

**Motion:** On behalf of the Civil, Environmental, and Architectural Engineering Department and the Architectural Engineering Program, the Committee on Graduate Studies and Research recommends, and I move that a new Master of Architecture (M. Arch.) graduate program, as described in the materials distributed for this meeting, be added.

# Master of Architecture

ABET - NAAB accredited program

For students wishing to become Architectural Engineers  
*and* Architects

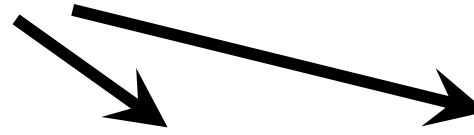
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Age 17



# ENGINEERING

# ARCHITECTURE



Civil Engineering  
4-year Bachelor  
ABET accredited

Architectural  
Engineering  
4-year Bachelor  
ABET accredited

Architecture  
5-year Bachelor  
NAAB accredited

Architectural  
Studies  
4-year Bachelor  
+  
Master of  
Architecture  
1 year  
NAAB accredited



ABET > Pathway to  
ENGINEERING  
Licensure

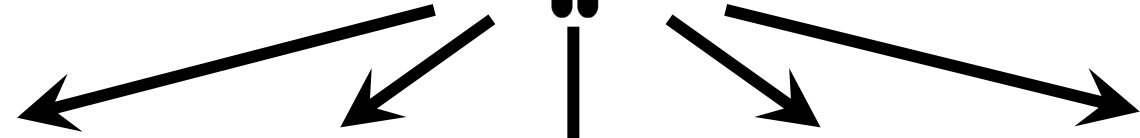
NAAB > Pathway to  
ARCHITECTURAL  
Licensure

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Age 17

# ENGINEERING

# ARCHITECTURE



Civil Engineering  
4-year Bachelor  
ABET accredited

Architectural  
Engineering  
4-year Bachelor  
ABET accredited

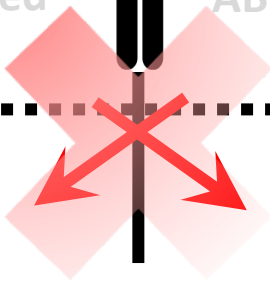
Architecture  
5-year Bachelor  
NAAB accredited

Architectural  
Studies  
4-year Bachelor  
+

+  
Master of  
Architecture  
NAAB accredited

+  
Master in  
Engineering  
ABET accredited

Master of  
Architecture  
1 year  
NAAB accredited



ABET > Pathway to  
ENGINEERING  
Licensure

NAAB > Pathway to  
ARCHITECTURAL  
Licensure

# Integrated Degree

Age 17



Architectural Engineering  
4-year Bachelor  
ABET accredited  
+  
1 year Master  
NAAB accredited

**ENGINEERING**

+

**ARCHITECTURE**

ABET > Pathway to  
ENGINEERING  
Licensure

NAAB > Pathway to  
ARCHITECTURAL  
Licensure

# Degree Requirements:

<b>BS AREN UNDERGRADUATE TOTAL</b>	<b>135</b>
Additional course requirement <sup>Note 1</sup>	6

<b>Master of Architecture Major Requirements - NAAB Accredited</b>			<b>Credit Hours</b>
Research Seminar	New course	Thesis Research seminar	3
PROFESSIONAL PRACTICE (2 courses)	CE 501	Professional Practice	3
		Professional practice elective	3
TOPIC area ELECTIVES		Elective	3
		Elective	3
		Elective	3
DESIGN THESIS	new Course	Thesis	12
<b>Minimum semester credits Hours of graduate coursework</b>			<b>30</b>

<b>TOTAL degree credit hours of combined undergraduate and graduate coursework</b>	<b>171</b>
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For the combined BS AREN/ M. Arch. program, students are required to take complementary courses during their 4 years of undergraduate studies to meet NAAB minimum total credit hour requirements. (**6 credit hours above the normal 135 credit hours needed for the B.S. AREN** = 171ch) These courses are intended to round out student backgrounds in topics related to the history and theory of architecture and urban planning, design, and social and environmental justice - broadly defined.

• **Focus area (9 credits)** The design thesis is underpinned by elective courses that are thematically aligned with a focus area, allowing students to broaden their skills and develop a meaningful grasp of a thematic area of interest. To ensure this depth, students complete at least three courses of thematically related work. Different focus areas are possible and currently include a focus on (1) structures, and (2) climate adaptation. Other focus areas can be developed, and students can propose alternative thematically related coursework with sponsorship from a thesis advisor and approval of the M. Arch program committee.

#### Focus area – **Structures.**

CE 524: Finite Element Method and Applications  
CE 510: Structural Mechanics  
CE 511: Structural Dynamics  
CE 514/ME 5383: Continuum Mechanics  
CE 519: Advanced Structural Analysis  
CE 531: Advanced Design of Steel Structures  
CE 532: Adv. Des. of Reinforced Concrete Structures  
CE 534: Structural Design for Fire Conditions  
CE/ME 5303: Applied FEM in Engineering

#### Focus area – **Climate Adaptation.**

IGS 501: Theorizing Place, Community, and  
Global Environmental Change  
IGS 505: Qualitative Methods for Community-  
Engaged Research  
IGS 510: Human Dimensions of Global  
Environmental Change  
IGS 545: Climate Change: Vulnerability and  
Mitigation  
IGS 590: Capstone Seminar: Comparative Climate  
Action

# Admissions Requirements

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## **TRACK 1 – 4-year B.S. in Architectural Engineering / 1-year Master of Architecture**

The normal residency for the combined BS AREN/ M. Arch. Program track is **one year**. A decision on admittance to the M. Arch program is made by the program committee during a student's junior year, after which students are assigned a faculty graduate advisor.

- Be in good standing towards earning their BS in Architectural Engineering from WPI, minimum 3.00 GPA
- Complete complementary courses to round out backgrounds in topics related to the history and theory of architecture and urban planning, design, and social and environmental justice - broadly defined.
- Submit a portfolio of creative work ,
- Complete the online WPI application, Resume, Statement of goals, Letters of recommendations

## **TRACK 2 – Master of Architecture**

This track is intended for those that have earned a baccalaureate degree from other majors at WPI or from other institutions. Admission to the program is decided by the program committee on a case-by-case basis. The expected residency for this track varies depending on a candidate's previous education and experiences. Courses and work from the candidate's prior degree program are reviewed by the program committee for conformance to the distribution requirements for WPI's BS in Architectural Engineering and the additional course requirement (see track 1).



**Note 1:** For the combined BS AREN/ M. Arch. program, students are required to take complementary courses during their 4 years of undergraduate studies to meet minimum total credit hour requirements (6 credit hours above the normal 135 credit hours needed for the B.S. AREN) and **to round out their backgrounds in topics related to the history and theory of architecture and urban planning, design, and social and environmental justice - broadly defined**. Students select at least 2 complimentary courses (6 credit hours total) from existing WPI offerings, as indicated below <sup>1,2,3</sup>

CE 3070: Urban and Environmental Planning

CE 4071: Land use Development and Controls

ENV 2201: Planning for Sustainable Communities

ENV 2710: Designing for Climate Resilience and Justice

ENV 3100: Adventures in Sustainable Urbanism

AR 2114: Modern Architecture in the American Era, 1750-2001 and beyond <sup>4</sup>

AR 2115: Topics in Architecture Since 1960

AR 3112: Modernism, Mass Culture, and the Avant-Garde

HI 1311: Introduction to American Urban History

HI 2310: Topics in Urban History

HI 2335: Topics in The History of American Science and Technology <sup>5</sup>

HI 3317: Topics in Environmental History <sup>5</sup>

BB 290X/HI 331X: Urban Ecology and Environmental Justice <sup>6</sup>

IGS 501: Theorizing Place, Community, and Global Environmental Change

## Rationale, Opportunity and Market Analysis

- Interest / inquiries from applicants and admitted students,
- Survey of AREN students: A survey was completed in 2020 to solicit interest among existing undergraduate students in Architectural Engineering at WPI. About 90% of the students in the AREN major responded. Of the respondents, about 88% indicated that they were **very interested (60%)** or **somewhat interested (28%)** to pursue a 1-year M-Arch program if it were offered at WPI
- A market study was performed by Academic Affairs, concluding that “*WPI would have a distinct edge in terms of curriculum, marketability, and uniquely positioned reputation in STEM.*”
- First such program in the US, thus offering **first-to-market recruiting benefits,**
- Support from the AREN Industry Advisory Board,
- There is a growing movement in the U.S. and elsewhere to have less separation between architects and engineers, as exemplified by the Design Build Institute of America (starting a student chapter here) – more people who are providing **both** the design and the engineering.

# Timeline

Fall 2023	Start NAAB accreditation process
AY 23-24	Recruit applicants and admit new students
AY 25-26	First cohort (Fall 26)
AY 26-27	Evaluate Program and improve as needed

## **NAAB timeline:**

Apply for Eligibility:	Fall 2023
Apply for Candidacy:	AY 2024 – 2025
Apply for Initial Accreditation:	AY 2025 – 2026 (first cohort)