scholarship to conduct research at the Tokyo University of Science Department of Architecture (2006-07), followed by a visiting professorship in sustainable design at the University of Michigan Taubman College of Architecture and Urban Planning (2007-08). He spent the next twelve years at the University of Minnesota School of Architecture (2008-20), where he co-directed the Master of Science in Architecture—Sustainable Design program for four years, was director of graduate studies for five years, and served as interim head for one year prior to joining the University of North Carolina at Charlotte.

An architect dedicated to materials research and education, Brownell has influenced architects' capacity to evaluate emerging materials and employ new material applications that are technologically, environmentally, and aesthetically innovative. New materials bring about unprecedented changes in design, manufacturing, and construction, yet methods to assess such materials are limited. Brownell has contributed scholarship on emerging material technologies and trends to deepen our understanding of how new materials transform the functional capacity, design potential, and environmental performance of buildings. His four-volume Transmaterial series (2006, 2008, 2010, 2017) catalogs materials that have the most significant potential to redefine our physical environment. The Royal Institute of British Architects nominated Transmaterial for an international book award in 2007, and the American Society of Landscape Architects selected Transmaterial Next as one of the Best Books of 2017.

Another fundamental aspect of material knowledge concerns methods: how may materials be applied to achieve innovative outcomes in architecture? Brownell has written several books on this topic, including Material Strategies: Innovative Applications in Architecture (2012), which evaluates the creative implementation of various materials in significant architectural works. Matter in the Floating World: Conversations with Leading Japanese Architects and Designers (2011) encapsulates the material concepts, methods, and philosophies of some of today's most renowned Japanese practitioners. Hypernatural: Architecture's New Relationship with Nature (2015), co-authored with Marc Swackhamer, explores the transforming connections between building materials and natural systems. Brownell also writes a regular column on innovative material applications called "Mind & Matter" for Architect , the official publication of the American Institute of Architects. Since 2009, he has written over 700 online articles for Architect.

Brownell's eight books have sold over 50,000 copies and received over 50 reviews in publications including Nature, The Wall Street Journal, Smithsonian, and The Architect's Newspaper. He has contributed nine chapters to books on architecture and has written over 100 print articles for publications including The New York Times, The London Times, A+U, and Metropolis.

Brownell was a founding member of the Advanced Materials Council and has been an advisor to the National Institute of Building Sciences, the U.S. Department of Homeland Security, the Mayo Clinic, Steelcase, 3M, Panasonic, and the Danish Architecture Center. Brownell has served as Materials + Products Chair for the Vision 2020 Sustainability Council and as a member of the Fulbright Academy of Science & Technology. He has been an editorial board member of the Journal of Advanced and High-Performance Materials, Journal of Architectural Education, and Journal of Contemporary Architectural Education. Brownell was elevated to the American Institute of Architects' College of Fellows in 2020.

Dr. Emily Makas, Associate Director, School of Architecture

Emily Makaš has a Ph.D. in the History of Architecture and Urbanism from Cornell University (2007), a Masters in Historic Preservation from Columbia University (1997), and a Bachelor's in History from the University of Tennessee (1995).

Makaš's research focuses on connections between memory and identity and the built environment. She is interested in architecture, urbanism, heritage, commemoration, and politics. Most of her career has focused on Southeastern Europe and her recent work explores relationships between museums and urban and national identities in Sarajevo and Mostar. She is currently finishing up a monograph on commemoration, heritage reconstruction, and public space in Bosnia-Hercegovina titled Urban and National Identities and the Rebuilding of Mostar (forthcoming from Routledge). She is also currently editing the volume Planning Eastern European Capital Cities, 1945-1989 (forthcoming from Routledge). Her other key publications include the edited volume Capital Cities in the Aftermath of Empires: Planning in Central and Southeastern Europe (Routledge, 2010, co-edited with T.D. Conley) and Architectural Conservation in Europe and the Americas (Wiley, 2011, co-authored with J.H. Stubbs).

She has also turned closer to home and is working on community-engaged research exploring race and identity in Charlotte and beyond. In Spring 2019, students enrolled in her museums seminar – which was co-taught with CoA+A Director of Galleries Adam Justice – researched, designed, and installed an exhibition at the Levine Museum of the New South titled the "Legacy of Lynching." This exhibit explored lynching cases in Mecklenburg County within the local and national context of the early 20th century. The exhibition was in partnership with the Montgomery-based Equal Justice Initiative. She is leading a team of faculty, staff, and students at UNC Charlotte's School of Architecture that are curating and designing an exhibition titled "Container/Contained: Phil Freelon: Design Strategies for Telling African American Stories." This exhibition will examine connections between the forms, materials, and meanings of Freelon's architecture and the histories and cultures exhibited and celebrated within his museums, libraries, cultural centers, and public parks. The exhibit will open in Fall 2021 at the Harvey B. Gantt Center in Charlotte, a Freelon-designed building, and then move to the North Carolina Museum of Art in Raleigh in February 2022.

At the School of Architecture, her teaching relates to her research interests and includes upper-level history seminars on topics on Museums, Adaptive Reuse, Capital Cities, and Architecture and Identity. Makaš has also taught the History Methods course as well as the Reading, Writing, Thinking Architecture course. She advises students in the Minor in Architectural History and Criticism. In addition, she teaches the required History of

Architecture survey courses. Makaš has co-led study abroad programs to Berlin (Spring 2010, Summer 2018) and Central European Capital Cities (Summer 2012).

Dr. Mona Azarbayjani, Graduate Program Director, School of Architecture

Mona Azarbayjani is an Associate Professor at the Integrated Design Labs, Energy Performance Laboratory of the UNC Charlotte School of Architecture, where she is currently teaching comprehensive studios, core building technology courses, energy modeling, and interactive envelope seminars. Her focus in research is on the energy performance of buildings, the study of thermal comfort with new technologies, and climate-responsive building design.

Dr. Azarbayjani received the B.Arch. and M.Arch. degrees (with highest distinction) from the University of Science and Technology (IUST), Tehran, Iran, and a Ph.D. degree from the University of Illinois at Urbana-Champaign (UIUC), in Architecture-Building Technology.

Dr. Azarbayjani is the recipient of the 2006-2007 UIUC Merit Scholarship in Architecture and the scholastic excellence honor during 2008-2009 at UIUC. She is also the recipient of the Exceptional Talents Fellowship from the University of Science and Technology. She is a member of Phi Kappa Phi Honor Society by election of the chapter at the University of Illinois, a LEED AP with the U.S. Green Building Council and a member of ASHRAE, American Society of Heating, Refrigerating and Air-Conditioning Engineers, as well as a member of the Building Technology Educator Society (BTES), Society of Building Science Educators (SBSE), and International Building Performance Simulation Association (IBPSA).

She was the lead PI of a Department of Energy/NREL grant to design, build, and operate a zero-energy house for the 2013 Solar Decathlon at the Orange County Great Park in Irvine, California, in October 2013. As the lead faculty and project manager, she collaborated with hundreds of students, faculty, and industry partners in garnering the People's Choice Award, eighth place in Architecture, and third place in the Engineering competition.

NEW FACULTY

Nadia Anderson, Associate Professor, Architecture and Urban Design

Nadia M. Anderson is an Associate Professor of Architecture and Urban Design and Director of the City Building Lab at the University of North Carolina at Charlotte. Her project work uses community engagement to generate co-creation design processes that facilitate agency in marginalized communities. This work engages multiple scales from pop-up installations to regional watershed studies and includes affordable housing, local food systems, renewable infrastructures, and post-disaster mitigation. Professor Anderson has received funding from the National Endowment for the Arts, the American Institute of Architects, and the Gambrell Foundation to support this work. Her writing and theoretical investigations focus on how power has been distributed through system structures in architectural practice and education. She has brought this work into organizational discourses as Chair of the ACSA Education Committee, a member of the College of Arts + Architecture Diversity Council, and convener of UNC Charlotte's Urban Complexities symposia. She is considered an expert on community engagement in

design and has been invited to speak and conduct workshops on this topic in Perú and the Czech Republic as well as multiple locations in the U.S.

Professor Anderson's recent work includes addressing systemic racism through systems-based affordable housing and local food systems; developing new architecture pedagogies that overcome hegemonic white supremacy; and identifying how informal spatial practices generate opportunities for sovereignty and identity creation in the built environment. Prior to joining the faculty at UNC Charlotte, she was a member of the faculty at Iowa State University for eleven years. She practiced architecture and urban design in Chicago, Warsaw, and Vienna and holds a license to practice architecture in Illinois. She received her Master of Architecture degree in 1994 from the University of Pennsylvania and her Bachelor of Arts degree in 1988 from Yale University. While she has lived in multiple cities and countries, Professor Anderson considers herself a native of Minneapolis, Minnesota.

Sekou Cooke, Associate Professor and Director, Urban Design

Sekou Cooke comes to UNC Charlotte from Syracuse, New York, where he was an assistant professor in the School of Architecture at Syracuse University. Born in Jamaica, Sekou went on to receive his B. Arch from Cornell University, and his M.Arch from Harvard University. In his professional practice, sekou cooke STUDIO, he brings thoughtful processes and rigorous experimentation to a vast array of project types – from public, non-profit, and residential works in New York, New Jersey, and North Carolina, to mixed-use projects and tenant improvements in California, to speculative developments locally and internationally.

Cooke's current research centers on the emergent field of Hip-Hop Architecture, a theoretical movement reflecting the core tenets of hip-hop culture with the power to create meaningful impact on the built environment and give voice to the marginalized and underrepresented within design practice. This work has been widely disseminated through his writings, lectures, and symposia and is the subject of his monograph, Hip-Hop Architecture.

Rachel Dickey, Assistant Professor, Architecture

Rachel Dickey is an Assistant Professor in the School of Architecture and founder of Studio Dickey, a public art and design practice. She holds a Masters of Design Studies with a concentration in technology from the Graduate School of Design at Harvard University and a Bachelor of Science in Architecture and Master of Architecture from Georgia Institute of Technology, where she received the Ventulett Distinguished Chair Award and Prize for her graduate thesis project.

As a teacher of undergraduate and graduate architecture studios and computational design seminars her classes investigate approaches that emphasize design agency in architecture. Her research and work have been published in many journals including Architectural Review, Architect Magazine, Paradigms in Computing, and Arteca Journal by MIT Press. Dickey has exhibited at the Angels Gate Cultural Center in Los Angeles, Office for the Arts at Harvard, Des Cours in New Orleans, and the Museum of Design in Atlanta.

Recognizing that current technologies are allowing for an increasingly direct relationship between design and translation, her research seeks to investigate the potential for a machine and material epistemology in architecture. It explores the use of machines and tools in design not only in terms of material manipulation, but also as instruments, which affect people and their environments. Overall, her research and practice examine ways of appropriating technology in design to uncover approaches that demonstrate the

influential capacity of art and architecture to impact and enhance the lives of those who encounter it.

Dr. Lidia Klein, Assistant Professor, Architectural History

Lidia Klein is an Assistant Professor in Architectural History, specializing in global contemporary architecture. Her current research centers on the political dimensions of postmodern architecture outside the Global North, specifically in South America and Eastern Europe. She earned her Ph.D. in 2018 from the Department of Art, Art History, and Visual Students (AAHVS) at Duke University, defending her dissertation, “Political Postmodernisms: Architecture in Chile and Poland, 1970–1990” (director: Annabel Wharton). She also earned a Ph.D. from the Department of Art History at the University of Warsaw in Poland in 2013, defending her dissertation, “Living Architectures: Biological Analogies in Architecture at the End of the Twentieth Century” (director: Waldemar Baraniewski). While finishing her first Ph.D., she was awarded a Fulbright Junior Advanced Research Grant to the AAHVS Department at Duke during the 2010–2011 academic year. She also worked as an Assistant Professor at the Academy of Fine Arts in Warsaw in 2012–2013. During the Spring semester of 2016, she was a Visiting Assistant in Research at the Yale School of Architecture.

As of 2018, Klein is the author, editor, or co-editor of five published books and numerous articles on contemporary architecture. Her book projects include the single-author study, Living Architectures: Biological Analogies in Architecture of the End of the 20th Century (Warsaw: Fundacja Kultury Miejsca, 2014) [in Polish], and edited books, Transformation: Polish Art, Design and Architecture After 1989 (Warsaw: Fundacja Kultury Miejsca, 2017) [in Polish], Polish Postmodernism: Architecture and Urbanism (Warsaw: 40000 Malarzy, 2013) [in Polish], and Making the walls quake as if they were dilating with the secret knowledge of great powers (Warsaw: Zacheta, 2012), co-edited with Michal Libera. She has also authored essays that appear in various edited books, such as “From Post-Political to Agonistic,” published in Architecture Against the Post-Political, an anthology of texts edited by Nadir Lahiji (Routledge, 2014) and most recently, “One Size Fits All: Appropriating Postmodernism in the Architecture of Late Socialist Poland,” an essay co-authored by Alicja Gzowska in Second World Postmodernisms, edited by Vladimir Kulić (Bloomsbury, 2018). Currently she is working on turning her dissertation into a book manuscript.

Marc Manack, Associate Professor, Architecture

Marc Manack AIA NCARB is an architect, an associate professor at the UNC Charlotte School of Architecture, and is founding principal of the architecture and design practice SILO AR+D.

His professional design work and creative practice have been recognized nationally and internationally in numerous publications, exhibitions, and design awards. In 2016, Manack was selected as an Emerging Voice by The Architectural League of New York, a competition that recognizes North American individuals and firms with distinct design voices and significant bodies of realized work. In 2018, SILO AR+D was recognized as a Next Progessive by Architect Magazine.

Manack’s research focuses on the relationship between design processes, project delivery, and organizations of practice. He is interested in how that relationship is affected by emerging cultural and technological phenomena, leading to advanced possibilities for expression and new definitions for practice in architecture. He has taught previously at the University of Arkansas Fay Jones School of Architecture, Kent State University College of Architecture and Environmental Design, and at Ohio State University's Austin E. Knowlton School of Architecture, from where he is also a graduate.

Liz McCormick, Assistant Professor, Architecture

With a sizeable portion of the globe occupying hot-humid climate zones, Liz McCormick's work strives to enhance architectural innovation and construction technologies in tropical regions. She is an architect, educator, and researcher whose work explores climatically sensitive and contextually appropriate building enclosure designs that both connect the occupant to the outdoors and reduce the dependence on mechanical conditioning.

Liz is a licensed architect, LEED AP, and Certified Passive House Consultant. With nearly 10 years of experience in Santa Fe, Seattle, Boston, Houston, Singapore, and New Orleans, Liz has worked on a variety of projects, including several single-family passive houses and LEED-certified commercial buildings and campuses. She joins UNC Charlotte from Tulane University in New Orleans.

She completed her Master of Science in Building Technology from the Massachusetts Institute of Technology and received a Bachelor of Fine Art and Bachelor of Architecture from the Rhode Island School of Design. Liz publishes and presents regularly at international conferences.

Dimitris Papanikolaou, Assistant Professor, Architecture & Software Information Systems

Dimitris Papanikolaou, DDes, is an Assistant Professor at UNC Charlotte, jointly between the School of Architecture and the Department of Software and Information Systems in the College of Computing and Informatics. His research investigates how the study of system dynamics, social behavior, and information technology can inform new design strategies for intelligent urban, building, and mobility systems. His interests include human-building interaction, urban modeling, ubiquitous computing, data visualization, urban operations research, and design research. Learn more about his research at his website.

Dr. Papanikolaou has worked at Microsoft Research on applications of the internet of things and at the MIT Media Lab co-developing Mobility on Demand, an intelligent sharing system of electric foldable cars, named by TIME magazine as the best automotive invention of 2007. His research has received many distinctions, including the Buckminster Fuller Challenge; the Harvard Deans' Design Challenge; the MIT Transportation showcase award in Economics, Finance, Policy and Land Use; the Harvard Fellowship on Energy and Environment; the Harvard Meyer Transportation Research award; and a Fulbright Fellowship. He has taught at New York University Interactive Telecommunications Program, Massachusetts Institute of Technology (MIT), and Harvard University and has been an invited speaker in universities, research labs, and design studios such as the University of Michigan, Dartmouth College, CMU, Microsoft Research, Pennsylvania State University, NOKIA Research, University of California Berkeley, UN Studio, and OMA.

Recently, Dr. Papanikolaou received a grant from the Knight Foundation in support of the project, "Charlotte Breaths," developed through his Urban Synergistics Lab, a research initiative to design, study, and develop enabling systems that connect humans, objects and places cooperatively across scales, physically or virtually.

Dr. Papanikolaou holds a Doctor of Design (DDes) from Harvard Graduate School of Design, a Master of Science from MIT Media Lab (MIT School of Architecture + Planning), a Master of Science in Architecture Studies in Design Computation from MIT School of Architecture + Planning, and a Diploma in Architectural Engineering from the National Technical University of Athens.

Catty Zhang, Assistant Professor, Architecture

Catty Dan Zhang is an assistant professor of architecture at UNC Charlotte. Her research and practice explore the design of active atmosphere at the convergence of digital media and architecture. Employing atmospheric and computational mediums, her work translates ordinary objects into performative and synergistic systems to visualize and to modulate ephemeral forms.

Zhang has practiced in the US and China. In 2020, she was selected as the winner of the inaugural Emerging Designer's Exhibition Competition and had her solo exhibition entitled "The Moving Air" at UC Berkeley, exploring a cultural-environmental paradigm of airflow as a spatial agency. Her work has been featured in group exhibitions at venues such as the London Design Festival, Carnegie Museum of Arts, A+D Museum, Harvard GSD, among other institutions, and has received recognitions in international design awards and competitions including the AN Best of Design Awards and A+D Design Awards. Zhang was a finalist of the Wheelwright Prize in 2018 and 2021. She earned a BArch from Tsinghua University, an MArch with Honors from Washington University in St. Louis, and an MDes in Technology from Harvard University Graduate School of Design where she was the 2017 recipient of the Daniel L. Schodek Award for Technology and Sustainability.

Syllabi + Assignment sheets + Examples of student work for non-met SPCs

B.2 SITE DESIGN			
Ability to respond to site characteristics, including urban context and developmental patterning, historical fabric, soil, topography, ecology, climate, and building orientation in the development of a project design.	**Topography & Ecology**	ARCH 7103 Integrated Studio ..... required of all MArch students in all 3 tracks, this course was previosly numbered 7102	In ARCH 7103 - Integrated Studio, assignments demonstrate student ability in designing site design in protecting natural vegetation / biodiversity and grading site for appropriate drainage / stormwater management and rainwater collection. In addition, they enable students in designing appropriate building foundations that transfer the structural loads from a building into the ground including the insulation against the frost line and underground drainage pipe against ground water seepage.
	Soils	ARCH 4303/5303 Structural Principles ..... Students in the M1 track are required to take ARCH 5303, students in the AS track took the course as undergraduates as ARCH 4303, M2 students either had the equivalent in their undergraduate degree or are asked to take ARCH 5203 based on a transcript review	In ARCH 4303/5303 - Structural Principles, soils are discussed from structural point of view. Angle of repose of soil is discussed with respect to lateral soil pressure on a retaining wall. The range of bearing pressures of different soils and implications on foundation types is discussed in the course as well. Also mentioned is the possibility of resonance that may occur in a seismic event if the Period of a soil is similar to the fundamental Period of vibration of a structure. As part of the semester project requirements , each grad student must conduct 6 site visits over the semester to observe progress on a construction site. This project is closely related to lectures delivered in the course. The following excerpt from the project report focuses on site grading and preparation of the site to facilitate construction.

B.4 TECHNICAL DOCUMENTATION			
Ability to make technically clear drawings, prepare outline specifications and construct models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.	**Outline Specifications**	ARCH 5206 Professional Practice ..... required of all MArch students in all 3 tracks	In ARCH 5206 outline specifications are covered in a dedicated course lecture about construction documents and specifications where students are introduced to the types, structure, and development of specifications. To apply this knowledge students are asked to review specifications and develop a table of contents for a previously completed studio project. (Students are also quizzed on the distinctions between types of specifications).

B.6 ENVIRONMENTAL SYSTEMS			
Understanding of the principles of environmental systems' design, how systems can vary by geographic region, and the tools used for performance assessment. This must include active and passive heating and cooling, indoor air quality, solar systems, lighting systems, and acoustics.	**Indoor Air Quality**	ARCH 5305 Building Systems Integration ..... required of all MArch students in all 3 tracks, this course was previosly numbered 7102	In ARCH 5305, Assignment 2 asks students to consider several aspects of their fresh air approach - (1) how much fresh air are you considering and why? and (2) how are you providing it? This assignment demonstrates the student's ability to evidence the appropriate type of air handling system in the context of human health and well-being as well as heat recovery principles. Lab 5 addresses the energy implications (EUI) associated with enhanced ventilation (beyond code minimum). The emphasis of these two tasks is to articulate ways that buildings not only keep us from becoming unhealthy (sick building syndrome) but buildings that actually make the occupants well.
	Acoustics	ARCH 4302/5302 Environmental Systems Principles ..... Students in the M1 track are required to take ARCH 5302, students in the AS track took the course as undergraduates as ARCH 4302, M2 students either had the equivalent in their undergraduate degree or are asked to take ARCH 5302 based on a transcript review	In ARCH 4302/5302 acoustical design is introduced in a lecture, and in the assignment students were asked to choose a room and study its acoustics quality. There are 2 major parts involved, Reverberation Time (RT) calculation and Ray diagramming. In the first one, the students are asked to estimate the reverberation time of the room using Sabine equation. The assignment is designed to give students an understanding of the factors that influence the reverberation time in the room, which include volume of the room and material selection. In the second one, the students use Ray diagramming to analyze the effectiveness of the ceiling and wall shaping as well as the locations of materials inside the room to enhance sounds from the sound source and to prevent any acoustical defects, such as echoes.
	Lighting Systems		In ARCH 4302/5302, students are introduced to daylighting and electrical lighting concepts. The students were asked to Use the modified lumen method to determine the number of fixtures needed to illuminate a room of their choice to 50 fc. The room must have a window. Students Diagram how they would layout the electric lighting to complement daylight in the room. In the second part of the assignemnt, students were asked to find at least two fixture options for the ambient/general illumination layer that they identified in their preliminary lighting layout and test the effectiveness of the two fixtures using the Visual Interior Tool.

4. Requirements for the Use of Digital Content in Interim Progress Reports

File type

Files must be accessible on multiple operating systems and should not be in an editable form. All static documents, including text and images, must be presented as PDFs. If student work was presented in a video format, videos must be a file type that can be viewed on any machine and operating system.

File size

Individual PDF file size shall be limited to 5MB, per the 2015 *Procedures for Accreditation*. In limiting file size, programs should consider this simple concept: **speed of access is just as important as image quality**. Files and their embedded images should not be slow to load, and downsizing files and images should not be at the detriment of legibility.

Best practices for file size

- Photoshop files should be flattened.
- Vector line files should not be rasterized for legibility sake.

Legibility

Image legibility and file size go hand in hand. As evidence for accreditation, it is imperative that all images, and enlarged detail images, are legible. Original file format plays a part in this. If an original file is formatted for 8 ½" x 11" paper, a reviewer won't need to zoom in and out as frequently as an original file formatted for 34" x 44". Viewing hardware is also important, as the same file on a small laptop screen will need to be zoomed in and out more often than if it is viewed on two large desktop monitors.

Best practices for legibility

- Can you see the parts and pieces of an image when its blown up on the screen?
- Are large drawings legible if zoomed to see the individual parts?

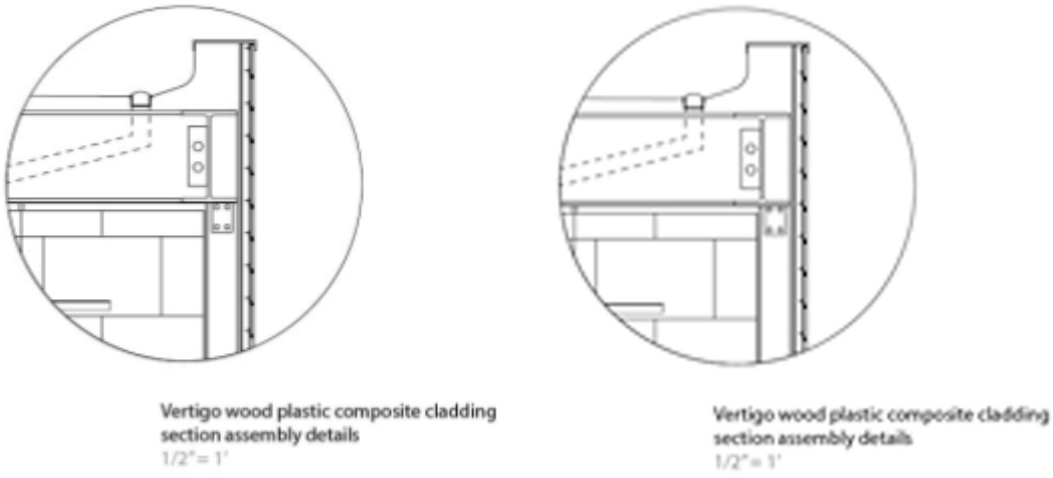

Figure 1. Examples of legible and illegible JPEG details

Organizing Digital Content

1. A "base folder" titled "Student Work" will contain all evidence in support of the Student

Performance Criteria required for the IPR (figure 2).

2. The base folder will contain one folder for each SPC, labeled "# - Name" (e.g., C.3 – Integrated Design)
3. Individual SPC folders will have three files inside, labeled as follows:
   a. 1_Course Number_Course Title.pdf
   b. 2_Course Number_Course Title.pdf
   c. 3_Course Number_Course Title.pdf
4. Each individual PDF should be organized with bookmarks and a table of contents. All evidence required to demonstrate an example of the SPC shall be combined into a single PDF.

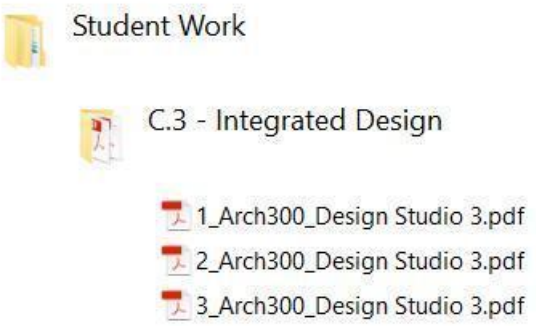

Figure 2. Digital folder structure for an accreditation visit

The program must provide all student work to the NAAB by zipping the base folder and submitting it through the NAAB's Annual Report System, along with all other required IPR documentation.