INTRODUCTION
This course is focused on computational design methodologies. The premise of this studio is to engage in advanced computational techniques and methods, including Building Information Modeling/Management (BIM), scripting, and performance analysis in preparation for professional practice and/or advanced graduate research. The goal is to research, design and implement novel computational methods towards the advancement of the architectural design workflow. This will be achieved by using the computational tools available as standalone resources and imbed them in a parametric loop to provide immediate feedback in design. Students can expect to work through self driven experimentation to develop their own working method using a variety of computational tools.

OBJECTIVES
• To acquire skills in advanced digital and computational tools and methods (Revit, Dynamo, Flow Design, Vasari, Ecotect, Robot, Simulation CFD)
• To experiment, and develop problem-solving skills with computational methods
• To investigate new applications for combining and developing iterative design methodologies between tools currently employed in practice, and ones in beta development.
• To cultivate a critical mindset regarding the strengths and limitations of logical and procedural systems within the design process
• To create more informed designs through the integration of ecological data and performance criteria

METHOD
During the course of this semester students will propose and attempt various combinations and sequences of project development. Using their existing Fall research topics, students will create various sequences of iterative design development, focusing on program analysis, solar analysis, daylighting analysis, wind simulation, structural analysis and simulation, or others to create various iterations of their project based on multivariate design optimization. It is expected that these new iterations will be compared against but vary significantly from previous iterations of the project. The ultimate goal of the project is to develop new combinations and entirely new tools for the schematic development of the design research
COURSE NUMBER
ARCH 7104

COURSE TITLE
Design Studio: Diploma Project

CATALOG DESCRIPTION
ARCH 7104. Design Studio: Diploma Project. (6) Prerequisite: 7102 or equivalent. This concluding design studio for the MArch is the capstone project experience for the professional degree. Students engage an instructor-led studio theme that involves design, research, and/or practical issues relevant to architecture and building design. (Spring)

PRE- or CO-REQUISITES
Pre-requisite: ARCH 7102 or equivalent.

OBJECTIVES
• The studio serves as a summative experience for the professional MArch degree.
• Design project that exhibits conceptual, formal, aesthetic, technological and experiential clarity, criticality and sophistication, as it pertains to varying instructor-led themes.

NAAB Criteria: In consideration of the requirements of the National Architectural Accreditation Board (NAAB), the following performance criteria shall be addressed in this course: A.1 Professional Communication Skills and C.1 Research.

INSTRUCTIONAL METHOD
The pedagogical method for this course is studio-based. Students will be given lectures, perform design assignments, and make preliminary and final project presentations. The core of the course is to investigate instructor defined research themes that the professor has engaged as part of their professional development activities. Hence, students will build upon the knowledge, inquiries, and research activities that lead building design projects that are inspired by the instructor's research expertise. The instructor may elect to have such research address a single project or different arms of the research that may be applied to varying projects. The instructor will provide the background, intellectual materials, and scholarship for the research and students will employ such inquiries to the project(s).

EVALUATION
This summative project is evaluated on architectural design quality, relevancy, and caliber of execution. The distribution of cumulative course assignments are as follows:

<table>
<thead>
<tr>
<th>Assignment Description</th>
<th>Weight for Course (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design project activities (total)</td>
<td>85%</td>
</tr>
<tr>
<td>Formal project presentations and documentation</td>
<td>15%</td>
</tr>
</tbody>
</table>

100%

All courses in the SoA are governed by the rules and regulations of UNC Charlotte as stated in the University Undergraduate and Graduate Catalogs. For more information about these polices, please refer to the appropriate catalog, which can be found online at: [http://www.uncc.edu/gradmiss/gs_catalog.html](http://www.uncc.edu/gradmiss/gs_catalog.html) (grad).

Grading of courses conform to the following grading scales and values:

**Graduate Scale & Values**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
<td>Commendable</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
<td>Marginal</td>
</tr>
<tr>
<td>U</td>
<td>69 &amp; Below</td>
<td>Unsatisfactory</td>
</tr>
</tbody>
</table>