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Scott Walker, Governor
Dave Ross, Secretary

TELECONFERENCE/VIRTUAL MEETING
ARCHITECTS SECTION
EXAMINING BOARD OF ARCHITECTS, LANDSCAPE ARCHITECTS, PROFESSIONAL ENGINEERS, DESIGNERS AND LAND SURVEYORS
Room 121A, 1400 E. Washington Avenue, Madison
Contact: Brittany Lewin 608-266-2112
December 28, 2015

The following agenda describes the issues that the Board plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a description of the actions of the Board.

AGENDA

9:00 A.M.

OPEN SESSION – CALL TO ORDER – ROLL CALL

A. Adoption of Agenda (1)

B. Approval of Minutes (2-4)
1. October 7, 2015

C. Administrative Matters
1. Staff Updates

D. Credentialing Matters – Update

E. NCARB Education Standards – Discussion and Consideration (5-24)
1. NCARB Survey **(5-6)**

F. Travel Request - NCARB Regional Summit – March 10-12, 2016 in Savanah, GA

G. Deliberation on Items Added After Preparation of Agenda:
1. Education and Examination Matters
2. Practice Matters
3. Legislative/Administrative Rule Matters
4. Informational Items
5. Speaking Engagement(s), Travel, or Public Relation Request(s)

H. Public Comments

ADJOURNMENT

NEXT MEETING DATE APRIL 26, 2016

ARCHITECT SECTION
JOINT EXAMINING BOARD OF ARCHITECTS, LANDSCAPE ARCHITECTS PROFESSIONAL ENGINEERS, DESIGNERS AND LAND SURVEYORS
October 7, 2015

PRESENT: Michael Eberle, James Gersich, Steven Wagner

EXCUSED: Gary Kohlenberg, Matthew Fernholz

STAFF: Brittany Lewin, Executive Director; Nifty Lynn Dio, Bureau Assistant; and other department staff

CALL TO ORDER

Michael Eberle, Section Vice Chair, called the meeting to order at 1:00 p.m. A quorum of three (3) members was confirmed.

ADOPTION OF AGENDA

MOTION: James Gersich moved, seconded by Steven Wagner, to adopt the agenda as published. Motion carried unanimously.

APPROVAL OF MINUTES

MOTION: James Gersich moved, seconded by Michael Eberle, to approve the minutes from April 15, 2015 as published. Motion carried.

MOTION: Steven Wagner moved, seconded by James Gersich, to approve the minutes from September 22, 2015 as published. Motion carried unanimously.

ADMINISTRATIVE MATTERS

MOTION: Michael Eberle moved, seconded by James Gersich, to recognize and thank Lawrence Schnuck for his dedicated service and leadership to the Section, the Joint Examining Board, and the State of Wisconsin. Motion carried unanimously.

ELECTION OF OFFICERS

SECTION CHAIR

NOMINATION: James Gersich nominated Michael Eberle for the Office of Board Chair.

Brittany Lewin called for other nominations three (3) times.

Michael Eberle was elected as Board Chair by unanimous consent.

VICE CHAIR

NOMINATION: James Gersich nominated Matthew Fernholz for the Office of Vice Chair. Nomination carried.

Brittany Lewin called for other nominations three (3) times.

Matthew Fernholz was elected as Vice Chair by unanimous consent.

SECRETARY

NOMINATION: Michael Eberle nominated James Gersich for the Office of Secretary. Nomination carried.

Brittany Lewin called for other nominations three (3) times.

James Gersich was elected as Secretary by unanimous consent.

2015 ELECTION RESULTS	
Section Chair	Michael Eberle
Vice Chair	Matthew Fernholz
Secretary	James Gersich

APPOINTMENT OF LIAISONS, ALTERNATES, AND DELEGATES

MOTION: James Gersich moved, seconded by Steven Wagner, to affirm the following appointments made by the Chair. Motion carried unanimously.

2015 ELECTION RESULTS	
A-E Rules Committee	Michael Eberle
Screening Panel	Matthew Fernholz, Steven Wagner, James Gersich
Credentialing and Continuing Education Liaison	Michael Eberle
DLSC Liaison	Steven Wagner

CLOSED SESSION

MOTION: James Gersich moved seconded by Steven Wagner, to convene to closed session to deliberate on cases following hearing (s. 19.85(1)(a), Stats.); to consider licensure or certification of individuals (s. 19.85(1)(b), Stats.); to consider closing disciplinary investigations with administrative warnings (ss. 19.85 (1)(b), and 440.205, Stats.); to consider individual histories or disciplinary data (s. 19.85 (1)(f), Stats.); and to confer with legal counsel (s. 19.85(1)(g), Stats.). Michael Eberle read the language of the motion. The vote of each member was ascertained by voice vote. Roll Call Vote: Michael Eberle-yes, James

Gersich-yes, Steven Wagner-yes. Motion carried unanimously.

The Section convened into Closed Session at 1:43 p.m.

RECONVENE TO OPEN SESSION

MOTION: James Gersich moved, seconded by Steven Wagner, to reconvene into Open Session. Motion carried unanimously.

The Section reconvened into Open Session at 3:10 p.m.

VOTING ON ITEMS CONSIDERED OR DELIBERATED IN CLOSED SESSION

MOTION: James Gersich moved, seconded by Michael Eberle, to reaffirm all votes made in Closed Session. Motion carried unanimously.

Reinstatement Requests

MOTION: Steven Wagner moved, seconded by James Gersich, to approve James Dahlberg application for reinstatement once all requirements are met. Motion carried unanimously.

MOTION: James Gersich moved, seconded by Michael Eberle, to approve Brian Houwman application for reinstatement once all requirements are met. Motion carried unanimously.

MOTION: Steven Wagner moved, seconded by James Gersich, to approve Thomas Sarbaugh application for reinstatement once all requirements are met. Motion carried unanimously.

ADMINISTRATIVE WARNING

MOTION: James Gersich moved, seconded by Steven Wagner, to issue an Administrative Warning in the matter of DLSC case number 14 ARC 005, P.S.E. Motion carried unanimously.

ADJOURNMENT

MOTION: James Gersich moved, seconded by Steven Wagner, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 3:21 p.m.

Comments and Feedback on Proposed Modifications to the Education Standard

Page 1:

The current education requirement for National Council of Architectural Registration Boards (NCARB) certification is a professional degree in architecture from a program accredited by the National Architectural Accrediting Board (NAAB) or the Canadian Architectural Certification Board (CACB). There are currently two alternative means to satisfy the education requirement:

1. Completion of the Broadly Experienced Architect (BEA) Program
2. An EESA-NCARB education evaluation report stating satisfaction of the NCARB Education Standard

These alternative methods use the NCARB Education Standard as criteria by which certificate applicants, including foreign educated applicants, are evaluated. The Standard is frequently reviewed and updated in order to remain relevant to current practice.

The FY15 Education Committee, comprised of education specialists and a NAAB representative, developed modifications to the Standard which included nomenclature changes, reorganization and addition of subject area categories, merging of categories, and adjustments to semester credit hour requirements. The proposed modifications were introduced to the Board of Directors during the 2015 NCARB Annual Business Meeting. The Board of Directors are interested in the Member Board Members' thoughts on the proposed modifications. Please use the brief survey to provide comments and feedback. NCARB will collect responses through January 12, 2016.

If you have any questions or want to provide additional comments please contact Harry Falconer (hfalconer@ncarb.org) or Michelle Dixson (mdixson@ncarb.org).

Page 2: Questions

1. Name

2. Jurisdiction

3. I am responding as a:

- Individual
- Member Board

4. Do you/your Board agree, disagree, or have no position on the proposed modifications to the NCARB Education Standard? *This question is required.

- Agree
- Disagree
- No position

5. Do you have any concerns regarding the proposed modifications? *This question is required.

- Yes
- No

6. If so, what are they?

7. Do you/your Board have any specific comments regarding the following proposed changes to the subject areas within the NCARB Education Standard?

i. I. General Education ('General Education')

ii. II. History and Theory, Human Behavior, and Environment ('History and Theory, and Human Behavior')

iii. III. Technical Systems ('Building Practices')

iv. IV. Design

v. V. Practice ('Professional Practice')

vi. VI. Electives ('Optional Studies')

8. Is there any additional information you need to make an informed decision regarding implementation of the modified NCARB Education Standard? *This question is required.

9. General Comments

NCARB

National Council of Architectural Registration Boards

Dennis S. Ward, AIA, NCARB
President/Chair of the Board
Florence, South Carolina

Kristine A. Harding, AIA, NCARB
1st Vice President/President-Elect
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Bayliss Ward, NCARB, AIA
Director, Region 5
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Robert M. Calvani, NCARB, AIA
Director, Region 6
Albuquerque, New Mexico

Kingsley Johnson Glasgow
Member Board Executive Director
Little Rock, Arkansas

John G. Cameron Jr.
Public Director
Grand Rapids, Michigan

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MEMORANDUM

TO: Member Board Members
Member Board Executives

FROM: Dennis Ward, AIA, NCARB
President/Chair of the Board

DATE: October 8, 2015

SUBJECT: **Request for Comments:** Modifications to the *NCARB Education Standard*

INTRODUCTION

The education requirement for NCARB certification is a professional degree in architecture from a program accredited by the National Architectural Accrediting Board (NAAB) or the Canadian Architectural Certification Board (CACB). There are two alternative means to satisfy the education requirement:

- Completion of the Broadly Experienced Architect (BEA) Program
- An EESA-NCARB education evaluation report stating satisfaction of the *NCARB Education Standard*.

Both alternatives utilize the *NCARB Education Standard* as criteria by which certificate applicants are assessed.

The *Standard* is also used in the EESA-NCARB education evaluation report for foreign educated applicants pursuing initial licensure in the U.S. The *Standard* is regularly reviewed and updated from time to time in order to remain relevant to current practice and in alignment with the *NAAB Conditions for Accreditation*.

The proposal for modifications to the *NCARB Education Standard* was reviewed by the NCARB Board of Directors at the June Pre-Annual Board Meeting. The Board of Directors would now like feedback from our Member Boards prior to voting on these proposed changes. Comments will be received through January 12, 2016.

Feedback from our Members Boards on these proposed changes is critical to the Board of Directors. The Board would like to assure that we have heard from our membership on this subject and that we continue to maintain the *NCARB Education Standard* as a valid and appropriate criteria by which to review an applicant's alternative education for certification.

The following pages provide details and rationale on all proposed modifications. Questions regarding the proposal should be directed to Harry Falconer (hfalconer@ncarb.org) or Michelle Dixson (mdixson@ncarb.org).

BACKGROUND

The *NCARB Education Standard* is the approximation of the requirements of a professional degree from a program accredited by the National Architectural Accrediting Board (NAAB). It includes general studies, professional studies, and electives, which together comprise a professional education in architecture.

The *NCARB Education Standard* is not the equivalent to the *NAAB Conditions for Accreditation*. The *NCARB Education Standard* is prescriptive based and includes subject area definitions and semester credit hour requirements. The *NAAB Conditions for* Accreditation are performance based and include criteria by which student outcomes are reviewed.

EXECUTIVE SUMMARY

Following the 2013 NAAB Accreditation Review Conference, the *Conditions for Accreditation* were revised and updated in 2014. The FY15 Education Committee was charged with reviewing the *NCARB Education Standard in order to confirm* relevancy and alignment with the updated Student Performance Criteria (SPC) in the *2014 NAAB Conditions for Accreditation*.

The committee, composed of education specialists and a representative from the NAAB, approached the charge by identifying misalignments between the subject areas of the *Standard* and the SPC of the *Conditions*, eliminating overlap between the two sets of requirements, and addressing SPC not currently covered in the *Standard*. This approach led to modifications, including nomenclature changes, reorganization and addition of subject area categories, merging of categories, and adjustments to semester credit hour requirements. The proposed changes include an update to the *Standard's* subject area and category definitions completed in collaboration with NAAB subject matter experts.

Please refer to the attached *Education Standard* Comparison Chart and the *Education Standard* redline document for details regarding the proposed changes.

PROPOSED *EDUCATION STANDARD* OUTLINE
In this proposed outline, the relative NAAB SPC are identified and aligned under each subject area, with the exception of General Education. The language from each of the NAAB SPC was then integrated into the *NCARB Education Standard* based upon the proposed alignments.

I. **General Education** (currently 45 semester credit hours); remain as is.

II. **History and Theory, Human Behavior, and Environment** (currently 16 semester credit hours)

Proposed Changes:

- Subject Area title change to History and Theory, and Human Behavior.
- Requirement reduction from 16 to 12 semester credit hours.
- Relocate Environment category to studio design hours.
- The remaining three (3) semester credit hours may be in any one or more categories of the History and Theory, and Human Behavior subject area.

Proposed Categories and Related SPC:

A. History and Theory – 6 semester credit hours min.
   i. A.7 – History and Global Conditions
B. Human Behavior – 3 semester credit hours min.
   ii. A.8 – Cultural Diversity and Social Equity

III. Technical Systems (currently 24 semester credit hours)

Proposed Changes:

- Subject Area title change to Building Practices.
- Requirement increase from 24 to 27 semester credit hours.
- Move Technical Documentation from Practice Subject Area to this Subject Area.
- Category title change from Building Service Systems and Building Envelope/Enclosure Systems to Building Service and Building Enclosure Systems.
- Add Financial Considerations category

Proposed Categories and Related SPC:

A. Structural Systems – 6 semester credit hours min.
   i. B.5 – Structural Systems
B. Environmental Control Systems – 6 semester credit hours min.
   ii. B.6 – Environmental Systems
C. Construction Materials and Assemblies – 6 semester credit hours min.
   iii. B.8 – Building Materials and Assemblies
D. Building Service and Building Enclosure Systems – 3 semester *credit hours min. (title change)*
   iv. B.7 – Building Envelope Systems and Assemblies
   v. B.9 – Building Service Systems
E. Technical Documentation – 3 semester credit hours min. (moved from Practice)
   vi. B.4 – Technical Documentation
F. Financial Consideration – 3 semester credit hours min. (added requirement)
   vii. B.10 – Financial Considerations

IV. Design (currently 50 semester credit hours)

Proposed Changes:

- Requirement reduction from 50 to 42 semester credit hours.
  - This reduction in semester credit hours is based on the linking study performed by the committee. The NAAB SPC linked to Design Levels I-IV only, therefore the committee has proposed the elimination of Design V, which required 8 credit hours.
  - Current Level V Design, which includes comprehensive design requirements, is now represented in *Integrated Design,* the proposed fourth category.
  - The remaining ten (10) semester credit hours may be in any one or more categories of the Design subject area.
- Categories renamed and redefined.
  - Eliminates the misperception that Design Levels, which demonstrate knowledge that is built upon through each consecutive Level, are sequential and refer to years in school.

- Provides a more accurate reflection of the criteria.

Proposed Categories and Related SPC:

A. *Fundamental Design (current Level I) – 8 semester credit hours min.*
   i. A.1 - Professional Communication Skills
   ii. A.2 - Design Thinking
   iii. A.4 - Architectural Design Skills
   iv. A.5 - Ordering Systems
B. *Program and Site Design (current Level II) – 8 semester credit hours min.*
   i. B.1 - Pre-Design
   ii. B.2 - Site Design
   iii. Added language from NAAB Perspectives on sustainability and environmental design
C. *Research and Investigative Based Design (current Levels III and IV) – 8 semester credit hours min.*
   i. A.3 - Investigative Skills
   ii. A.6 - Use of Precedents
   iii. C.1 - Research
D. *Integrated Design (current Levels IV and V) – 8 semester credit hours min.*
   i. C.2 - Integrated Evaluations and Decision-Making Design Process
   ii. C.3 - Integrative Design

V. Practice (currently 9 semester credit hours, of which 3 must be in Laws and Regulations)

Proposed Changes:

- Requirement increase from 9-12 semester credit hours.
- Require an additional <u>minimum</u> of 3 credit hours in Ethics and Professional Conduct.
- Category title change from Project Process to Stakeholder Roles in Architecture.
- Subject Area title change to Professional Practice.
- The remaining six (6) must be distributed across the other three categories.

Proposed Categories and Related SPC:

A. Stakeholder Roles in Architecture – 3 semester credit hours <u>max</u>.
   i. D.1 – Stakeholder Roles in Architecture
B. Project Management – 3 semester credit hours <u>max</u>. (change title)

ii. D.2 – Project Management

C. Business Management – 3 semester credit hours max.

iii. D.3 – Business Practices

D. Laws and Regulations – 3 semester credit hours min.

iv. B.3 – Code and Regulations

v. D.4 – Legal Responsibilities

E. Ethics and Professional Conduct – 3 semester credit hours min.

vi. D.5 – Professional Conduct

VI. **Electives** (currently 16 semester credit hours)

Proposed Changes:

- Requirement decrease from 16-12 semester credit hours.
- Subject Area title change to Optional Studies.

Note: Although there is an overall reduction of ten semester credit hours, the proposed *Standard* includes the same percentage of architecture-related coursework as the current *Standard*. The proposed total (150 semester credit hours) is also in alignment with the current requirements for an accredited Bachelor of Architecture degree program. The resulting outline provides a distribution of hours and subject areas that are aligned with the *2014 NAAB Conditions for Accreditation*.

CONCLUSION

The Education Committee, educators and subject matter experts in education evaluation were engaged in the comprehensive assessment and revision of the proposed *NCARB Education Standard*. The reorganization, revisions to nomenclature and subject area definitions, and adjustment of semester credit hour requirements maintains the relevancy and currency of the *Standard* as the criteria by which to review applicants for licensure and/or certification.

Comments will be received through January 10, 2016 and the Board of Directors will be reviewing these comments and voting on these proposed changes at a special meeting scheduled for January 30, 2016.

The *NCARB Education Standard* is the approximation of ~~the~~ a first ~~requirements of a~~ professional degree from a NAAB-accredited degree program. It includes general studies, professional studies, and ~~electives~~optional studies, which together comprise a professional liberal education in architecture.

The *NCARB Education Standard* is the criteria for the EESA-NCARB Education Evaluation (described on page 19 of the Education Guidelines). An EESA-NCARB Education Evaluation is required for two types of applicants who are seeking to satisfy one of two alternates to the education requirement for NCARB certification:

1. ~~>~~ Applicants who have a professional degree in architecture from a country other than the United States or Canada and whose degree meets the requirements for licensure in that country.~~, and~~
2. ~~>~~ Applicants for the Broadly Experienced Architect (BEA) Program who have at least 64 semester credit hours (or 96 quarter credit hours) of post-secondary education.

The EESA-NCARB Education Evaluation process is described on page 20 and the BEA Program is described on page 9 of the *Education Guidelines*. The education requirement for NCARB certification is described in the ~~*Handbook for Interns and Architects*~~*Certification Guidelines*.

The *NCARB Education Standard*, the individual subject areas and categories of the *NCARB Education Standard*, and means to satisfy any identified deficiencies are described ~~below and~~ on the following pages. The following definitions have been developed to approximate the requirements of a NAAB-accredited degree program in architecture.

A minimum of ~~160~~150 semester credit hours[1] (~~which is the equivalent of 240~~ 225 quarter credit hours) of academic credit is required and is grouped into six subject areas: General Education; History and Theory and~~,~~ Human Behavior~~, and Environment~~; ~~Technical Systems~~Building Practices; ~~Practice;~~ Design; Professional Practice; and ~~Electives~~Optional Studies.

1. General Education

A total of 45 semester credit hours are required. At least three (3) hours in the Communication Skills category must be in English Composition. The remaining 42 hours may be in any one or more categories of the General Education subject area.

A. Communication Skills

Communication Skills are defined as effective written and oral communication using the conventions of Standard English as taught in ~~the United States~~English-speaking countries.

Acceptable courses include English composition, English grammar, public speaking, media communication, community consensus building, research methods, speech communication, business communication, and introductions to research.

Courses in English literature are NOT acceptable in this category, but they are acceptable in Humanities and Arts. Courses in English as a foreign language are NOT acceptable in Communication Skills; however, they may be acceptable in Humanities and Arts.

B. Humanities a~~A~~nd Arts

[1] [1] A "credit hour" is the unit of measuring educational credit, usually based on the number of classroom hours per week throughout a term. Students are awarded credit for classes on the basis of the Carnegie unit. This defines a semester unit of credit as equal to a minimum of three hours of work per week for a semester (Definition of a Carnegie Unit). Generally, in the U.S., a semester credit hour is measured as 15-16 contact hours per semester.

Humanities and Arts are defined as the academic study of the expressions and artifacts of human experience in word, image, music, and gesture using methods that are primarily analytic, critical, or speculative and that apply rational thought to construct and assess opinions, ideas, and arguments.

Acceptable courses include philosophy, ancient and modern languages, literature, ~~law,~~ history, philosophy, religion, visual, performing and applied arts, and language courses other than English.

C. Quantitative Reasoning

Quantitative Reasoning is defined as the study of quantitative methods and rational, systematic steps based on sound mathematical procedures to arrive at a conclusion.

Acceptable courses include algebra, analytic and descriptive geometry, trigonometry, calculus, logical reasoning, pre-calculus, linear algebra, and statistics.

D. Natural Sciences

Natural Sciences is defined as the study of the universe using a naturalistic approach, which is understood as obeying rules or laws of natural origin. The term Natural Science is also used to distinguish study in those fields that use the scientific method to study science and nature.

Acceptable courses include astronomy, astrophysics, bacteriology, biology, chemistry, earth science, physics, geology, zoology, microbiology, biochemistry, and botany.

E. Social Sciences

Social Science~~s~~ is defined as the study of the fields of academic scholarship that explore human society.

Acceptable courses include: anthropology, archaeology, economics, geography, history, law, linguistics, human geography, political science, gender studies, racial/ethnic studies, geography, international studies, psychology, and sociology.

Satisfying deficiencies in General Education

Relevant courses may be taken at any university, college, or community college that is accredited by one of the six regional accrediting associations in the United States: Middle States Association of Colleges and Schools, North Central Association of Colleges and Schools, New England Association of Schools and Colleges, Northwest Commission on Colleges and Universities, Southern Association of Colleges and Schools, and Western Association of Schools and Colleges. Information concerning regional accreditation is usually found on each academic institution's website. It can also be obtained from the admissions office or the registrar.

If a U.S. regionally accredited academic institution grants credit in relevant subjects on the basis of equivalency examinations administered by the institution or by the College Entrance Examination Board's Advance Placement Program, and if that credit is listed on an official transcript issued by that institution, then that credit can be used to satisfy the general education requirement.

The College Level Examination Program (CLEP) can be used to satisfy the general education requirement. The score required varies from subject to subject. Further information can be obtained from NAAB.

2. History a~~A~~nd Theory, and Human Behavior~~, And Environment~~

A total of at least ~~16~~ 12 semester credit hours, with minimum requirements for each category as indicated:

A. ~~>~~ History and Theory (6)
B. ~~>~~ Human Behavior (3)

~~> Environment (3)~~

The remaining four (~~4~~3) semester credit hours may be in any one or more categories of the History and Theory, and Human Behavior~~, and Environment~~ subject area.

A. History a~~A~~nd Theory

History and Theory are defined as the study of the traditions of architecture and the built environment, landscape architecture, urban form, and construction by which diverse human needs, values, and aspirations have been addressed in response to cultural, climatic, ecological, technological, socioeconomic, and public health constraints.

Acceptable topics include historical movements in architecture~~,~~ history of architecture, landscape architecture, and urbanism ~~design~~, history of building technology, and theory of architecture.

Courses in art history, cultural history, economic history, and political history are NOT acceptable in this category, but they are acceptable in General Education.

B. Human Behavior

Human Behavior is defined as the study of the characteristics, nature, and behavioral norms of diverse individuals and groups that relate to the economic, physical and spatial environments in which they function, and to the processes of environmental modification and change.

Acceptable topics include the study of environmental psychology, ergonomics, human behavior, post-occupancy studies, cultural diversity, social diversity, and social response to the environment.

Satisfying deficiencies in History and Theory and Human Behavior

Relevant courses may be taken at any university, college, or community college that is accredited by one of the six regional accrediting associations in the United States: Middle States Association of Colleges and Schools, North Central Association of Colleges and Schools, New England Association of Schools and Colleges, Northwest Commission on Colleges and Universities, Southern Association of Colleges and Schools, and Western Association of Schools and Colleges.

Courses taken at community or junior colleges are acceptable for satisfying deficiencies in the History and Theory and Human Behavior requirement.~~category and the Human Behavior category only~~.

~~**Satifying Deficiencies in Environment**~~

~~Courses to satisfy deficiencies in this category may be taken at either~~

~~> Four-year institutions that offer a professional degree program accredited by NAAB or CACB/CCCA. A list of institutions with NAAB- and CACB/CCCA-accredited programs can be found here.~~

~~OR~~

~~> Four-year institutions that offer a pre-professional degree in architecture but do not also offer a NAAB- or CACB/CCCA-accredited program.~~

All courses must be approved by NAAB in advance

~~If a U.S. regionally accredited academic institution grants credit in relevant subjects on the basis of equivalency examinations~~

~~administered by the institution, and if that credit is listed on an official transcript issued by that institution, then that credit can be used to satisfy these subject area requirements.~~

3. ~~Technical Systems~~Building Practices

A total of at least ~~24~~ 27 semester credit hours, with minimum requirements for each category as indicated:

A. ~~>~~Structural Systems (6)
B. ~~>~~Environmental Control Systems (6)
C. ~~>~~Construction Materials and Assemblies (6)
D. ~~>~~Building Service ~~Systems~~ and Building Enclosure~~Envelope/ Enclosure~~ Systems (3)
E. Technical Documentation (3)
~~D.~~F. Financial Considerations (3)

~~The remaining three (3) hours may be in any one or more categories of the Technical Systems subject area.~~

A. Structural Systems

Structural Systems are defined as the study of the basic structural elements of buildings, their interaction as a support system, the forces that act on and in buildings, and the principles, theory, and appropriate applications of these systems.

Acceptable topics include analysis of structural systems, construction, construction assemblies, determinate and indeterminate systems, equilibrium, forces and force systems, free body diagrams, gravity, lateral and seismic forces, loads, mechanics of materials, resolution of external forces, shear and bending moments, sizing of structural members, stability, statics, strength of materials, stress and strain, structural elements, structural systems in wood, steel and concrete, and theory of structures.

B. Environmental Control Systems

Environmental Control Systems are defined as the study of building elements that pertain to the modification of the microclimate for purposes of human use and comfort.

Acceptable topics include acoustics, air conditioning, building core systems, energy, energy efficiency, energy transmission, environmental systems, active and passive heating and cooling systems, lighting (natural and artificial), solar geometry, natural ventilation, indoor air quality, solar energy utilization, and sustainability.

C. Construction ~~materials~~ Materials and Assemblies

Construction Materials and Assemblies are defined as the study of the basic principles and appropriate selection and application of~~characteristics of building materials and how they are used, made, and appropriately applied in a building project~~ interior and exterior construction materials, finishes, products, components, and the assemblies based on their inherent performance, including environmental impact and reuse~~.~~

Acceptable topics include physical properties of building materials, fenestration, sustainable material selection, ~~detailing,~~ installation characteristics of material assemblies, ~~and~~ associated assembly cost for labor and materials, and material use and detailing.

D. Building Service ~~Systems~~ and Building ~~Envelope/~~Enclosure Systems

Building Service and Building Enclosure Systems ~~and Building Envelope/Enclosure Systems~~ are defined as the study of the appropriate selection and application of~~:~~ b~~B~~uilding s~~S~~ervice s~~S~~ystems including lighting~~, the application and performance of non-thermal~~ mechanical, plumbing, electrical, ~~control,~~ communications, vertical transportation, security, fire protection, non-thermal mechanical, control, circulation, and signal systems and application of ~~B~~building ~~Envelope/E~~enclosure s~~S~~ystems relative

to ~~, the performance~~fundamental performance, aesthetics, moisture transfer, durability, and energy.~~ characteristics of the building envelope/enclosure.~~

Acceptable topics ~~in Building Envelope/Enclosure Systems~~ include curtain wall systems, sustainability, construction methods, facades, ~~moisture transfer, durability, energy performance, and material use and detailing. Acceptable topics in Building Service Systems include~~ plumbing, electrical, vertical transportation, security, control, communication, and fire protection and life safety systems.

E. **Technical Documentation~~.~~**
Technical documentation is defined as the study of preparing technically clear and accurate drawings, preparing outline specifications, and models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.

F. **Financial Considerations**
Financial considerations are defined as the study of building economics and the fundamentals of building costs, project financing, methods, and feasibility.

Acceptable topics include building costs, cost and benefit analysis, cost control, development costs, estimating, finance, life-cycle costing, site acquisition and development, and value engineering.

Satisfying deficiencies in ~~Technical Systems~~Building Practices
Courses to satisfy deficiencies in this category may be taken at either

> Four-year institutions that offer a professional degree program accredited by NAAB or CACB/CCCA. A list of institutions with NAAB- and CACB/CCCA-accredited programs can be found here.

OR

> Four-year institutions that offer a pre-professional degree in architecture but do not also offer a NAAB- or CACB/CCCA-accredited program. Courses taken at community or junior colleges are NOT acceptable for satisfying deficiencies in ~~technical systems~~building practices.

All courses must be approved by NAAB in advance.

~~Courses taken at community or junior colleges are NOT acceptable for satisfying deficiencies in technical systems.~~

If a U.S.-regionally accredited academic institution grants credit in relevant subjects on the basis of equivalency examinations administered by the institution, and if that credit is listed on an official transcript issued by that institution, then that credit can be used to satisfy these subject area requirements.

4~~5~~. Design
A total of at least ~~50~~42 semester credit hours with a ~~including at least one Level V design studio sequence, with a~~ minimum of eight (8) hours ~~and maximum of twelve (12) hours in each level~~in each area. The remaining ten (10) hours may be in one or more areas of Design:~~:~~

~~A. > Level I~~ Fundamental Design (8)
A.
B. ~~> Level II~~ Programming and Site Design (8)
C. ~~> Level III~~ Research and Investigative-Based Design (8)
~~> Level IV~~
D. ~~> Level V~~ Integrated Design (8)

~~The remaining ten (10) hours may be in any one or more~~

levels of the Design subject area with no more than twelve (12) hours in any one level.

Design is defined as collection of data or information, the analysis, synthesis, use of judgment, and development and communication tools and methods that architects use to understand, assess, bring together, and express the ideas that lead to a built project.

Design is divided into five levels. Each level requires competency in the subordinate level(s).

A. Level IFundamental Design:

Level I is defined as individual lLearning experiences that require students to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards; use basic formal, organizational and environmental principles and the capacity of each to informwithin two-dimensional and three-dimensional design; spatial contexts and ordering systems; basic architectural andapplication of the fundamentals of both natural and formal ordering systems and the capacity of each; and articulating effectively and using representational media appropriate for the assignment. environmental design principles, beginning user consciousness with a familiarity of spatial analysis, natural and formal ordering systems, design process methodology, and development of communication skills using appropriate media; and design literacy.

B. Level IIProgramming and Site Design:

Learning experiences in which students are required to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria; 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.Level II is defined as individual learning experiences with emphasis on the environment, precedent, user-space study, investigative skills, and further design skill development; introduction of qualitative technical materials; a minimum proficiency in the design and communication of simple buildings with an introductory understanding of client need assessment, site (including existing building) assessment, construction and structural systems; and data analysis, programming, site analysis, and design.

C. Level IIIResearch and Investigative-Based Design:

Learning experiences that require students to utilize methods for gathering, assessing, recording, and comparatively evaluating relevant information and performance in order to support conclusions related to a specific project or assignment; to use theoretical and applied research methodologies and practices necessary in the design process; to examine and comprehend the fundamental principles present in relevant precedents and make informed choices about the incorporation of such principles into architecture projectsLevel III is defined as individual and group learning experiences with emphasis on simple and complex building case studies with applied research and qualitative technical input; individual and group projects; development of total building synthesis design skills including building envelope/enclosure systems and assemblies; a general proficiency in the complete design of simple buildings with a minimum ability to deal with complex buildings and multi-building complexes; site analysis and design, principles of sustainable design related to manmade and natural resources,

healthful environments, and reduced impact on the environment; and visual representation of each stage of the programming and design process including traditional and digital media.

D. Level IVIntegrated Design:

Learning experiences that require the student to evaluate options and reconcile the implications of design decisions across systems and scales; to synthesize variables from diverse and complex systems into an integrated architectural solution, while responding to environmental stewardship goals across multiple systems including building design and detailing, planning, programming with integrated structural, mechanical, environmental, building services systems, accessibility, site conditions, life safety, building enclosure systems and assemblies. Level IV is defined as individual or group learning that emphasizes the synthesis of complex building and multi-building complexes within the urban context; integration of technical information; ability to create technical drawings and specifications; general proficiency in the total synthesis of complex buildings and related systems; structural, environmental, service, transportation, communication, life-safety, and accessibility systems; and the social ramifications of planning and architecture. Studio learning at this level may integrate the use of digital media in design decision-making. Level IV requires collaborative group projects and requires mastery of Levels I, II, and III.

E. Level V: Level V is defined as individual or group learning that emphasizes comprehensive design and complex building design, planning, and urban design. Level V work must indicate a mastery of data collection, analysis, programming, planning, building design; an understanding of the basic principles of structural design, building service system design, building envelope/enclosure systems, landscape design; facility in other related knowledge and skills; and a full range of representational skills including traditional and digital media. Level V requires collaborative group projects and requires mastery of Levels I, II, III, and IV.

Satisfying deficiencies in design

All deficiencies in design must be satisfied in studio courses offered either within a professional degree program accredited by the NAAB or the CACB/CCCA or in a pre-professional architecture degree program offered at a four-year institution accredited by a U.S. regional accrediting agency.

Studios must be administered or monitored by a member of the design faculty and must be taken for academic credit.

A list of NAAB- and CACB/CCCA-accredited programs can be found at www.naab.org/architecture_programs/home.

www.naab.org/architecture_programs/www.naab.org/architecture_programs/www.naab.org/architecture_programs/.

Courses in graphic communication, computer-assisted design, and digital design media (e.g. building information modeling programs) may be used to fulfill Levels II-IV when they are clearly integrated with studio courses. If such courses are taken on their own and without integration in a specific studio, they will be allocated as electives. Completion of a comprehensive studio in Level IV or Level V is required.

All design studio courses must be approved by NAAB in advance.

54. Professional Practice

A total of at least nine twelve (129) semester credit hours are required with a minimum of three (3) in Laws and Regulations and three (3) in Ethics and Professional Conduct. At least three (3) hours must be

~~in:~~ The remaining six (6) must be distributed across the other three categories.

~~> Laws and Regulations~~

~~A. The other six (6) hours must be in the following categories with no more than three (3) hours in any one category:~~

~~B.~~A. ~~> Project Process~~Stakeholder Roles in Architecture (3 max)

~~C.~~B. ~~>~~ Project ~~Economics~~ Management (3 max)

~~D.~~C. ~~>~~ Business Management (3 max)

~~E.~~D. ~~> Technical Documentation~~Laws and Regulations (3 min)

~~F.~~E. ~~>~~ Ethics and ~~Social Responsibility~~Professional Conduct (3min)

A. ~~Project Process~~Stakeholder Roles in Architecture

~~Project Process~~Stakeholder Roles in Architecture is defined as the study of the relationships among key stakeholders in design process (client, contractor, architect, user groups, and local community) and the architect's role to reconcile stakeholder needs.

Acceptable topics include: Urban and community center design practice studios, and special topic courses on public good projects and professional practice courses identifying the roles and responsibilities of stakeholders.

~~entire range of activities involved in a typical architectural design project as it moves from inception through completion of construction. These activities include not only those which the architect carries out, but also those of other professionals.~~

~~Acceptable topics include bidding and negotiation, client relationships, leadership and collaboration, construction documents, contracts, design development, problem identification, project management, programming, site analysis, building code and accessibility analysis, and specifications.~~

B. Project ~~Economics~~ Management

Project ~~Economics~~ Management is defined as the study of the entire range of activities involved in a typical architectural design project as it moves from inception through completion of construction including methods for selecting consultants and assembling teams; identifying work plans, project schedules, and time requirements; and recommending project delivery methods.~~financial aspects of building, including the economics of development.~~

Acceptable topics include bidding and negotiation, client relationships, leadership and collaboration, construction documents, construction management, contracts, design development, problem identification, project management, programming, site analysis, building code and accessibility analysis, and specifications.~~building costs, cost and benefit analysis, cost control, development costs, estimating, finance, life-cycle costing, site acquisition and development, and value engineering.~~

C. Business Management

Business Management is defined as the study of the concepts, standards, and ~~procedures~~ practices related to different forms of organization for architectural practice~~, including private and corporate offices as well as public-sector organizations and agencies~~.

Acceptable topics include business management, financial management, risk management, office management, office organization, customer service, legal agreements, marketing, negotiating legal agreements, legal and licensure responsibilities, professional liability, risk management, and rules of professional ~~rules of~~ conduct.

D. Laws and Regulations

Laws and Regulations are defined as the study of the body of common law, legislation, codes and standards, and regulation in the United States~~, including rules of professional conduct~~ that affect architectural practice.

Acceptable topics include accessibility standards, barrier-free design, building codes, laws affecting architectural practice, environmental regulation, life-safety systems, professional liability, professional service contracts, professional registration, ~~professional rules of conduct,~~ tax laws, and zoning regulations. Courses in foreign law are NOT acceptable, but may be acceptable in the Electives subject area.

~~**E. Technical Documentation** Technical Documentation is defined as the study of the ability to prepare technically clear and accurate drawings, outline specifications, and models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.~~

E~~F~~. Ethics and ~~Social Responsibility~~Professional Conduct

Ethics and ~~Social Responsibility~~Professional Conduct are defined as the study of ~~the application~~ethical issues involved in the exercise of professional judgment ~~and leadership on ethical subjects regarding social, legal, political, and cultural issues~~ in architectural design and practice. ~~It~~ This also includes the role of the NCARB Rules of Conduct and the AIA Code of Ethics in defining professional conduct.~~architect's responsibility to work in the public interest, to respect historic assets, and to improve the quality of life for local and global societies.~~

Satisfying deficiencies in Practice

Relevant courses may be taken at any university, college, or community college that is accredited by one of the six regional accrediting associations in the United States: Middle States Association of Colleges and Schools, North Central Association of Colleges and Schools, New England Association of Schools and Colleges, Northwest Commission on Colleges and Universities, Southern Association of Colleges and Schools, and Western Association of Schools and Colleges.

All courses must be approved in advance by the NAAB.

If a U.S.-regionally accredited academic institution grants credit in relevant subjects on the basis of equivalency examinations administered by the institution, and if that credit is listed on an official transcript issued by that institution, then that credit can be used to satisfy these subject area requirements.

~~**5. Design** A total of at least 50 semester credit hours including at least one Level V design studio sequence, with a minimum of eight (8) hours and maximum of twelve (12) hours in each level:~~

~~> Level I~~

~~> Level II~~

~~> Level III~~

~~> Level IV~~

~~> Level V~~

~~The remaining ten (10) hours may be in any one or more levels of the Design subject area with no more than twelve (12) hours in any one level.~~

~~Design is defined as the analysis, synthesis, use of judgment, and development and communication tools and methods that architects use to understand, assess, bring together, and express the ideas that lead to a built project.~~

~~Design is divided into five levels. Each level requires competency in the subordinate level(s).~~

~~**A. Level I:**~~

~~Level I is defined as individual learning experiences within two-~~

~~dimensional and three-dimensional spatial contexts and ordering systems; basic architectural and environmental design principles, beginning user consciousness with a familiarity of spatial analysis, natural and formal ordering systems, design process methodology, and development of communication skills using appropriate media; and design literacy.~~

~~**B. Level II:**~~

~~Level II is defined as individual learning experiences with emphasis on the environment, precedent, user-space study, investigative skills, and further design skill development; introduction of qualitative technical materials; a minimum proficiency in the design and communication of simple buildings with an introductory understanding of client need assessment, site (including existing building) assessment, construction and structural systems; and data analysis, programming, site analysis, and design.~~

~~**C. Level III:** Level III is defined as individual and group learning experiences with emphasis on simple and complex building case studies with applied research and qualitative technical input; individual and group projects; development of total building synthesis design skills including building envelope/enclosure systems and assemblies; a general proficiency in the complete design of simple buildings with a minimum ability to deal with complex buildings and multi-building complexes; site analysis and design, principles of sustainable design related to manmade and natural resources, healthful environments, and reduced impact on the environment; and visual representation of each stage of the programming and design process including traditional and digital media.~~

~~**D. Level IV:** Level IV is defined as individual or group learning that emphasizes the synthesis of complex building and multi-building complexes within the urban context; integration of technical information; ability to create technical drawings and specifications; general proficiency in the total synthesis of complex buildings and related systems; structural, environmental, service, transportation, communication, life-safety, and accessibility systems; and the social ramifications of planning and architecture. Studio learning at this level may integrate the use of digital media in design decision-making. Level IV requires collaborative group projects and requires mastery of Levels I, II, and III.~~

~~**E. Level V:** Level V is defined as individual or group learning that emphasizes comprehensive design and complex building design, planning, and urban design. Level V work must indicate a mastery of data collection, analysis, programming, planning, building design; an understanding of the basic principles of structural design, building service system design, building envelope/enclosure systems, landscape design; facility in other related knowledge and skills; and a full range of representational skills including traditional and digital media. Level V requires collaborative group projects and requires mastery of Levels I, II, III, and IV.~~

~~**Satisfying deficiencies in design**~~

~~All deficiencies in design must be satisfied in studio courses offered either within a professional degree program accredited by the NAAB or the CACB/CCCA or in a pre-professional architecture degree program offered at a four-year institution accredited by a U.S. regional accrediting agency.~~

~~Studios must be administered or monitored by a member of the design faculty and must be taken for academic credit.~~

~~A list of NAAB- and CACB/CCCA-accredited programs can be found at www.naab.org/architecture_programs/.~~

~~Courses in graphic communication, computer-assisted design, and digital design media (e.g. building information modeling programs) may be used to fulfill Levels II-IV when they are clearly integrated with studio courses. If such courses are taken on their own and without integration in a specific studio, they will be allocated as electives. Completion of a comprehensive studio in Level IV or Level V is required.~~

~~All design studio courses must be approved by NAAB in advance.~~

6. ~~Elective Subjects~~Optional Studies

The minimum number of semester credit hours in each subject area listed above total 138~~144~~ ~~hours~~semester credit hours. The additional ~~16~~ 12 ~~hours~~ semester credit hours may be in any one or more of the five subject areas and/or acceptable ~~Electives~~Optional Studies.

Acceptable ~~Electives~~ topics in this area include architecture, business administration, computer science, engineering, interior design, landscape design, law, public administration, urban design, and other subjects that in the opinion of NAAB are acceptable toward ~~Electives~~Optional Studies.

NCARB Education Standard

A comparison of the current and proposed requirements

Current		Proposed	
Subject Area and Category	Semester Credit Hour Requirement	Subject Area and Category	Semester Credit Hour Requirement
General Education	45 Hours	General Education	45 Hours
A. Communication Skills	3 Hours min. in English Composition	A. Communication Skills	3 Hours min. in English Composition
B. Humanities and Arts	N/A	B. Humanities and Arts	N/A
C. Quantitative Reasoning	N/A	C. Quantitative Reasoning	N/A
D. Natural Sciences	N/A	D. Natural Sciences	N/A
E. Social Sciences	N/A	E. Social Sciences	N/A
History and Theory, Human Behavior, and Environment	16 Hours	History and Theory, and Human Behavior	12 Hours
A. History and Theory	6 Hours min.	A. History and Theory	6 Hours min.
B. Human Behavior	3 Hours min.	B. Human Behavior	3 Hours min.
C. Environment	3 Hours min.		
Technical Systems	24 Hours	Building Practices	27 Hours
A. Structural Systems	6 Hours min.	A. Structural Systems	6 Hours min.
B. Environmental Control Systems	6 Hours min.	B. Environmental Control Systems	6 Hours min.
C. Construction Materials and Assemblies	6 Hours min.	C. Construction Materials and Assemblies	6 Hours min.
D. Building Service Systems and Building Envelope/Enclosure Systems	3 Hours min.	D. Building Service and Building Enclosure Systems	3 Hours min.
		E. Technical Documentation	3 Hours min.
		F. Financial Considerations	3 Hours min.
Practice	9 Hours	Professional Practice	12 Hours
A. Project Process	3 Hours max.	A. Stakeholder Roles in Architecture	3 Hours max.
B. Project Economics	3 Hours max.	B. Project Management	3 Hours max.
C. Business Management	3 Hours max.	C. Business Management	3 Hours max.
D. Laws and Regulations	3 Hours min.	D. Laws and Regulations	3 Hours min.
E. Technical Documentation	3 Hours max.	E. Ethics and Professional Conduct	3 Hours min.
F. Ethics and Social Responsibility	3 Hours max.		
Design	50 Hours	Design	42 Hours
A. Level I	8 Hours min. / 12 Hours max.	A. Fundamental Design	8 Hours min.
B. Level II	8 Hours min. / 12 Hours max.	B. Programming and Site Design	8 Hours min.
C. Level III	8 Hours min. / 12 Hours max.	C. Research and Investigative Based Design	8 Hours min.
D. Level IV	8 Hours min. / 12 Hours max.	D. Integrated Design	8 Hours min.
E. Level V	8 Hours min. / 12 Hours max.		
Electives	16 Hours	Optional Studies	12 Hours
Total	160 Hours	Total	150 Hours