**Universidad Politécnica de Madrid**
Escuela Técnica Superior de Arquitectura de Madrid (ETSAM)

**2021 Visiting Team Report**
**Continuing NAAB International Certification**
**26-28 April 2021**

**B. Arch. (5 years) + M. Arch. (1 year)**

The National Architectural Accrediting Board

Date of Visit Three: 15–19 November 2014

**Vision:** The NAAB aspires to be the leader in establishing educational quality assurance standards to enhance the value, relevance, and effectiveness of the architectural profession.

**Mission:** The NAAB develops and maintains a system of accreditation in professional architecture education that is responsive to the needs of society and allows institutions with varying resources and circumstances to evolve according to their individual needs.

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**I. Summary of Visit**

a. Acknowledgments and Observations

*Acknowledgements*

The NAAB I-Cert team thanks the group at the Escuela Técnica Superior de Arquitectura de Madrid (ETSAM), working in tandem with Vice Rector Alberto Garrido, for their collaboration in coordinating the virtual visit, and in obtaining and organizing the materials the NAAB team requested for review. In particular, we thank Dr. Pilar Rodríguez Monteverde who worked with us day by day, answering all of our questions and requests for information. It is a monumental task to transfer into digital form a representative sample of the student work produced for the B. Arch. and M. Arch., especially when there is so much of it, and when the work is in a variety of formats.

We are aware that it required extraordinary efforts in special times: first COVID and then the historic January 2021 snowstorm that affected Madrid's power and internet service.

We thank the Universidad Politécnica de Madrid (UPM) Rector Guillermo Cisneros and his team for supporting the work necessary work for NAAB's I-Cert team review.

We appreciate ETSAM Director Manuel Blanco and his academic team for hosting us, and are very grateful to the faculty, students, academic and administrative staff, the head librarian, and the head of IT for making time to meet with us virtually.

We are grateful for the opportunity we had to attend reviews in two studios (1203-1301 Architectural Projects 1 and 2; and 718 Architectural Project 3) and a building systems class (2003 Technical Equipment Design). This gave the team a direct understanding of how ETSAM has resolved bimodal or hybrid teaching and learning in a discipline that requires a variety of communication means, analysis and simulation tools, and that exists in physical space.

*Observations*

The Escuela Técnica Superior de Madrid (ETSAM) of the Universidad Politécnica de Madrid (UPM) has international reach. The scholarship and practice of its distinguished faculty are known in architecture circles worldwide; the alumni are equally recognized. ETSAM's research into design, architectural history, urban design and planning, as well as building technology and pedagogy, all contribute to advancing the knowledge of the discipline and the practice of architecture.

The B. Arch. and M. Arch. curricula integrate the multiple forces and systems that shape a design. The learning progression starts from the fundamentals and reach complexity at different scales. Principles of sustainability are incorporated across the curriculum. Faculty and students participate in projects with communities from the micro to the macro: from the building lot to the block, from the neighborhood to the territory. The size of ETSAM offers many opportunities for students in the B. Arch. and M. Arch. degree programs to choose an area of focus. The ARQMentor program support the students' first encounter with a demanding academic career, facilitates forming connections with students in the higher levels, and promotes peer-to-peer learning.

ETSAM has demonstrated adaptability to remote teaching and learning when the campus was closed, and flexibility in adopting a hybrid model as it transitions to a fully open campus. It has developed ways to provide access to library resources and to necessary communication platforms and software. The coordination between the academic and administrative staff has facilitated the continuation of activities during closures and partial openings.

The virtual visit imposed significant limitations on the program and on the team, although it was the only way to conduct the visit. The energy and impromptu encounters of an on-site visit are not possible. A program having 383 faculty members and a combined B. Arch. and M. Arch. student body 3,280 makes a difference. The "blog" that provided access to documents and student work fragmented the content into discrete units to control file size. It was not possible to compare student work side by side, or to see all work for a given project simultaneously, as would typically occur in a team room. The required course information and student work was linked via three tabs: one for the syllabi, another for the representative student work, and the last for the course's passing rates. The briefs ("project assignment") for specific student work were not placed with the project files, but had to be found through the syllabi tab, usually requiring other links. In some cases, the briefs were not available, or were not synopsized and translated into English. The team spent considerable time on just navigating the blog to find the materials for review.

The NAAB's requirement for the program to highlight not more than two cells under a criterion per course on the SPC Matrix, proved to be unhelpful for a program that uses an integrated pedagogical approach model. Notwithstanding, in several instances the team found the evidence that demonstrated competence at the level prescribed in courses other than the ones identified in the two versions of the SPC matrix that the program prepared for the team's use. One had all courses that were related to the SPC, and the other had two or three marks.

Finally, the team appreciates all the efforts made by the ETSAM team entrusted to prepare the materials for the NAAB I-Cert review, ensuring the collection was complete and legible.

b. Conditions/Student Performance Criteria Not Achieved

| Conditions Not Described or Demonstrated | Conditions Not Met | SPC Not Met |
|---|---|---|
| | | **B.10** Financial Considerations **D.2** Project Management **D.3** Business of Practice |

c. Items to Address
In the 2014 NAAB Substantial Equivalency Visit #3, the team found the student performance criterion C.5 Practice Management was not met. The 2019 NAAB I-Cert Conditions places its requirements under criteria D.2 Project Management and D.3 Business Practices. The 2021 PSER submitted by ETSAM directed the team to the same course that was to provide the evidence in 2014: 1903 Architectural Regulation. The 2021 NAAB I-Cert team reviewed this and other required courses and did not find

sufficient evidence in the student work for D.2 and D.3 to be met. More detail on this can be found in the next section, "Progress Since the Previous Visit."

## d. Progress Since the Previous Visit

### II.2.2 Professional Degrees and Curriculum

**2014 Visit Three Team Assessment (2009 Conditions for Substantial Equivalency):** The visiting team continued to struggle with this criterion. The curriculum required to be completed by each student in order to be awarded a degree in architecture is heavily regulated by the government, and therefore the courses prescribed by the state are set in place. This leaves each Spanish university with limited avenues to modify or amend such prescribed curriculum.

Meeting the NAAB criteria for 30% of course work dedicated to a liberal arts education becomes a difficult criterion to achieve. Starting with the university college (school´s) organizational structure, as an independent entity, separate yet part of the overall institution the UPM School of Architecture is a standalone college with its own faculty that teaches all of the required courses. While the curriculum includes limited opportunities for electives, students cannot meet the NAAB criteria since such electives are not taken outside the school of architecture. Therefore the ETSAM curriculum cannot be modified to meet the NAAB requirement for 30% general studies course work. The program does offer a summer program where students from different schools take the same course, but it is still not enough to meet this criterion.

**2021 Visiting Team Assessment**:
☒ Condition II.2.2 is **Met**     ☐ Condition II.2.2 is **Not Met**

Required academic preparation for admission to higher education and to ETSAM includes general liberal arts education requirements to satisfy this Condition. See Part II: Section 2.2 for discussion.

**B.2 Accessibility:** *Ability* **to design sites, facilities, and systems to provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities**.

**2014 Visit Three Team Assessment (2009 Conditions for Substantial Equivalency):** The team found limited evidence that this criterion has been met. Even though there was some application of accessible design in the projects displayed, it was not as comprehensive as what would be expected in U.S. programs. It is the team's understanding that accessible design is a part of the architectural education and is required by local building codes. Such codes and standards are not as prescriptive as ADA standards and other US regulatory codes and regulations. The demonstration of accessible design did not meet the ability standards for this criterion.

**2021 Visiting Team Assessment**:   ☒ B.2 is **Met**   ☐ B.2 is **Not Met**

In the 2019 NAAB I-Certification Conditions the student performance criterion B.2 Accessibility was incorporated into two criteria: B.3 Codes and Regulations, and C.3 Integrative Design. Both are now met. More specific descriptions of the courses where evidence was found is under Part II, Section 1 Student Performance for B.3 and C.3.

**C.5 Practice Management**: *Understanding* of the basic principles of architectural practice management such as financial management and business planning, time management, risk management, mediation and arbitration, and recognizing trends that affect practice.

**2014 Visit Three Team Assessment (2009 Conditions for Substantial Equivalency):**
Although the syllabus for course 1903 (0570), Architectural Regulation was provided upon request which indicated that students are exposed to the basic principles of architectural practice management, the team could not find evidence in the exhibit in the team room of samples of any student course work to support the syllabus.

**2021 Visiting Team Assessment**:  ☐ C.5 is **Met**  ☒ C.5 is **Not Met**

In the 2019 NAAB Conditions for International Certification, the student performance criterion C.5 Practice Management is now criteria D.2 Project Management and D.3 Business Practices. The 2021 NAAB I-Cert visiting team received additional materials upon request to find evidence of students' understanding in the areas required. It did not find evidence at the prescribed level in work produced by students for required courses. See Part II, Section 1 SPC D.2 and D.3 for more information on this subject.

## II. COMPLIANCE WITH THE 2019 CONDITIONS FOR NAAB INTERNATIONAL CERTIFICATION

**Part One: Institutional Support and Commitment to Continuous Improvement**
This part addresses the commitment of the institution, and its faculty, staff, and students to the development and evolution of the program over time.

**Part One (I): Section 1—Identity and Self-Assessment**

**I.1.1 History and Mission:** The program must describe its history, mission, and culture and how that history, mission, and culture shape the program's pedagogy and development.

- Programs that exist within a larger educational institution must also describe the history and mission of the institution and how that shapes or influences the program.

- The program must describe its active role and relationship within its academic context and university community. This includes the program's benefits to the institutional setting, and how the program as a unit and/or individual faculty members participate in university-wide initiatives and the university's academic plan. This also includes how the program as a unit develops multi-disciplinary relationships and leverages opportunities that are uniquely defined within the university and its local context in the surrounding community.

**[X] Described**

*2021 Analysis/Review of I.1.1*: The history of ETSAM is described in detail in the PSER. A highlight is that the origins of the school are directly connected to the formal study of architecture in Spain dating back to the mid-18th century when the San Fernando Royal Academy of Fine Arts was established. By mid-19th century a special school of architecture was formed as an independent academic entity. A series of changes were implemented revising the vision, organization, and curriculum. The UPM was created after the Education Reform Act in 1970. The PSER notes that ETSAM has been ranked internationally in position number 35.

The Plan of Study in 1975 led to a reorganization that formed ETSAM. The ongoing Plan of Study of 2010 (Syllabus 2010) is the one that guides the B. Arch. and M. Arch. professional degree programs in architecture at ETSAM. It is the result of adapting the existing program to the European Higher Education Area (EHEA). The process was launched after the publication of the Bologna Declaration on the European Space for Higher Education in 1999. After approval and application of several regulations a Royal Decree RD 55/2005, January 25th was enacted. However, there was disagreement on the impact of the law on the architecture degree, and after protests and negotiations, there was a succession of laws: The Decree RD 1393/2007 was modified by RD 861/2010, July 2nd. At present, the Architect's degree is regulated in accordance with the Ministerial Order dated 07/23/2010.

The primary mission of ETSAM at UPM—a public institution of higher learning—is providing quality education at both undergraduate and graduate levels that "meet the needs of society and the building and urbanism sector; and the challenges of science, technology, and innovation related to them." It is committed to contributing to development through standards of excellence and innovation. It positions itself as "the most important center in Spain in advanced rese, innovation and technology transfer in the field of Architecture and Urbanism" by supporting post-professional, post-graduate studies and applied research. Besides the B. Arch. and the M. Arch., ETSAM offers nine other master's degree programs and five areas for doctoral studies.

UPM has several campuses. ETSAM is located within Ciudad Universitaria. In this campus there are seven other schools offering degrees in construction and engineering, three research institutes, and a college of physical activity and sports sciences. In its website, UPM states its commitment to promote the interaction between schools, colleges, institutes, and research centers in its campuses. ETSAM participates in more than fifteen campus-wide research groups. They deal with a diversity of subjects from building acoustics to bioclimatic architecture, to habitat and culture, geometries of contemporary architecture, sustainable construction methods, and collective housing. There are also endowed professorships (Cátedras U+E) for research and innovation with external entities. Some are with private industry; others are with nonprofit organizations. Importantly, a member of the ETSAM faculty is the Director of the UNESCO Chair on Gender Equality, Policies in Science, Technology and Innovation.

**I.1.2 Learning Culture:** The program must demonstrate that it provides a positive and respectful learning environment that encourages optimism, respect, engagement, and innovation between and among the members of its faculty, student body, administration, and staff in all learning environments, both traditional and non-traditional.

- The program must describe how faculty, staff, and students been able to participate in the development of policies related to learning culture and the ongoing assessment and evaluation of those policies.
- The program must describe the ways in which students and faculty are encouraged to learn both inside and outside the classroom through individual and collective learning opportunities that include, but are not limited to, participation in field trips, professional societies and organizations, honor societies, and other program-specific or campus-wide and community-wide activities.

**[X] Described**

***2021 Analysis/Review of I.1.2:*** The UPM Department of Quality Strategy manages academic affairs, from policy to curricula, based on an internal quality review process. It generates a draft document that is shared with a work committee. The various constituencies that form ETSAM are represented on the committee: teaching and research faculty are represented through their departments' boards, elected student representatives, and administrative and service staff represented by the elected union branch. The work committee is responsible for "incorporating all suggestions and drawing up the definitive text." The final document is submitted to the ETSAM's Board for approval and dissemination.

Faculty, students, and administrative and service staff are represented by a union. Members of the university community are elected to the University Council, which is the body charged with creating, modifying, and maintaining policy. Committees are formed with representatives from administration, faculty, students and staff to work on specific policies at the level of the university, the school, and department.

The program has described a rich cultural environment that includes visiting faculty, lecture series, opportunities for international travel, participation in research, internships, and cultural opportunities on campus and in Madrid. Required classes at the M. Arch. level including 712 Projects Design Workshop 1, 718 Architectural Design Projects Workshop 3, and 719 Final Master Project are examples of research and learning that encourage students to assume responsibility as professionals in society.

The learning guides available for each course are the student-teacher contracts. UPM supports and funds research on educational innovation via the Education Innovation Groups. The Institute of Education Sciences (ICE) offers courses on technologies applied to teaching, methodological strategies within the framework of the European Higher Education Area (EHEA), basic training for research work, and personal and academic development.

Since 2020 the COVID pandemic has impacted ETSAM's learning environment. Currently the UPM is working on opening its facilities for longer hours, adapting learning spaces for hybrid interaction, defining ways to stage field trips, encouraging collaborations with external organizations, and hosting events on-campus and outside.

**I.1.3 Social Equity:** The program must describe how social equity is defined within the context of the institution or the country in which it is located.

- The program must describe its approach to providing faculty, students, and staff with a culturally rich educational environment in which each person is equitably able to learn, teach, and work.
- The program must describe how its graduates have been prepared to be sensitive to differences in gender, culture, and customs, and be encouraged to assume responsibility as professionals in society.

**[X] Described**

***2021 Analysis/Review of I.1.3***: Since 2019 Universidad Politécnica de Madrid (UPM) is one of the universities and research centers that have obtained the competitive European Human Resources Strategy for Researchers (HRS4R) certification. This initiative, launched by the European Commission, acknowledges institutions that work to guarantee open, transparent researcher hiring processes based on merit and ability and following the principles set by the European Charter for Researchers and the Code of Conduct.

Social equity is required by UPM policy and applies to academic freedom in teaching, research and collaboration. Excerpts of the policies are included in the PSER. Other statewide laws requiring equity apply to administrative and service staff. The university's Ombuds Office "safeguards the respect for the rights and freedoms of the faculty members, research staff, students and administrative and service staff." Members of the university community are elected to the University Senate, which is the body charged with creating, modifying, and maintaining policy.

Discussions with program representatives revealed a sensitivity to differences in gender, culture and customs. The program has described a rich cultural campus environment in Madrid that includes lectures by international guests, exhibits, concerts, sports, and campus collaborations across disciplines that enhance and encourage students to assume responsibility as professionals in society.

**I.1.4 Defining Perspectives**: The program must describe how it is responsive to the following perspectives or forces that affect the education and development of professional architects. The

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response to each perspective must further identify how these perspectives will continue to be addressed as part of the program's long-range planning activities.

A.  **Collaboration and Leadership**. The program must describe its culture for successful individual and team dynamics, collaborative experiences, and opportunities for leadership roles.

B.  **Design**. The program must describe its approach to developing graduates with an understanding of design as a multidimensional process involving problem resolution and the discovery of new opportunities that will create value.

C.  **Professional Opportunity**. The program must describe its approach to educating students on the breadth of professional opportunities and career paths, including the transition to internship and licensure.

D.   **Stewardship of the Environment**. The program must describe its approach to developing graduates who are prepared to both understand and take responsibility for stewardship of the environment and natural resources.

E.  **Community and Social Responsibility**. The program must describe its approach to developing graduates who are prepared to be active, engaged citizens able to understand what it means to be professional members of society and to act ethically on that understanding.

**[X] Described**

**Analysis/Review of I.1.4:**

A.  *Collaboration and Leadership:* The program describes an approach to collaboration and leadership that allows students to thrive in an environment where they can seek knowledge of the arts, including architecture, painting, and sculpture. Students can collaborate with professors and/or architects outside of the university in the development of projects. These opportunities allow students to develop and refine their coordination and leadership skills. Discussions with faculty reinforced the program's approach in the PSER.

B.  *Design:* The program describes a fully integrated, multi-disciplinary approach to architectural design that includes a diverse range of required subjects in both the arts and the sciences. Discrete departments within ETSAM include Graphic Ideation of Architecture, Architectural Composition, Urban and Regional Planning, Geometry and Applied Mathematics, Construction and Technology in Architecture, Building Structures and Physics, and Department of Architectural Projects. Students are provided with opportunities for collaborative learning, research, technical proficiency, strong land and urban planning analysis and the exploration of unique and often self-selected architectural programs. ETSAM students are exposed to and provided with the tools to explore problem resolutions and to discover new opportunities that create value throughout their entire academic experience.

C.  *Professional Opportunity:* The University is under Spanish legislation that requires two official degrees: B. Arch. (Grado en Fundamentos de la Arquitectura) and M. Arch. (Master Habilitante en Arquitectura] to directly qualify graduates to acquire their professional license entitling them–without any other requirement—to begin work as an architect and to assume all the rights and responsibilities conferred by the law of

attributions. The PSER describes in detail, the educational approach to prepare graduates for practice according to the law. Most of the subjects taught in the program have a direct bearing on the profession. The education includes the breadth of professional knowledge required to practice. Discussions with faculty confirmed the above. Discussions also elaborated on professional opportunities afforded to students locally, nationally, and internationally.

D. ***Stewardship of the Environment***: The program describes its approach to stewardship of the environment through a curriculum that provides collaborative and multidisciplinary training integrating planning, design, historic preservation, site, engineering, and technical analysis. Students are prepared to practice environmental initiatives that include historic preservation, the design of sustainable, durable, and energy-efficient new buildings, as well as planning for livable communities.

E. ***Community and Professional Responsibility***: The program is resolute about giving its students sufficient opportunities to act mindfully as professional architects, and to display a deep understanding of the importance of their field and the activities they may engage in. Students are taught to consider the society they will serve, the clients for whom they will work, and the environment in which their building designs will be constructed.

**I.1.5 Long-Range Planning:** An ICert degree program must demonstrate that it has a planning process for continuous improvement that identifies multiyear objectives within the context of the institutional and program mission and culture. In addition, the program must describe its process for collecting data and using the data to inform its plan for continuous improvement.

**[X] Described**

***2021 Analysis/Review of I.1.5***: The UPM and ETSAM goal commitment was clearly established after the Quality Institutional Program (Programa Institucional de Calidad, PIC) was launched in 2004 to define the procedures used to develop the school's quality plans.

All Madrid universities are reviewed by Madrid + d Foundation in association with Madrid Regional Education Department (Consejería de Educación, Juventud y Deportes de la Comunidad de Madrid) by delegation of ANECA (National Agency for Quality Assessment and Accreditation). Policies for faculty improvement and grants for educational innovations and training activities are provided annually for research, personal and academic development. An External Assessment Report is generated, noting both best practices and recommendations for areas requiring improvement, and identifying areas of concerns that are not acceptable and must be fulfilled.

All university-offered degree programs are evaluated using the Internal Quality Guarantee System (SIGS). The school or unit submits a self-evaluation and a validation report for each degree on an annual basis. The self-report contains qualitative analysis of results, and quantitative indicators. It evaluates the level to which goals and objectives are being achieved, assesses the effectiveness of follow-up mechanisms for implementing changes triggered by recommendations, and checks how well concerns raised earlier have been resolved. A committee of experts monitors the university response to recommendations. Survey data are also used for the evaluations measuring student and faculty satisfaction, as well as that of alumni and employers.

A self-assessment report provides qualitative analysis of degree qualifications, based on the Validation report from ANECA. A review is conducted annually using an internal self-

assessment procedure regulated under the Internal Quality Guarantee System (SIGC). The program describes procedures for evaluating student satisfaction and student academic performance. Student representatives, teaching and research staff (selected through departmental boards), and administrative and service staff (represented by the elected union members) meet as part of the Department of Quality Strategy. Learning guides are created for each subject and submitted for annual reviews.

### I.1.6 Assessment:

A. **Program Self-Assessment Procedure**s: The program must demonstrate that it regularly assesses the following:

- How well the program is progressing toward its mission and stated objectives.

- Progress against its defined multiyear objectives.

- Strengths, challenges, and opportunities faced by the program while continuously improving learning opportunities.

The program must also demonstrate that results of self-assessments are regularly used to advise and encourage changes and adjustments to promote student success.

B. **Curricular Assessment and Development:** The program must demonstrate a well-reasoned process for curricular assessment and adjustments, and must identify the roles and responsibilities of the personnel and committees involved in setting curricular agendas and initiatives, including the curriculum committee, program coordinators, and department chairs or directors.

**[X] Described**

**2021 Analysis/Review of I.1.6**: Assessment procedures are described as mandated by university procedures. Those procedures include an annual quality plan, an assurance system, and an improvement plan. They emphasize that in the case of professional degree programs, since students are eligible to practice immediately after graduation, their assessments must incorporate Procedure PR-CL-006 Orientation and Labor Insertion. It analyzes the assimilation of the program's graduates into the workplace and seeks ways to improve that process.

ETSAM has an Internal Quality Assurance System (SIGC)and generates an Annual Quality Plan. The professional degree programs operate under the ANECA (National Agency for Quality Assessment and Accreditation) Assessment Curriculum Validation Model.

The PSER describes the process that ETSAM has in place to assess on a regular basis the progress toward its mission and objectives: The assessment is directed by UPM and is adjusted to ETSAM's various degree programs. The ETSAM Director's team, the School Council, the Academic Committee, and the Department Council are involved in the assessment and development of the curricula.

In 2016 the M. Arch. degree was re-accredited after the ANECA and Madri + d Foundation review. In 2017 the B. Arch. degree was re-accredited by the same entities. An Improvement Plan was not required. The program has described its actions to improve the results from the 2014 NAAB Substantial Equivalency Visit #3 that included the creation of additional curriculum on accessibility. Data on the assessments of faculty, students, and graduates were obtained from annual surveys and a new advertising program has been implemented to increase survey participation. The next review for the M. Arch. was set for 2021, and during the NAAB I-Cert

virtual site visit, Guillermo García-Badell participated as an observer for the Madri + d Foundation.

Among the indicators that ETSAM-UPM has been working to determine the efficiency of the self-assessment and quality improvement processes are the statistics for years to graduation (graduation rates), retention (drop-out rates), and the course passing rates (efficiency rates). In all three areas the M. Arch. has met or surpassed the goals established.

In 2015 the performance rate was introduced as another measure of efficiency. It is a formula applied to each student's academic record that establishes the number of credits a student will be allowed to enroll in the next academic session. The implementation of the performance rate has had a significant impact on the graduation and drop-out rates among students in the B. Arch. and M. Arch. programs.

**Part One (I): Section 2—Resources**

**I.2.1 Human Resources and Human Resource Development:** The program must demonstrate that it has appropriate human resources to support student learning and achievement. This includes full- and part-time instructional faculty; administrative leadership; and technical, administrative, and other support staff.

- The program must demonstrate that it balances the workloads of all faculty to support a tutorial exchange between the student and the teacher that promotes student achievement.

- The program must demonstrate that faculty and staff have opportunities to pursue professional development that contributes to program improvement.

- The program must describe the support services available to students in the program, including, but not limited to, academic and personal advising, career guidance, and internship or job placement.

**[X] Demonstrated**

**2021 Team Assessment of I.2.1:** The faculty and staff appear appropriate to support the functions of ETSAM, although the economic crisis of recent years, and the ongoing pandemic, have had some effect on faculty and staff levels. The number of professors was reduced from 428 to 383 between 2014 and 2020, but it has now stabilized, and the growth pipeline is again in place, with new faculty being hired in the last year. As a result of the pandemic ETSAM saw some staff reductions in the IT department, though it does not seem to have affected its ability to pivot quickly and provide technological solutions in transitioning the school to a fully remote (now hybrid) model.

Faculty and staff enjoy several opportunities for professional development within the university: Spanish Law (Ley Orgánica 11/1983) provides for full-time members of the faculty who are architects to engage in scientific, technical, and artistic work. They can contract with private or public organizations, and the work is considered part of their research activity. This is managed through the UPM's Office for Technological Transfer (OTT), and a small percentage is retained by the University for infrastructure and resources. Part-time faculty can independently engage in private practice as long as it is a "compatible" activity.

ETSAM maintains close links with the Colegio Oficial de Arquitectos de Madrid (COAM) and the Consejo Superior de los Colegios de Arquitectos deEspaña (CSCAE), and many faculty members serve on their committees.

As a large, public institution, processes are formalized and are fairly standard; there are procedures for the request of sabbaticals, applications for teaching and research grants, and standardized compensation structures. The UPM Mobility Program houses training and the administration of several exchange programs at the university level, including the Erasmus Program, which allows architecture faculty to teach in other European institutions, facilitating cultural exchange. The Institute of Education Sciences (ICE) provides training and development of professors through pedagogical and methodological innovation and implementation of technologies for teaching. Staff indicated there are additional personal and professional development courses accessible to them as public employees outside of the UPM structure.

The staff indicated that students have access to academic advising through the ETSAM's office, and students indicated that professors are available to address any tutoring or academic needs. Students can access scholarship and job opportunities through the ETSAM website. The PSER explains that the Employment Guidance and Information Center (COIE) at UPM manages internships for all students. Although students are not required to participate, ETSAM encourages students to take advantage of internships offered in architecture and in business. ETSAM organizes career fairs in collaboration with companies and governmental and non-governmental entities. It promotes students' abilities through exhibitions and publications.

**I.2.2 Physical Resources:** The program must describe the physical resources available and how they support the pedagogical approach and student achievement.

Physical resources include, but are not limited to, the following:

- Space to support and encourage studio-based learning.

- Space to support and encourage didactic and interactive learning, including labs, shops, and equipment.

- Space to support and encourage the full range of faculty roles and responsibilities, including preparation for teaching, research, mentoring, and student advising.

- Information resources to support all learning formats and pedagogies in use by the program.

If the program's pedagogy does not require some or all of the above physical resources, for example, if online course delivery is employed to complement or supplement on-site learning, then the program must describe the effect (if any) that online, on-site, or hybrid formats have on digital and physical resources.

**[X] Demonstrated**

**2021 Team Assessment of I.2.2**: The PSER describes the physical resources with plans. Since the team was unable to visit the school, a video was made that provided visual access to the variety of spaces available. It included the spaces that have been recently modified for hybrid teaching and learning. ETSAM's building complex is in University City, one of Madrid's historic districts. The location is accessed through public transportation and through a new city-wide bicycle program. The facilities provide space for studio-based learning, for faculty research, and for teaching agendas. Additions and restoration of spaces have increased

comfort and accessibility. During the pandemic, 25 classrooms were adapted to facilitate hybrid, synchronous teaching. In addition, the program provided multiple software platforms accessed via the ETSAM's server so that students could continue working with advanced modeling programs while away from campus.

A policy is in place for reviewing, modifying and –where necessary–proposing measures for the optimization of physical resources. In conflict with an austerity program for building optimization, ETSAM provides the maximum of hours allowed for student access. The facility also provides space for student organizations and for campus-run and program-specific activities.

**I.2.3 Financial Resources:** The program must demonstrate that it has appropriate financial resources to support student learning and achievement.

**[X] Demonstrated**

**2021 Team Assessment of I.2.3**: Much of the ETSAM's financial resources are controlled by the central government and the Autonomous Community which are transferred to the university and from the university to the ETSAM. The PSER describes the funding received for operating costs and investment. It does not include the 10%–20% received as grants by the various departments of the school, nor does it include those generated by postgraduate courses, agreements and projects subscribed with departments; it does not include staff, faculty and services costs which are managed directly by the university; and does not include other expenses, such as general studentships, also managed centrally by the university.

The PSER explains that continuous investment has been made in upgrading ETSAM to conform to the Bologna Process and the European Higher Education Area. The library, classrooms and workshops have been partially remodeled, and research and study areas have been created. Conference rooms, space for educational innovation, videoconferencing and computer facilities have been added. ETSAM notes that it is also equipping facilities with furniture and adding audiovisual and computer resources to fulfill its mission. The improvements achieved through this investment are ETSAM's evidence for arguing that they are in an excellent position in terms of infrastructure. As much of the finances are controlled by others outside ETSAM and the UPM, ETSAM demonstrates that it has the appropriate financial resources and is managing the finances very well, considering that most fiduciary decisions are made at the government level, and UPM is a public institution of higher education. Evidence of financial resources was found in the PSER and in discussions with university administration.

**I.2.4 Information Resources:** The program must demonstrate that all students, faculty, and staff have convenient, equitable access to literature and information, as well as appropriate visual and digital resources that support professional education in the field of architecture.

Further, the program must demonstrate that all students, faculty, and staff have access to architecture librarians and visual-resource professionals who provide information services that teach and develop the research, evaluative, and critical thinking skills necessary for professional practice and lifelong learning.

**[X] Demonstrated**

**2021 Team Assessment of I.2.4:** The program has a generous library with physical and digital access to all students, faculty, and staff. The resources are notable. The library is part of the Spanish University Library Network with a physical component in the School of Architecture. An

impressive support system serves the ETSAM with both a physical presence and digital support. The ETSAM library maintains strong links with other organizations and engages in library cooperation programs at regional, national, and international levels.

## I.2.5 Administrative Structure and Governance

- **Administrative Structure:** The program must describe its administrative structure and identify key personnel within the context of the program and the school, college, and institution.

- **Governance:** The program must describe the role of faculty, staff, and students in both program and institutional governance structures. The program must describe the relationship of these structures to the governance structures of the academic unit and the institution.

**[X] Demonstrated**

**2021 Team Assessment of I.2.5**: UPM and ETSAM have a well-defined and established administrative structure. The top administrative position for the school is the Dean (Director ETSAM), an elected position operating on a four-year term. The "free and secret ballot" elections include participation from permanent and tenured professors, students, staff, and temporary professors. In recent years, the campaigns leading up to the elections have included candidate platforms, outlining each candidate's vision for the school. Any permanent professor is eligible to run for this position. During the NAAB I-Cert review process in spring 2021, the current Director, Manuel Blanco, ran for and won the election.

Below the Dean, the Vice-Deans (Subdirectores) are appointed by the Dean in conjunction with the School Board. The five positions are: Academic Affairs, Students, Postgraduate and PhD studies, Academic Management and Faculty, and Research.

Four Assistant Vice-Deans are also appointed in consultation with the Board, for the following positions: Faculty Mobility, Laboratories Management, Management of Alumni Association, and Quality Management. An Academic Secretary leads the process of registration, recordkeeping, and archiving.

The ETSAM four governing bodies are: the School Council (Junta de Escuela), which sets general objectives and guidelines; the Academic Commission (Comisión Académica), a consulting organism that analyzes the teaching program chart and submits it for approval to the School Council; the Governing Commission (Comisión de Gobierno), which assists the Dean in governance, and the Department Council, which evaluates faculty and teaching quality, approves syllabi, and allocates resources for teaching and research.

The members of the School Council are also elected. Representation on the School Council includes permanent professors, temporary professors, and staff, who serve four-year terms. Students also hold Council positions, though they are elected on a yearly basis.

At the university level there is a Governing Council (Consejo de Gobierno) and the University Senate (Claustro Universitario). Both have faculty, staff, and student members. The Council has permanent working committees. There is also a Social Board that "promotes participation of external organizations in the UPM."

**PART TWO (II): EDUCATIONAL OUTCOMES AND CURRICULUM**
This part has four sections that address the following:

- **STUDENT PERFORMANCE**. This section includes the Student Performance Criteria (SPC). Internationally certified degree programs must demonstrate that graduates are learning at the level of achievement defined for each of the SPC listed in this part. Compliance will be evaluated through the review of student work.

- **CURRICULAR FRAMEWORK**. This section addresses institutional quality assurance and national authorization, credit hour requirements, general education, and access to optional studies.

- **EVALUATION OF PREPARATORY EDUCATION**. The NAAB recognizes that students entering a professional degree program from a preprofessional program and those entering from a non-preprofessional degree program have different needs, aptitudes, and knowledge bases. In this section, programs are required to demonstrate the process by which incoming students are evaluated and to document that the SPC expected to have been met in educational experiences at other institutions have indeed been met.

- **PUBLIC INFORMATION**. The NAAB expects internationally certified degree programs to provide information to the public about International Certification activities and the relationship between the program and the NAAB, admissions and advising, and career information.

Programs demonstrate their compliance with Part Two in four ways:

- A narrative report that briefly responds to each request to "describe, document, or demonstrate."

- A review of evidence, artifacts, and observations by the visiting team, as well as through interviews conducted during the visit.

- A review of student work that demonstrates student achievement of the SPC at the required level of learning.

- A review of websites, URLs, and other electronic materials.

**Part II, Section 1: Student Performance—Education Realms and Student Performance Criteria**

**II.1.1 Student Performance Criteria:** The SPC are organized into realms to more easily understand the relationships between individual criteria.

*Instructions to the team:*

1. *When an SPC is MET, the team is required to identify the course or courses where evidence of student accomplishment was found.*

2. *If an SPC is NOT MET, the team must include a narrative that indicates the reasoning behind the team's assessment.*

3. *After completing the VTR, the team must prepare an SPC matrix (using a blank matrix provided by the program) that identifies the courses in which the team found the evidence of student achievement. The team's matrix is to be appended to the VTR as Appendix 2.*

**Realm A: Critical Thinking and Representation:** Graduates from NAAB-accredited programs must be able to build abstract relationships and understand the impact of ideas based on the research and analysis of multiple theoretical, social, political, economic, cultural, and environmental contexts. This includes using a diverse range of media to think about and convey architectural ideas, including writing, investigative skills, speaking, drawing, and model making.

Student learning aspirations for this realm include:

- Being broadly educated.
- Valuing lifelong inquisitiveness.
- Communicating graphically in a range of media.
- Assessing evidence.
- Comprehending people, place, and context.
- Recognizing the disparate needs of client, community, and society.

**A.1**  **Professional Communication Skills:** *Ability* to write and speak effectively and use appropriate representational media for both, within the profession and with the public.

**[X] Met**

**2021 Team Assessment of A.1:** Evidence of student achievement at the prescribed level was found in student work prepared in teams for: 1304 City and Urban Planning, 1602 The City and the Built Environment, 1801 Architectural Projects 7, and 1904 Urban and Land Planning; and individually for 2005 Final Degree Project.

**A.2**  **Design Thinking Skills:** *Ability* 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.

**[X] Met**

**2021 Team Assessment of A.2:** Evidence of student achievement at the prescribed level was found in student work prepared for: 1701 Architectural Projects 6, 1801 Architectural Projects 7 prepared in teams.

**A.3**     **Investigative Skills:** *Ability* to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.

**[X] Met**

**2021 Team Assessment of A.3:** Evidence of student achievement at the prescribed level was found in student work prepared in teams for: 1201 Drawing, Analysis and Creation II, 1205 History of Art and Architecture, 1404 Architectural Analysis, 1701 Architectural Projects 6, 1904 Urban and Land Planning; and prepared individually for 2005 Final Degree Project.

**A.4**     **Architectural Design Skills:** *Ability* to effectively use basic formal, organizational, and environmental principles, and the capacity of each to inform two- and three-dimensional design.

**[X] Met**

**2021Team Assessment of A.4:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for: 1201 Drawing, Analysis and Creation II, 1301 Architectural Projects 2, 1401 Architectural Projects 3, 1501 Architectural Projects 4, 1601 Architectural Projects 5 among all the design sequence courses.

Throughout the coursework reviewed, students demonstrate ample competence, dexterity, and understanding that allows them to implement and execute tasks and assignments in the two- and three-dimensional realm. Additionally, the work presented holds an outstanding level of detail and graphic aptitude across the entirety of the program.

**A.5**     **Ordering Systems:** *Ability* to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.

**[X] Met**

**2021 Team Assessment of A.5:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for: 1101 Geometry and Architecture drawing 1, 1201 Drawing, Analysis and Creation II, 1301 Architectural Projects 2, 1401 Architectural Projects 3, 1501 Architectural Projects 4, 1601 Architectural Projects 5, and 1704 Architectural Composition, among other courses.

With a heavy emphasis on ordering systems throughout the core years, students enter the later portion of the degree with a proficient understanding on how ordering systems affect both two- and three-dimensional design and how to implement these systems in a focused manner.

**A.6**     **Use of Precedents:** *Ability* to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices regarding the incorporation of such principles into architecture and urban design projects.

**[X] Met**

**2021 Team Assessment of A.6***: Evidence of student achievement at the prescribed level was found in student work prepared for 1201 Drawing, Analysis and Creation II, 1501 Architectural Projects 4, 1701 Architectural Projects 6, and 1702 Construction and Building Technology 3.

**A.7**      **History and Culture:** *Understanding* of the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, and technological factors.

**[X] Met**

**2021 Team Assessment of A.7:** Evidence of student achievement at the prescribed level was found in student work prepared for 1104 Introduction to Architecture, 1205 History of Art and Architecture, 1404 Architectural Analysis, 1504 History of Architecture and Town Planning during the Modern and the Contemporary Period, 1603 Landscape and Garden Design/History of Landscape and Garden Design, and 1701 Architectural Projects 6.

**A.8**      **Cultural Diversity and Social Equity:** *Understanding* of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to buildings and structures.

**[X] Met**

**2021 Team Assessment of A.8:** Evidence of student achievement at the prescribed level was found in student work prepared for 1304 The City and Town Planning, 1404 Architectural Analysis, 1501 Architectural Projects 4, 1602 The City and the Built Environment, 1701 Architectural Projects 6, and 1802 Urban Project Urban Planning.

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**Realm A. General Team Commentary – Critical Thinking and Representation:** Students at ETSAM have an integrated knowledge of architectural design elements, principles, and process including an understanding of site history and conditions, and design for sustainable buildings and communities.

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**Realm B: Building Practices, Technical Skills and Knowledge:** Graduates from internationally certified degree program must be able to comprehend the technical aspects of design, systems, and materials and be able to apply that comprehension to architectural solutions. In addition, the impact of such decisions on the environment must be well considered.

Student learning aspirations for this realm include:

- Creating building designs with well-integrated systems.
- Comprehending constructability.
- Integrating the principles of environmental stewardship.
- Conveying technical information accurately.

**B.1**          **Pre-Design:** *Ability* to prepare a comprehensive program for an architectural project, which must include 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.

**[X] Met**

**2021 Team Assessment of B.1:** Evidence of student achievement at the prescribed level was found in student work prepared for 1203 Architectural Design 1, 1305 Curves and Surfaces, 1701 Architectural Design 6, 711 End of Studies Architectural Composition Workshop, and 712 End of Studies Architectural Design Projects Workshops 1.

**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.

**[X] Met**

**2021 Team Assessment of B.2:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for 1602 The City and the Built Environment, 1802 Urban Project, 1904 Urban and Land Planning, 714 Urban and Regional Planning Workshop, and 719 Final Master Project.

Projects demonstrate high competence in site design, applying knowledge to map topography and topology, vegetation, watersheds, soil types, and wind and solar orientation; and responding to the urban fabric. Student projects involved the adaptive use of historic buildings, as well as new construction and communities designed for climate and responsive to all site conditions.

**B.3**          **Codes and Regulations:** *Ability* to design sites, facilities, and systems that are responsive to relevant codes and regulations and include the principles of local life-safety and accessibility standards.

**[X] Met**

**2021 Team Assessment of B.3:** Evidence of student achievement at the prescribed level was found in student work prepared for 1404 Architectural Analysis, 1703 Structural Design 3, 1902 Soils Mechanics, 1903 Architectural Regulation, 1904 Urban and Land Planning, 2001 Building and Technology Systems Design, 2003 Technical Equipment and Services Design, 717 Building Structures Project Workshop. Coursework is thorough. The program intermixes regulations, codes, and building laws with accessibility.

**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.

**[X] Met**

**2021 Team Assessment of B.4:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for 1202 Geometry and

Architectural Drawing II, 2001 Building and Technology Systems Design, and 717 Building Structures Project Workshop. Student design work is developed to a great level of detail and precision.

**B.5**        **Structural Systems:** *Ability* to demonstrate the basic principles of structural systems and their ability to withstand gravity, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.

**[X] Met**

**2021 Team Assessment of B.5:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for 1302 Physical Mechanics, 1402 Structures 1, 1503 Structural Design 2, 1703 Structural Design 3, 1902 Soil Mechanics, and 2002 Structural Design. Calculation and design of structures is completed to a high level of detail for structures of different scales and complexity.

**B.6**        **Environmental Systems:** *Ability* to demonstrate the principles of environmental systems' design, how design criteria can vary by geographic region, and the tools used for performance assessment. This demonstration must include active and passive heating and cooling, solar geometry, daylighting, natural ventilation, indoor air quality, solar systems, lighting systems, and acoustics.

**[X] Met**

**2021 Team Assessment of B.6:** Evidence of student achievement at the prescribed level was found in student work prepared for 1803 Technical Equipment and Services, 1804 Electric, Lighting and Media Technologies, 2003 Technical Equipment and Services Design, and 716 Construction and Technology Project Workshop.

**B.7**        **Building Envelope Systems and Assemblies:** *Understanding* of the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

**[X] Met**

**2021 Team Assessment of B.7**: Evidence of student achievement at the prescribed level was found in student work prepared for 1405 Construction and Building Technology 1, 1702 Construction and Building Technology 3, 2001 Building and Technology Systems Design, .711 End of Studies Project Technical Workshop: Architectural Composition, 716 End of Studies Project Technical Workshop: Construction and Technology Project Workshop, and 717 Building Structures Project Workshop.

**B.8**        **Building Materials and Assemblies:** *Understanding* of the basic principles used in the appropriate selection of interior and exterior construction materials, finishes, products, components, and assemblies based on their inherent performance, including environmental impact and reuse.

**[X] Met**

**2021 Team Assessment of B.8:** Evidence of student achievement at the prescribed level was found in student work prepared for 1303 Building Materials, 1502 Construction and Building Technology 2, 1702 Construction and Building Technology 3, 716 Construction and Technology Workshop, and 717 Building Structures Project Workshop.

**B.9** **Building Service Systems:** *Understanding* of the basic principles and appropriate application and performance of building service systems, including lighting, mechanical, plumbing, electrical, communication, vertical transportation, security, and fire protection systems.

**[X] Met**

**2021 Team Assessment of B.9:** Evidence of student achievement at the prescribed level was found in student work prepared for 1502 Construction and Building Technology 2, 1801 Architectural Projects 7, 2001 Building and Technology Systems Design, 2003 Technical Equipment and Services Design.

**B.10** **Financial Considerations:** *Understanding* of the fundamentals of building costs, which must include project financing methods and feasibility, construction cost estimating, construction scheduling, operational costs, and life-cycle costs.

**[X] Not Met**

**2021 Team Assessment of B.10:** This criterion is not met. Some evidence of student achievement at the prescribed level was found to satisfy construction costs estimation in student work prepared for 1701 Architectural Projects 6 and 2001 Building and Technology Systems Design, and in 1903 Architectural Regulation on project feasibility. Evidence was not found in work prepared for <u>required</u> courses on project financing methods, construction scheduling, operational costs, and life-cycle costs.

**Th**e team requested additional materials to review considering this and other criteria. We found that work produced for the M. Arch. elective course 793 Technical Construction Management provides evidence to satisfy some items in this criterion, but it is not a required course for every student in the degree program.

> **Realm B. General Team Commentary:** Strong analytic approaches to structural knowledge include three-dimensional modeling of the structural components of existing buildings, material strength analysis, and the documentation of a buildable set of construction documents.

**Realm C: Integrated Architectural Solutions.**
Graduates from internationally certified degree program must be able to demonstrate that they have the ability to synthesize a wide range of variables into an integrated design solution.

Student learning aspirations for this realm include

- Comprehending the importance of research pursuits to inform the design process.

- Evaluating options and reconciling the implications of design decisions across systems and scales.

- Synthesizing variables from diverse and complex systems into an integrated architectural solution.

- Responding to environmental stewardship goals across multiple systems for an integrated solution.

- Knowing societal and professional responsibilities

The internationally certified degree program must demonstrate that each graduate possesses skills in the following areas:

**C.1**      **Research:** *Understanding* of the theoretical and applied research methodologies and practices used during the design process.

**[X] Met**

**2021 Team Assessment of C.1***:* This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared in teams for 1205 Introduction to Architectural Projects 1 and 1701 Architectural Projects 6; and, individually for 2005 Diploma Project, 712 Architectural Design Projects Workshop 1, 713 Architectural Design Projects Workshop 2, 718 Architectural Design Projects Workshop 3, and 719 Final Master Project. Taken as a whole, students' design work across levels demonstrates a high degree of ability.

**C.2**      **Integrated Evaluations and Decision-Making Design Process:** *Ability* to demonstrate the skills associated with making integrated decisions across multiple systems and variables in the completion of a design project. This demonstration includes problem identification, setting evaluative criteria, analyzing solutions, and predicting the effectiveness of implementation.

**[X] Met**

**2021 Team Assessment of C.2:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for 1801 Architectural Design 7, 1901 Architectural Design 8, 712 Projects Design Workshop 1, and 719 Final Master Project. Important evidence about process was provided by the required design notebooks (cuaderno de bitácora) where students document the decision-making process that leads to a final project.

Students demonstrate advanced skills in the design process. They are challenged to evaluate integrated human-centered designs from the development of minute structural details to the macro-analysis of city neighborhoods. The students' projects demonstrate high degrees of problem solving, from the analysis of alternatives to the evaluation of complex design solutions.

**C.3**      **Integrative Design:** *Ability* to make design decisions within a complex architecture project while demonstrating broad integration and consideration of environmental stewardship, technical documentation, accessibility, site conditions, life safety, environmental systems, structural systems, and building envelope systems and assemblies.

**[X] Met**

**2021 Team Assessment of C.3:** This criterion is **met with distinction**. Evidence of student achievement at the prescribed level was found in student work prepared for 2002 Structural Project, 2003 Technical Equipment and Services Design, 713 Architectural Design Projects Workshop 2, 714 Urban and Regional Planning Projects Workshop, 717 Building Structures Project Workshop, 718 Architectural Design Projects Workshop 3, and 719 Final Master Project.

The students' work demonstrates their ability to integrate comprehensively what they have learned. The curriculum design allows students to delve deeply and address multiple factors of architectural design within the same project. Instead of providing new knowledge in an isolated manner, every course adds complexity and constructability to the same design project.

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**Realm C. General Team Commentary:** ETSAM's curriculum design affords students an educational experience that thoroughly integrates all the design-related disciplines in a consistent manner. At each year level the student folds into the development of an architecture project, the knowledge obtained in each discipline in an approach that closely mimics real-world practice.

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**Realm D: Professional Practice**.
Graduates from internationally certified degree program must understand business principles for the practice of architecture, including management, advocacy, and the need to act legally, ethically, and critically for the good of the client, society, and the public.

Student learning aspirations for this realm include

- Comprehending the business of architecture and construction.

- Discerning the valuable roles and key players in related disciplines.

- Understanding a professional code of ethics, as well as legal and professional responsibilities.

The internationally certified degree program must demonstrate that each graduate possesses skills in the following areas:

**D.1      Stakeholder Roles in Architecture:** *Understanding* of the relationships among key stakeholders in the design process—client, contractor, architect, user groups, local community—and the architect's role to reconcile stakeholder needs.

**[X] Met**

**2021 Team Assessment of D.1:** Evidence of student achievement at the prescribed level was found in student work prepared for 1903 Architectural Regulation/The Profession of the Architect and 2001 Building and Technology Systems Design/The Profession of the Architect. Evidence was also found in comprehensive design projects.

**D.2      Project Management:** *Understanding* of the methods for selecting consultants and assembling teams; identifying work plans, project schedules, and time requirements; and recommending project delivery methods.

**[X] Not Met**

**2021 Team Assessment of D.2:** This criterion is not met. Some evidence of student achievement at the prescribed level was found in student work prepared for 1903 Architectural Regulation/The Profession of the Architect. Evidence of student achievement at the prescribed level was not found to satisfy the following areas: identifying work plans, project schedules, time requirements, and project delivery methods. The team requested additional materials to review considering this criterion. We found that work produced for the M. Arch. elective course 793 Technical Construction Management provides evidence to satisfy this criterion, but it is not a required course for every student in the degree program.

**D.3          Business Practices:** *Understanding* of the basic principles of a firm's business practices, including financial management and business planning, marketing, organization, and entrepreneurship.

**[X] Not Met**

**2021 Team Assessment of D.3:** This criterion is not met**.** No evidence was found to satisfy the following areas at the prescribed level in the required courses: financial management, business planning, marketing, organization, and entrepreneurship.

**D.4          Legal Responsibilities:** *Understanding* of the architect's responsibility to the public and the client as determined by local regulations and legal considerations involving the practice of architecture and professional service contracts.

**[X] Met**

**2021 Team Assessment D.4:** Evidence of student achievement at the prescribed level was found in student work prepared for 1903 Architectural Regulation/The Profession of the Architect and 2001 Building and Technology Systems Design/The Profession of the Architect.

**D.5          Professional Conduct:** *Understanding* of the ethical issues involved in the exercise of professional judgment in architectural design and practice and understanding the role of local rules of conduct and ethical practice.

**[X] Met**

**2021 Team Assessment D.5:** Evidence of student achievement at the prescribed level was found in student work prepared for 1501 Architectural Projects 4 and 1903 Architectural Regulation/The Profession of the Architect.

**Realm D. General Team Commentary:** ETSAM provides an integrated curriculum in which professional practice topics are discussed in an ongoing basis throughout various courses, including 1903 Architectural Regulation and studios. Students, who are licensed after completing the B. Arch, and the M. Arch, (Master Habilitante de Arquitectura) are well prepared from a technical point of view, to design and deliver an architecture project upon graduation. Some project management topics are addressed throughout the core coursework, though the bulk of project management topics are discussed in an elective class (793 Technical Construction Management), which not every student is exposed to. The topics of business management are not covered within the curriculum; resources for those topics are provided by

the Colegio Oficial de Arquitectos de Madrid (COAM), if a graduate from the official degree programs chooses to join it.

**Part II, Section 2: Curricular Framework**

**II.2.1 National Authorization and Institutional Quality Assurance**: The institution offering the internationally certified degree program must be or be part of an institution that has been duly authorized to offer higher education in the country in which it is located. Such authorization may come from a government ministry or other type of agency.

The institution must have explicit, written permission from all applicable national education authorities in that program's country or region. At least one of the agencies granting permission must have a system of institutional quality assurance and review which the institution is subject to and which includes periodic evaluation.

**[X] Met**

**2021 Team Assessment of II.2.1:** The PSER includes two letters from ANECA (Agencia Nacional de Evaluación de la Calidad y Acreditación de España), one for each degree (B. Arch., M. Arch.). ANECA is a member of the European Association for Quality Assurance in Higher Education (ENQA), the European Quality Assurance Register for Higher Education (EQAR), and the International Network for Quality Assurance Agencies in Higher Education (INQAAHE). The Madri + d Foundation works in conjunction with the Madrid Regional Education Department (Consejería de Educación, Juventud y Deportes de la Comunidad de Madrid).

In 2017 the accreditation agency of the community of Madrid, which acts on behalf of ANECA, Madri + d Foundation, evaluated the B. Arch. and approved renewal of accreditation. The M. Arch. received its first renewal of accreditation in 2016. The next accreditation review is this year 2021.

**II.2.2 Professional Degrees and Curriculum**:

For International Certification, the NAAB requires degree programs in architecture to demonstrate that the program is comparable in all significant aspects to a program offered by a U.S. institution. Further, the program must demonstrate that the degree awarded at the conclusion of this program of study entitles the graduate to practice architecture in his/her home country, subject to meeting any requirements for experience and/or examination. Internationally Certified degree programs must include (or otherwise acknowledge) general studies, professional studies, and electives.

Curricular requirements are defined as follows:

- **General Studies**. A professional degree program must include general studies in the arts, humanities, and sciences, either as an admission requirement or as part of the curriculum. It must ensure that students have the prerequisite general studies to undertake professional studies. The curriculum leading to the architecture degree must include a course of study comparable to 1.5 years of study or 30% of the total number of credits for an undergraduate degree. These courses must be outside architectural studies either as general studies or as electives with content other than architecture.

  If this education is acquired prior to university-level education, the program must describe the system for general studies education in the local context, and how it is substantially equivalent to the requirement stated above.

- **Professional Studies**. The core of a professional degree program consists of the required courses that satisfy the NAAB Student Performance Criteria (SPC). The professional degree program has the discretion to require additional courses including electives to address its mission or institutional context.

- **Electives**. A professional degree program must allow students to pursue their special interests. The curriculum must be flexible enough to allow students to complete minors or develop areas of concentration, inside or outside the program.

**[X] Met**

**2021 Team Assessment of II.2.2**: In Spain, the architect's professional degree is defined by law and is currently based on the Syllabus 2010. It requires two consecutive degrees: a "Degree in Fundamentals of Architecture" (B. Arch.) awarded after completing 10 semesters equivalent to 300 ECTS (European Credit Transfer and Accumulation System, equivalent to 150 semester credit hours) that includes the "Degree Completion Project." This degree confers access to the official Master of Architecture degree program, which requires 2 semesters equivalent to 60 ECTS (equivalent to 30 graduate credit hours) including the "Final Year Project." After successfully completing the second degree, the M. Arch., graduates are entitled to enter the regulated practice as an Architect. The Official Association of Architects in Spain (COAM) also accepts applications for membership from graduates of the previous Syllabus 1996 (Plan 96, a 450 credit hour degree in architecture), which has been phased out.

The official B. Arch. (Grado en Fundamentos de la Arquitectura) consists of general subjects (60 ECTS or 30 semester credit hours), compulsory subjects (222 ECTS or 111 semester credit hours of core professional subjects), elective subjects (12 ECTS or 6 semester credit hours), and the B. Arch. Final Year Project (6 ECTS or 3 semester credit hours). The B. Arch. degree curriculum includes required courses that add to a student's general education in English Communication (6 ECTS), Geometry and Drawing (12 ECTS), Calculus (6 ECTS), Curves and Surfaces (3 ECTS), and Applied Physics (12 ECTS). Also, to be considered is that the B. Arch. curriculum expands students' knowledge into allied disciplines with courses in Landscape Architecture (3 ECTS), Soil Mechanics (6 ECTS), and Urban Design and Planning (18 ECTS). These courses are offered by the following ETSAM departments: Construction and Architectural Technology, Structures and Physics of Building, Urban and Territorial Planning, Applied Mathematics, and Applied Linguistics. As explained later in this section the equivalency for general studies in the arts, humanities, and sciences is met by examination when admitted to the university.

The official M. Arch. degree (Master Habilitante en Arquitectura) consists of compulsory subjects (20 ECTS or 10 semester credit hours of core professional subjects), elective courses (10 ECTS or 5 semester credit hours), and the Master's Final Year Project (30 ECTS or 15 semester credit hours). Among the M. Arch., required courses is a workshop in urban design. A number of electives are offered including internships in professional practice.

The academic journey to become an architect is ruled both by Spanish Laws and the 1999 Bologna Declaration on the European Higher Education Area (EHEA) agreement and its subsequent additions. The additions were to harmonize measures of student performance and to ensure the level and recognition of qualifications of the countries that form the European Union.

The requirements for admission to ETSAM's B. Arch. are the same as those established for admission to UPM. Admission to public higher institutions is regulated nationally and it requires

passing the University Access Evaluation (EvAU). Autonomous communities may have additional requirements. The exam consists of obligatory subjects: Spanish Language, Literature, and History, a Foreign Language; and other subjects selected by the students as concentrations: Arts Fundamentals, Applied Math in the Social Sciences, and Applied Math for the Natural Sciences. There is also a voluntary phase on subjects chosen by the student.

It is important to note that students applying to universities in Spain may have completed "upper secondary education" after the obligatory "secondary education." The upper secondary education consists of two years of studies called "Bachillerato" wherein students may focus on the arts, sciences, humanities, and social sciences. As described in the 2014 VTR, the college placement score is based on high school grades, the basic exam, and the additional exam. It is important to highlight the Royal Decree EDU/2075/2010, which establishes the requirements to verify the qualifications for the practice of the architecture profession. It explicitly stipulates that graduates of the consecutive degrees B. Arch. and M. Arch. must demonstrate knowledge of the history and theories of architecture, as well as the arts, technology, and human sciences related to it.

ETSAM is organized into eight departments, all contributing courses to the official degree programs in architecture: the B. Arch. and the M. Arch.: These are Applied Mathematics, Applied Physics and Technical Equipment for Architecture, Urban Planning and the Environment, Architectural Composition, Architectural Projects, Building Structures and Physics, Construction and Technology in Architecture, Urban and Regional Planning, and Applied Linguistics for Science and Technology.

## Part II, Section 3: Evaluation of Preparatory Education

The program must demonstrate that it has a thorough and equitable process for evaluating the preparatory or preprofessional education of individuals admitted to the ICert degree program.

- Programs must document their processes for evaluating a student's prior academic course work related to satisfying NAAB student performance criteria when a student is admitted to the professional degree program.

- In the event a program relies on the preparatory educational experience to ensure that admitted students have met certain SPC, the program must demonstrate it has established standards for ensuring these SPC are met and for determining whether any gaps exist.

**[X] Not Applicable**

**2021 Team Assessment:** By law to practice Architecture in Spain, an individual must have received the official degrees: B. Arch. and M. Arch. No SPC are met prior to professional education.

### PART TWO (II): SECTION 4 – PUBLIC INFORMATION

The NAAB expects programs to be transparent and accountable in the information provided to students, faculty, and the public. As a result, the following conditions require all ICert degree programs to make certain information publicly available online.

**II.4.1 Statement on International Certification Degrees:** In order to promote an understanding of the internationally certified degree by prospective students, parents, and the public, all schools offering the certified degree program must include in catalogs and promotional media the *exact language* found in the *Conditions for NAAB International Certification*, Appendix 6.

**[X] Met**

**2021 Team Assessment II.4.1:** The website below includes the exact language:

etsam.aq.upm.es/ v2/es/escuela/lineas-estrategicas/calidad/certificaciones

However, UPM must resolve contradictory information offered in another website, which incorrectly indicates that ETSAM is accredited by NAAB. The website in error is:

upm.es/e-politecnica

**II.4.2 Access to Conditions and Procedures for NAAB International Certification:** In order to assist parents, students, and others as they seek to develop an understanding of the body of knowledge and skills that constitute a professional education in architecture, the school must make the following documents available online and accessible by all students, parents, and faculty:
- *2019 Conditions for NAAB International Certification*
- *Procedures for NAAB International Certification* (edition currently in effect)

**[X] Met**

**2021 Team Assessment II.4.2:** The documents are available online in the website indicated below. They can also be accessed by searching for "ETSAM NAAB International Certification."

etsam.aq.upm.es/ v2/es/escuela/lineas-estrategicas/calidad/certificaciones

**II.4.3 Access to Career Development Information:** In order to assist students, parents, and others as they seek to develop an understanding of the larger context for architecture education and the career pathways available to graduates of internationally certified degree programs, the program must make appropriate resources related to a career in architecture available to all students, parents, staff, and faculty.

**[X] Met**

**2021 Team Assessment II.4.3:** The website listed below has the section "Degree in Architecture Fundamentals" (Grado en Fundamentos de la Arquitectura) containing general and specific information about the degree, admission procedures, calendar, and curriculum.
etsam.aq.upm.es

On the same website there is information about study abroad and exchanges (International Cooperation) and extracurricular activities.

A section on the same website, "Scholarships and job offers" (Becas y ofertas de empleo), has information about current scholarships and job announcements. Another section announces internships (practicas profesionales).

The university website section "Estudiantes, General, ETS de Arquitectura" includes a subsection explaining the opportunities that the NAAB Substantial Equivalency provides to students graduating from B. Arch. and M. Arch. degree programs. However, it incorrectly refers to it as "accreditation. This is the website mentioned above: upm.es

**II.4.4 Public Access to Program Self-Evaluation Reports and Visiting Team Reports:** In order to promote transparency in the process of International Certification in architecture education, the program is required to make the following documents available to the public:

- The final decision letter from the NAAB
- The most recent Program Self-Evaluation[1]
- The final edition of the most recent Visiting Team Report, including attachments and addenda

These documents must be housed together and accessible to all. Programs are required to make these documents available electronically from their websites.

**[X] Met**

**2021 Team Assessment of II.4.4:** The ETSAM website, etsamadrid.aq.upm.es, includes text with links to the required documents for the 2014 NAAB Substantial Equivalency and explanation under section "Sistema de Garantía de Calidad, Acreditaciones."

However, the text incorrectly refers to NAAB's 2014 "substantial equivalency" as an "accreditation." The same error can be found at upm.es/e-politecnica.

**II.4.5. Admissions and Advising:** The program must publicly document all policies and procedures that govern how applicants to the program being reviewed for International Certification are evaluated for admission. These procedures must include first-time, first-year students as well as transfers within and from outside the institution.

This documentation must include the following:

- Application forms and instructions
- Admissions requirements, admissions decisions procedures, including policies and processes for evaluation of transcripts and portfolios (where required), and decisions regarding remediation and advanced standing
- Forms and a description of the process for the evaluation of degree content
- Requirements and forms for applying for financial aid and scholarships

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[1] This is understood to be the Program Self-Evaluation Report from the previous visit (if applicable), not the Program Self-Evaluation for the visit currently in process.

- Student diversity initiatives

**[X] Met**

**2020 Team Assessment II.4.5:** The UPM website section "Degree in Architecture Fundamentals" (Grado en Fundamentos de la Arquitectura) provides general information about the degree, application and admission procedures, curriculum, and student handbook. The website and relevant sections are listed below.

upm.es
Estudiantes > Estudios Oficiales de Grado > Grado en Fundamentos de la Arquitectura.

Futuros Estudiantes > Ingresar en la UPM > Orientación; Pruebas de Acceso > Acceso-Admisión > Reconocimiento de Créditos > Matriculación.

The same UPM website also provides information about financial aid and scholarships available at the university level: in the section "Becas, Ayudas y Premios."

A website specific to ETSAM also provides information about the degrees, admissions and services offered to students in the school including those pursuing the B. Arch. and M. Arch. programs: etsamadrid.aq.upm.es

Financial aid and scholarship information can be found in www.bocm.es/CM-Orden_BOCM/
More information about these can be found in:
https://etsam.aq.upm.es/v2/es/becas-y-ofertas -de-trabajo.
Similar information can be found in etsamadrid.aq.upm.es.

In the team's interview with the administrative and service staff we learned that students can access academic advising through the ETSAM's office, and the students' delegates explained that professors can be contacted for tutoring and other academic needs.

**Appendix 1**: **Conditions Met with Distinction**

**A.4 Architectural Design Skills**

**A.5. Ordering Systems**

**B.2 Site Design**

**B.4 Technical Documentation**

**B.5 Structural Systems**

**C.1 Research**

**C.2 Integrated Evaluations and Decision Making in Design Process**

**C.3 Integrative Design**

## Appendix 2: Team SPC Matrix

The program is required to provide the team with a blank matrix that identifies courses by number and title on the *y* axis and the NAAB SPC on the *x* axis. This matrix is to be completed in Excel and converted to Adobe PDF and then added to the final VTR

The team is required to complete an SPC matrix that identifies the course(s) in which student work demonstrated the program's compliance with Part II, Section 1.

The team's ETSAM matrix follows on the next page.

**Met w/Distinction** (green)      **Not met** (yellow)

| Year | Term | Code | Course Title | A1 Professional Communication Skills | A2 Design Thinking Skills | A3 Investigative Skills | A4 Architectural Design Skills | A5 Ordering Systems | A6 Use of Precedents | A7 History and Global Culture | A8 Cultural Diversity and Social Equity | B1 Pre-design | B2 Site Design | B3 Codes and Regulations | B4 Technical Documentation | B5 Structural System | B6 Environmental Systems | B7 Building Envelope Systems and Assemblies | B8 Building Material and Assemblies | B9 Building Service Systems | B10 Financial Considerations | C1 Research | C2 Integrated Evaluations and Decision-Making Design Process | C3 Integrative Design | D.1 Stakeholder Roles in Architecture | D+AA55+AB5:AC8+AB5:AC9+AB5+AB5:AB7 | D.3. Business Practices | D.4 Legal responsibilities | D.5 Professional Conduct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 FIRST YEAR | T1 FALL | 1101 | Geometry and architectural drawing | | | | | X | | | | | | | | | | | | | | | | | | | | | |
| | | 1102 | Drawing, analysis and ideation1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1103 | Euclidean and projective geometry | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1104 | Introduction to Architecture | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| | | 1105 | Workshop | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | T2 SPRING | 1201 | Drawing, analysis and ideation 2 | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | |
| | | 1202 | Geometry and architectural drawing II | | | | | | | | | | | | X | | | | | | | | | | | | | | |
| | | 1203 | Architectural Design 1 | | | | | | | | | | X | | | | | | | | | | | | | | | | |
| | | 1204 | Calculus | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1205 | History of Art and Architecture | | | X | | | | X | | | | | | | | | | | | | X | | | | | | |
| 02 SECOND YEAR | T3 FALL | 1301 | Architectural Design 2 | | | | X | X | | | | | | | | | | | | | | | | | | | | | |
| | | 1302 | Physical Mechanics | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| | | 1303 | Building Materials | | | | | | | | | | | | | | | | X | | | | | | | | | | |
| | | 1304 | The City and Town Planning | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| | | 1305 | Curves and Surfaces | | | | | | | | | | X | | | | | | | | | | | | | | | | |
| | T4 SPRING | 1401 | Architectural Design 3 | | | | X | X | | | | | | | | | | | | | | | | | | | | | |
| | | 1402 | Structures 1 | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| | | 1403 | Building Physics | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1404 | Architectural Analysis | | | X | | | | X | X | | | | X | | | | | | | | | | | | | | |
| | | 1405 | Construction and Building | | | | | | | | | | | | | | | | X | | | | | | | | | | |
| | T5 FALL | 1501 | Architectural Design 4 | | | | X | X | X | | X | | | | | | | | | | | | | | | | | | X |
| | | 1502 | Construction and Building Technology 2 | | | | | | | | | | | | | | | X | X | | | | | | | | | | |
| | | 1503 | Structural Design 2 | | | | | | | | | | | | | X | | | | | | | | | | | | | |

## Degree in Fundamentals of Architecture — NAAB Student Performance Criteria

Criteria columns:
- A. Critical Thinking and Representation: A1 Professional Communication Skills, A2 Design Thinking Skills, A3 Investigative Skills, A4 Architectural Design Skills, A5 Ordering Systems, A6 Use of Precedents, A7 History and Global Culture, A8 Cultural Diversity and Social Equity
- B. Integrated Building Practices, Technical Skills, and Knowledge: B1 Pre-design, B2 Site Design, B3 Codes and Regulations, B4 Technical Documentation, B5 Structural System, B6 Environmental Systems, B7 Building Envelope Systems and Assemblies, B8 Building Material and Assemblies, B9 Building Service Systems, B10 Financial Considerations
- C. Integrated Architectural: C1 Research, C2 Integrated Evaluations and Decision-Making Design Process, C3 Integrative Design
- D. Professional Practice: D.1 Stakeholder Roles in Architecture, D+AA5S+AB5:AC8+AB5:AC9+AB5+AB5:AB7, D.3 Business Practices, D.4 Legal responsibilities, D.5 Professional Conduct

| Year | Sem | Code | Course Title | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | C1 | C2 | C3 | D.1 | D+ | D.3 | D.4 | D.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 03 THIRD YEAR | | 1504 | History of Architecture and Town Planning | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 03 THIRD YEAR | T6 SPRING | 1601 | Architectural Design 5 | | | | X | X | | | | | | | | | | | | | | | | | | | | | |
| 03 THIRD YEAR | T6 SPRING | 1602 | The City and the Built Environment | X | | | | | | | X | | X | | | | | | | | | | | | | | | | |
| 03 THIRD YEAR | T6 SPRING | 1603 | Landscape and Garden Design | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 03 THIRD YEAR | T6 SPRING | 1604 | Environmental Conditioning and Habitability | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 03 THIRD YEAR | T6 SPRING | 1605 | English communication | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 04 FOURTH YEAR | T7 FALL | 1701 | Architectural Design 6 | | X | X | | | X | X | X | X | | | | | | | | | X | X | | | | | | | |
| 04 FOURTH YEAR | T7 FALL | 1702 | Construction and Building Technology 3 | | | | | | X | | | | | | | | | X | X | | | | | | | | | | |
| 04 FOURTH YEAR | T7 FALL | 1703 | Structural Design 3 | | | | | | | | | | | X | | X | | | | | | | | | | | | | |
| 04 FOURTH YEAR | T7 FALL | 1704 | Architectural Composition | | | | | X | | | | | | | | | | | | | | | | | | | | | |
| 04 FOURTH YEAR | T8 SPRING | 1801 | Architectural Design 7 | X | X | | | | | | | | | | | | | | | X | | | X | | | | | | |
| 04 FOURTH YEAR | T8 SPRING | 1802 | Urban Project | | | | | | | | X | | X | | | | | | | | | | | | | | | | |
| 04 FOURTH YEAR | T8 SPRING | 1803 | Technical Equipment and Services | | | | | | | | | | | | | | X | | | | | | | | | | | | |
| 04 FOURTH YEAR | T8 SPRING | 1804 | Electric, Lighting and Media Technologies. | | | | | | | | | | | | | | X | | | | | | | | | | | | |
| 04 FOURTH YEAR | T8 SPRING | 1805 | Experimental Workshop 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 05 FIFTH YEAR | T9 FALL | 1901 | Architectural Design 8 | | | | | | | | | | | | | | | | | | | | X | | | | | | |
| 05 FIFTH YEAR | T9 FALL | 1902 | Soil Mechanics | | | | | | | | | | | X | | X | | | | | | | | | | | | | |
| 05 FIFTH YEAR | T9 FALL | 1903 | Architectural Regulation | | | | | | | | | | | X | | | | | | | X | | | | X | X | | X | |
| 05 FIFTH YEAR | T9 FALL | 1904 | Urban and Land Planning | X | | X | | | | | | X | X | | | | | | | | | | | | | | | | X |
| 05 FIFTH YEAR | SPRING | 2001 | Building and Technology Systems Design | | | | | | | | | | | X | X | | | X | | X | X | | | | X | | | X | |
| 05 FIFTH YEAR | SPRING | 2002 | Structural Design | | | | | | | | | | | | | X | | | | | | | | X | | | | | |
| 05 FIFTH YEAR | SPRING | 2003 | Technical Equipment Design | | | | | | | | | | | X | | | X | | | X | | | | X | | | | | |

## Degree in Fundamentals of Architecture — NAAB Student Performance Criteria

| | Code | Course Title | A1 Professional Communication Skills | A2 Design Thinking Skills | A3 Investigative Skills | A4 Architectural Design Skills | A5 Ordering Systems | A6 Use of Precedents | A7 History and Global Culture | A8 Cultural Diversity and Social Equity | B1 Pre-design | B2 Site Design | B3 Codes and Regulations | B4 Technical Documentation | B5 Structural System | B6 Environmental Systems | B7 Building Envelope Systems and Assemblies | B8 Building Material and Assemblies | B9 Building Service Systems | B10 Financial Considerations | C1 Research | C2 Integrated Evaluations and Decision-Making Design Process | C3 Integrative Design | D.1 Stakeholder Roles in Architecture | D+AA55+AB5:AC8+AB5:AC9+AB5+AB5:AB7 | D.3 Business Practices | D.4 Legal responsibilities | D.5 Professional Conduct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **T10** | 2004 | Optional Extension | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2005 | Diploma Project | X | | X | | | | | | | | | | | | | | | | X | | | | | | | |

### Master in Architecture

| | | Code | Course Title | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | C1 | C2 | C3 | D.1 | D+ | D.3 | D.4 | D.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ONE YEAR | SEM 1 | 711 | Architectural Composition Workshop | | | | | | | | | X | | | | | | X | | | | | | | | | | | |
| | | 712 | Projects Design Workshop 1 | | | | | | | | | X | | | | | | | | | | X | X | | | | | | |
| | | 713 | Projects Design Workshop 2 | | | | | | | | | | | | | | | | | | | X | | X | | | | | |
| | | 714 | Urban and regional planning Workshop | | | | | | | | | | X | | | | | | | | | | | X | | | | | |
| | SEM 2 | 715 | Architectural Communication Workshop | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 716 | Construction and Technology Workhop | | | | | | | | | | | | | X | X | X | | | | | | | | | | | |
| | | 717 | Building Structures | | | | | | | | | | | X | X | | | X | X | | | | | X | | | | | |
| | | 718 | Projects Design Workshop 3 | | | | | | | | | | | | | | | | | | | X | | X | | | | | |
| | | 719 | Final Master Project | | | | | | | | | | X | | | | | | | | | X | X | X | | | | | |

Below B10 Financial Considerations: **NOT MET**

Below D+AA55+AB5:AC8+AB5:AC9+AB5+AB5:AB7: **NOT MET**

## Appendix 3: Visiting Team Roster

*Team chair*
Dr. Carmina Sánchez-del-Valle, DP ACSA, CAAPPR
Hampton University
Hampton, Virginia
carmina.sanchez@hamptonu.edu

*Team member*
Robert A. Boynton, FAIA
Robert A. Boynton, FAIA | Architect
Richmond, Virginia
rabfaia@gmail.com

*Team member*
Amaya Labrador, AIA
Perkins and Will
Houston, Texas
Amaya.labrador@gmail.com

*Team member*
Celeste Allen Novak, FAIA
Ann Arbor, Michigan
1066celeste@gmail.com

*Team member*
Adiel Quiteno
Parette Somjen Architects
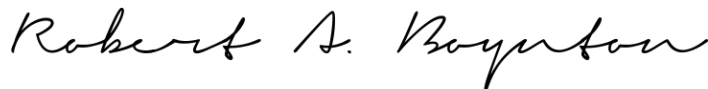Rockaway, New Jersey
adielq45@gmail.com

*Facilitator*
Lorena del Rio
The Irwin S. Chanin School of Architecture of The Cooper Union
RICA* Madrid – New York
lrgimeno@gmail.com

**Report Signatures**

Submitted by

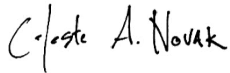
_____
Carmina Sánchez-del-Valle, *team chair*


_____
Robert A. Boynton, *team member*


_____
Amaya Labrador, *team member*


_____
Celeste A. Novak, *team member*


_____
Adiel Quiteno, *team member*


_____
Lorena del Rio Gimeno, *facilitator*

# ETSAM Response
## 2021 Visit for Continuing International Certification

Madrid, June 2th, 2021

**Janet** **Rumbarger, Hon. AIA**
Director, International Services
Secretary, Canberra Accord on Architectural Education
**National Architectural Accrediting Board**
107 S. West Street
Suite 707
Alexandria, VA 22314

Dear Ms Rumbergder,

Herewith, we respond to the Visiting Team Report submitted on May 18th.

## *Acknowledgments*

First of all, we want to thank the Visiting Team, led by Professor Carmina Sánchez, for the analysis they have carried out on the documentation included in the blog. We consider it very useful for improving the quality of our School and its conclusions are very adequate. The review shows that the Team understood the vision and mission of our School, its historical trajectory, and its importance in the Spanish and international contexts. It also revealed that the teaching and research work carried out in ETSAM was appreciated.

In this sense, we are glad that the documentation presented by our School for the IC, both the PSER with its annexes, the evidences of the students' work, as well as the information offered in the different meetings, has been sufficiently clear and complete. On the other hand, we are sorry for the inconveniences that Visiting Team members may have suffered to analyze all this information, although we hope they understand that we have had to work (both, they and us) in somewhat complicated conditions, due to the restrictions imposed by the COVID 19 pandemic.

## *Observations*

In creating the blog with all the programs' documentation, we have opted for the second of the options offered by the Guidelines for the Use of Digital Content in Accreditation Visits, namely, organizing the evidence by courses and semesters, and not by SPC. This responds to the fact that, due to the cross-cutting structure of our teaching, many of these SPC appear in numerous courses, which would have caused repetitions of courses and evidences, making their evaluation more difficult. However, we have verified that the presentation of some of the evidences and, above all, of the briefs of exams and assignments should be improved. We hope to do it better next time.

UNIVERSIDAD POLITÉCNICA DE MADRID  Ramiro de Maeztu, 7. E- 28040 Madrid - SPAIN  Phone: +34 91 06 70169  vicerrector.calidad@upm.es

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POLITÉCNICA
DE MADRID

POLITÉCNICA

**Alberto Garrido**
Vice-Rector for Quality and Efficiency

Likewise, we are pleased to see that the Visiting Team members have recognized that many of the SPC can be found in numerous courses, which confirms the cross-cutting structure of our programs mentioned earlier.

## II. COMPLIANCE WITH THE 2019 CONDITIONS FOR NAAB INTERNATIONAL CERTIFICATION

**Part One: Institutional Support and Commitment to Continuous Improvement**
**Part One (I): Section 1—Identity and Self-Assessment**
**Part One (I): Section 2—Resources**

With respect to these two sections, we appreciate the positive comments that the Visiting Team has included in their report and we are happy to comply with all these conditions in a satisfactory way.

### Part Two (II): Educational Outcomes and Curriculum

**Part II, Section 1: Student Performance—Education Realms and Student Performance Criteria**

**II.1.1 Student Performance Criteria**

**Realm A**

We appreciate comments on compliance with this Realm, in which a special distinction has been obtained in the *A4, Architectural Design Skills* and *A5, Ordering Systems*.

**Realm B**

We also appreciate comments on compliance with Realm B, in which a special distinction has been obtained in *B2, Site Design*, *B4, Technical Documentation* and *B5, Structural Systems*.

With regard to *B10, Financial Considerations,* we recognize that it has not been possible to present evidences of compliance with all the aspects contained in this SPC, within the <u>required</u> courses. However we are convinced that these contents are considered in the courses indicated in the matrix (*1903, Architectural Regulation*), in addition to the elective subject *793, Technical Construction Management*.
In any case, we will put the necessary means to ensure that, starting in the next academic year on, the students of the 1903 course can show sufficient evidences of full compliance with this SPC.

**Realm C**

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We appreciate once again the comments on the fulfillment of this realm, in which a special distinction has been obtained in all its SPC; *C1, Research, C2, Integrated Evaluations and Decision-Making Design Process, and C3, Integrative Design.*

**Realm D**

We again appreciate the comments on compliance with this Realm, in which, the SPC are complied with except for *D2, Project Management*, and *D3, Business Practices.*

With regard to *D2, Project Management*, we recognize that it has not been possible to present evidences of compliance with all the aspects contained in this SPC, within the <u>required</u> courses, although it has been possible for some of them. However, we are convinced that these contents are considered in several <u>required</u> courses of the last semesters: in addition to the one indicated in the matrix (*1903, Architectural Regulation*), also in *1901, Architectural Design 8, 1902 Soil Mechanics, 2001, Building and Technology Systems Design, 2002, Structural Design, 2003, Technical Equipment Design* and *717, Structural Workshop*; and of course also in elective *793, Technical Construction Management.*

With regard to *D3, Business Practices*, we also recognize that it has not been possible to present evidences of compliance with all the aspects contained in this SPC, within the <u>required</u> courses. However, we believe that many of these contents are considered in several <u>required</u> courses of the last semesters: in addition to the one indicated in the matrix (*1903, Architectural Regulation*), also in *2001, Building and Technology Systems Design, 2002, Structural Design, 2003, Technical Equipment Design* and in all the *MArch courses*, since in these last courses the student develops an execution project.

Likewise, it is worth mentioning some comments from the Visiting Team included in the VTR that, in our opinion, reinforce the opportunities of the students to acquire these two SPCs, even if they are not part of the <u>required</u> courses and, therefore, cannot be considered satisfied:

**Analysis/Review of I.1.4:**
**A. Collaboration and Leadership:**

*"Students can collaborate with professors and/or architects outside of the university in the development of projects. These opportunities allow students to develop and refine their coordination and leadership skills"*

**B. Design:**

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*"Students are provided with opportunities for collaborative learning, research, technical proficiency, strong land and urban planning analysis and the exploration of unique and often self-selected architectural programs. ETSAM students are exposed to and provided with the tools to explore problem resolutions and to discover new opportunities that create value throughout their entire academic experience."*

## C. Professional Opportunity:
*"Most of the subjects taught in the program have a direct bearing on the profession. The education includes the breadth of professional knowledge required to practice."*

## E. Community and Professional Responsibility:

*"The program is resolute about giving its students sufficient opportunities to act mindfully as professional architects, and to display a deep understanding of the importance of their field and the activities they may engage in."*

## I.2.1 Human Resources and Human Resource Development:

### 2021 Team Assessment of I.2.1:
*"Students can access scholarship and job opportunities through the ETSAM website. The PSER explains that the Employment Guidance and Information Center (COIE) at UPM manages internships for all students. Although students are not required to participate, ETSAM encourages students to take advantage of internships offered in architecture and in business."*

In any case, we are going to put the necessary means to ensure that starting next year, the students of the course *1903, Architectural Regulation*, in addition to the others mentioned, can show sufficient evidence of complete compliance with these two SPCs.

## PART TWO (II): SECTION 4 – PUBLIC INFORMATION
## II.4.1 Statement on International Certification Degrees:

We have already modified the information offered in the University Website, as follows.

The following links have been modified replacing the term "Substantial Equivalency" by "International Certification":

https://www.upm.es/UPM/Calidad/CalidadTitulaciones/AcreditacionInternacional

https://www.upm.es/e-politecnica/?p=11704

The following links are news published in 2015, on the occasion of the awarding of the certification, when the name Substantial Equivalency was the correct one. Therefore, they have not been corrected, as they contain past data that was correct at the time of publication even if it is not valid any more (for instance the name of the School's Director is not the current one):

https://www.upm.es/UPM/SalaPrensa/NoticiasPortada/Contenido?fmt=detail&prefmt=articulo&id=37a502563940d410VgnVCM10000009c7648a_____

Los titulados por la ETSAM, acreditados para iniciar su carrera profesional en EEUU – E-Politécnica (upm.es), also published at https://www.upm.es/e-politecnica/?p=7962

## II.4.4 Public Access to Program Self-Evaluation Reports and Visiting Team Reports:

We have as well corrected the information offered in the University Webside. This is the Report on the activities of the Quality Sub-Directorate for the 2014-15 academic year, the year in which the International certification was obtained from NAAB.
In the text of point 5, the following has been added: "Substantial Equivalency (currently International Certification)".

The new link is:

https://etsam.aq.upm.es/v2/es/escuela/lineas-estrategicas/calidad/sistema-interno-de-garantia-de-calidad-sgic/memorias-de-las-actividades-2014-15

UNIVERSIDAD POLITÉCNICA DE MADRID  Ramiro de Maeztu, 7. E- 28040 Madrid - SPAIN  Phone: +34 91 06 70169  vicerrector.calidad@upm.es

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