Architecture PUR 2020-21

Architecture Design:

- Construction & Design 2020-21 PUR Self-Study

SI Section Templates: 1.A. Program or Unit Description, 1. B. Program or Unit Mission, 1.C. Program Learning Outcomes, 2.A. Progress on Previous Findings and Recommendations, 3. A. Technical Programs (AAS degrees and Certificates; Allied Health Programs only), 3.B. Transferability, 3.C. Student-centered Offerings, 3.D. Accessibility of Instructional Materials, 4.A. Curriculum Mapping, 4.B.1 Evidence of Program Learning Outcomes Assessment, 4.C. General Education Outcomes Assessment, 4.D. Five-year Course Assessment Cycle, 5.A. FTE, Section Count, Course Fill Rate, and Unsuccessful Enrollment Attempts, 5.B. Student Demographics: Ethnicity, Gender, Credit Load, Student Status, and Age Range, 6.A. Course Completion, 6.B. Graduation and Transfer, 7.A. Faculty Achievement, 7.B. FT/PT Faculty and Student Credit Hours Taught, 7.C. Support Staff, 7.D. Facilities and Technology, 8.A. Five Year Plan, 9.A. Resource Requests, Academic Standards and Assessment Committee Findings and Recommendations, Dean's Findings and Recommendations, Vice President of Academic Affairs' Findings and Recommendations

Date: 09-07-2022

Sorted by: Section

1.A. Program or Unit Description

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Briefly describe the program/unit, including but not limited to the following: academic division that the program/unit belongs to, the academic area(s) represented, degrees/certificates offered, average student enrollment, number of full-time faculty, type of curriculum or pedagogical approaches, and any other pertinent aspect of the program/unit.

Introduction

Currently, the Architecture AAS is a transferable degree, the Residential Design AAS is a terminal degree, and the Landscape Architecture AAS can be either a transferable or terminal degree. For example, a landscape architectural student can transfer to the University of Nevada Las Vegas for an accredited Bachelor’s Degree; or said student may apply to the Nevada State Board of Landscape Architecture to register as a Landscape Architect-in-Training (LAIT), complete portions of the national exam, and find employment that meets the Nevada Revised Statues Direct Observation criteria and satisfies work mandated experience. Upon completion, an LAIT may complete the required Licensure Exam.

Most recently, and most directly affecting the 20/21 PUR, an architectural curriculum at ACE Charter High School was created. This curriculum will be completed over the course of three

years. The first cohort will be completed with year one courses by the end of the S21 semester. A full-time TMCC instructor is currently supported by grant funding. Three additional years of funding support for the full-time position is tentatively slated for the Perkins 2021 submission.

Program Unit / Academic Division
The Construction and Design Associate of Applied Science degree has four (4) areas of emphasis: Architecture, Construction Management, Landscape Architecture and Residential Design. Skills Certificates are as follows:

Degrees / Certificates
Degrees.

- AAS in Construction and Design emphasis in Architecture.
- AAS in Construction and Design emphasis in Residential Design.
- AAS in Construction and Design emphasis in Landscape Architecture.
- AAS in Construction and Design emphasis in Construction Management.

Certificates.

- Architecture & Residential Design. To begin with, the TMCC Spring 2021 catalog lists the Architectural Drafting Skills Certificate. During Fall 2020 and Spring 2021 this will be discontinued and replaced with two (2) Skills Certificates: Revit Skills Certificate and AutoCAD Skills Certificate. The existing, or recently terminated, Architectural Drafting Skills Certificate will be amended to a Architectural Drafting Certificate of Achievement (approved by CRC Fall 2020 and submitted to NSHE Spring 2021). All certificates are stackable and favor students enrolling in architecture and residential design as indicated by enrollment patterns.
- Landscape Architecture**.** Students enrolled in landscape architecture will most likely pursue the AutoCAD Skills Certificate as supported by industry standards.
- Construction Management - Supports two (2) Skills Certificates: Construction Estimating and Construction Project Management.

Average Student Enrollment
https://www.tmcc.edu/institutional-research/data-dashboards/enrollment-trends/headcount-by-major

Architecture AA / Architecture AAS	F18: (26) 12/13	F19: (32) 8/24	F20: (25) 22/3		
	S18: (23) 15/8	S19: (25) 12/13	S20: (25) 2/23		
Landscape Architecture AAS	F18: (5)	F19: (6)	F20: (6)		
	S18: (4)	S19: (7)	S20: (7)		
Residential Design AAS	F18: (5)	F19: (2)	F20 (1)		
	S18: (6)	S19: (3)	S20 (0)		
Construction Management AAS	F18: (8)	F19: (3)	F20: (0)		
	S18: (12)	S19: (4)	S20: (1)		

Number of Full-time Faculty
One (1): Kreg Mebust
Understood Mike Holmes, professor overseeing Construction Management, retired F20
Understood Kaysi Archey, instructor overseeing the Architecture Program at ACE High School, joined as a full-time faculty member F20

Pedagogical Approaches

Architecture, Residential Design and Landscape Architecture. Fusing design with critical thinking, TMCC teaches students to have the confidence to document their ideas and results in analog and digital formats. The curriculum uses approaches that are **constructivist** (students contrast or make their own knowledge and that reality is determined by the experiences of the learner), **inquiry-based** (it is about curiosity. The approach emphasizes students' questions, ideas and observations that promotes discussions among their peers), **reflective** (thinking about what was done or learned and making meaning out of the lesson), **collaborative** (groups are used to enhance learning through working together), and **integrative** (learners bring together prior knowledge and experiences to support new knowledge and experiences). The **spiral learning approach** exposes students to a wide variety of concepts, projects and building typologies. The encountered topics expand knowledge through repetition but with different deepening of complexities.

Construction Management. Add text here

1.B. Program or Unit Mission

Architecture Design

Construction & Design 2020-21 PUR Self-Study

State the department's or unit's mission. Describe how it aligns to the College's Mission, and how program learning outcomes (PLOs) for degrees and certificates offered, or for the unit, align to the department/unit mission. If your department or unit does not currently have a mission statement, please discuss among your colleagues and develop one.

Department Mission Statement. The degree pathways of Architecture, Residential Design and Landscape Architecture provide high-quality instruction that promotes leadership, vision, social responsibility and sustainability to prepare students for entry level and professional positions, continued and advanced studies, and lifelong learning.

Alignment with TMCC's Vision. Many students have moved forward within degree pathways while others have pursued tangential careers. Community-based service-learning projects have been and continue to be a vital curriculum component. Kreg Mebust was the recipient of TMCC's 2019 Faculty Excellence in Service Award and 2019 NISOD recipient for his community-based projects.

Alignment with TMCC's Mission. The architecture program has maintained current and relevant relationship with the community via regularly scheduled advisory board meetings. The Nevada State Board of Landscape Architecture endorsed TMCC's Landscape Architecture degree emphasis. The Nevada State Board of Architects, Interior Design and Residential Design endorsed TMCC's Residential Design degree emphasis.

1.C. Program Learning Outcomes

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Program Learning Outcomes (PSLOs or PLOs)
Architecture Design
CONSTRUCTION AND DESIGN TECHNOLOGIES
Associate of Applied Science, Construction and Design, Residential Design
PSLO1: Identify and apply residential design theories. (Active from Summer 2020)
PSLO2: Prepare basic residential project types demonstrating design and construction and knowledge. (Active from Summer 2020)
PSLO3: Synthesize the knowledge and skills that will enable them to meet the educational requirements for candidates pursuing a residential designer processional license. (Active from Summer 2020)
Associate of Applied Science, Construction and Design, Architecture
PSLO1: Identify and apply architectural design theories.
PSLO2: Prepare basic architectural presentations demonstrating design and construction knowledge.
PSLO3: Synthesize course knowledge and skills that will enable them to meet the requirements for acceptance into an accredited architectural program.
Associate of Applied Science, Construction and Design, Landscape Architecture
PSLO1: Demonstrate a basic knowledge of landscape architectural design theory as it relates to form, space, and order as it pertains to the practice of landscape architecture.
PSLO2: Demonstrate the ability to prepare basic landscape architectural presentations demonstrating design and construction knowledge.
PSLO3: Synthesize course knowledge and skills that will enable them to meet the requirements for acceptance into an accredited landscape architectural program.
Associate of Applied Science, Construction and Design, Construction Management
PSLO1: Understand, develop, apply and demonstrate specific construction management skills related to supervision techniques, scheduling, cost control systems and construction contracts.
PSLO2: Examine and evaluate construction project documents, plans and specifications as determined by the needs included in the material takeoff and estimating process.
PSLO3: Formulate and organize management applications utilizing general construction knowledge in the areas of safety, construction materials, scheduling and methods for efficient production.
CERTIFICATE OF ACHIEVEMENT
Architectural Drafting Certificate of Achievement
PSLO1: Formulate and organize proven management applications used for safety, project site supervision, scheduling, cost control, and contractual compliances in order to implement efficient project management strategies.

Program Learning Outcomes (PSLOs or PLOs)
SKILLS CERTIFICATE
Architectural Drafting, Skills Certificate
PSLO1: Students will recall and identify fundamental design theories.
PSLO2: Students will create and produce salient design solutions.
PSLO3: Students will justify individual design solutions.
AutoCADD Architectural Drafting Skills Certificate
PSLO 1: Students will apply their knowledge of preparing architectural orthographic drawings by illustrating floor plans, roof plans, elevations and choose the most appropriate cross sectional views, line-work, drawing sheet size setup, dimensions, and construction notes.
PSLO 2: Students will experiment with basic mathematical operations by calculating various measurements, areas and scale conversions and compare them to different architectural design solutions.
PSLO 3: Students will choose and modify the most appropriate kitchen and bath layout theories as applied to architectural design problems.
Skills Certificate, Construction and Design, Construction Estimating
PSLO1: Examine and evaluate construction plans, specifications, documents and contracts.
PSLO2: Generate material take-off quantities.
PSLO3: Prepare estimates and contract proposals.
PSLO4: Review project budgets and actual costs data in order to implement efficient project management strategies.
Skills Certificate, Construction and Design, Construction Project Management
PSLO1: Formulate and organize proven management applications used for safety, project site supervision, scheduling, cost control, and contractual compliances in order to implement efficient project management strategies.
Revit Architectural Drafting Skills Certificate
PSLO 1: Students will create and interpret conceptual hand drawings and apply the acquired evidence and reasoning to two dimensional building planes.
PSLO 2: Students will shape, modify and transform two dimensional objects into intelligent 3D models of buildings.
PSLO 3: Students will record and deduce the information found in 3D building models and will in turn compile a set of construction drawings.

2.A. Progress on Previous Findings and Recommendations

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Describe your progress on the major findings and recommendations for the program/unit from the last PUR, any annual progress reports (APRs), and if applicable, external reviews, (e.g. advisory boards, articulation committees, and program accreditors).

- **Which findings and recommendations have the program/unit addressed?**
- **Which have yet to be accomplished? Which are no longer relevant, and why?**
- **Has the program/unit undergone any major changes as a result or that would impact the findings and recommendations since the last PUR?**

COMPLETED. Progress on major findings and recommendations from the last PUR.

- Architecture, Landscape Architecture and Residential Design degrees changed from an Associate of Arts to an Associate of Applied Science
- Architecture, Landscape Architecture and Residential Design merged with Construction Management
- All four degrees can be found as emphasis under the umbrella of Construction and Design
- Architecture, Landscape Architecture, Residential Design degree pathways moved physical locations from Dandini Campus to the William Pennington Applied Technology Center (Campus)
- Dedicated studio space acquired F20
- Degree pathways adjusted to comply with NSHE's 60 credit mandate
- Course offerings realigned for clarity in sequencing between Fall and Spring semesters
- Hidden prerequisites were either eliminated or made visible
- Student population diversification trending up and exceeding national levels
- Golf Course Management emphasis eliminated
- Horticulture degree pathway eliminated
- Improvement of the Residential Design emphasis
- Conduct at least one annual recruiting/outreach event to secondary education
- Maintained regular schedule of advisory committee meetings
- Developed a prioritized list of equipment and technology needs
- Developed non-credit professional workshops both for students and practicing professionals (Revit Workshop 2017 - Present)
- Community based service learning projects elevated
- New technology recommendation: developed a priority for new technology via Perkin's funding for a laser cutter proposed F20 and declined
- New technology recommendation: Smart board tested and request submitted S21
- New technology recommendation: Wacom tablet for digital sketching
- Software relevancy up to date
- Created and maintained workforce development non credit class "Revit" available for working professionals.Course is approved for Health, Safety & Welfare Continuing Education Units as recognized by the NV State Board of Architects, Interior Design & Residential Design. ($20,000 raised to date).
- Created and maintained the "Brainfood" lecture series open to practicing landscape architects and students. Lecture series is approved for Continuing Education Units by the NV State Board of Landscape Architects.

- *Low enrollment numbers are trending up*

INCOMPLETE. Progress on major findings and recommendations from the last PUR.

- Suggested additional faculty. This need was magnified by retirements and an untimely death. "Only one fulltime faculty with multiple demands placed on him (Kreg Mebust) related to teaching, program planning, community outreach, student mentoring, and oversight of part-time faculty." (2014-15 Dr. Jane Nichols). *Footnote, said full-time faculty member at ACE High School does not apply. All full-time contract hours are consumed at the ACE High School physical location.*
- Transfer agreement with University of Nevada, Las Vegas (UNLV)
- Needs analysis for Interior Design BAS

3.A. Technical Programs (AAS degrees and Certificates; Allied Health Programs only)

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Describe how your program(s) are meeting labor market demands and industry curriculum needs by answering the accompanying questions. The following are potential resources for labor market data, though other sources may be referenced.
Nevada Department of Employment Training and Rehabilitation (DETR) (https://detr.nv.gov/)
Economic Development Authority of Western Nevada (EDAWN) (http://edawn.org/)
U.S. Bureau of Labor Statistics (http://www.bls.gov/)

- **What is the evidence for the regional need for the program (DETR and EDAWN data)?**
- **What is the evidence that program curriculum meets the latest industry trends or workforce needs?**

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. Due to market demand and educational similarities, Residential Design will be combined with Architecture. As it pertains to the potential resources for labor marked data:
ARCHITECTURE

1. Department of Employment, Training and Rehabilitation (DETR) – State of Nevada statewide occupational employment and projections for Architecture and Engineering, 2016-2026 anticipates 38.25% growth.
2. Narrowing the "State of Nevada" search (DETER 2016-2026 [SOC Code 17-1011]) to include just Architecture (excluding Engineering, Landscape and Naval), 2016-2026 anticipates 17.05% growth (average annual growth rate of 1.7%).

3. Narrowing the State of Nevada DETR search to include just the "Reno/Sparks" Metropolitan area, 2016-2026 anticipates 17.05% growth.
4. Narrowing the State of Nevada DETR search to include just the "Las Vegas" Metropolitan area, 2016-2026 anticipates 18% growth.
5. The Nevada, U.S. Bureau Statewide Occupational Employment and Projections, 2018-2028, anticipates 21.1% growth.
6. EDAWN: Renewable energy is an important and integral part of the energy industry in Nevada. Architects design structures that utilize geothermal, solar, building electrification, and wind.
7. The U.S. Bureau of Labor Statistics calculates the average annual expenditures, United States and Western States (2019) at +/- 30% of a wage earners expenses. Architects and Residential Designers are integral to the expenditures.

LANDSCAPE ARCHITECTURE

1. Department of Employment, Training and Rehabilitation (DETR) - State of Nevada statewide occupational employment and projections for Landscape Architecture, 2018-2028, anticipates 50% growth.
2. The Nevada U.S. Bureau Statewide Occupational Employment and Projections, 2019-2029, anticipates a 2% decline.
3. EDAWN: Renewable energy is an important and integral part of the energy industry in Nevada. Landscape Architects design structures that protect our waterways.

CONSTRUCTION MANAGEMENT

1. Department of Employment, Training and Rehabilitation (DETER) - State of Nevada statewide occupational employment and projections for Construction Management, 2016-2026, anticipates 275 growth.
2. The U.S. Bureau of Labor Statistics demonstrates a steady 8% growth in the fields of Construction Management from 2019-2029.

3.B. Transferability

Architecture Design

Construction & Design 2020-21 PUR Self-Study

- **Which Bachelor's degrees(s), especially within the Nevada System of Higher Education, does the program's AA or AS degree(s) align?**
- **Does the AA or AS transfer seamlessly in a 2+2 agreement without a loss of credits or a substantial amount of courses counting only as general electives? Please reference the appropriate transfer agreement in the receiving institution’s catalog and explain.**

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to transferability:

1. Architecture is considered a transferable degree. Articulation attempts with UNLV have been ongoing. TMCC students transferring to UNLV to seek NV licensure are faced with only one option, an accredited Master's Degree (four additional years of study).
2. Residential Design is considered a terminal degree. The Nevada State Board of Architects, Interior Design and Residential Design recognize TMCC's program by offering a two year credit towards state requirements. Students must fulfill work requirements.
3. Landscape Architecture is considered both a terminal and a transfer degree. As it pertains to a terminal degree, students may register with the Nevada State Board of Landscape Architecture and establish a record as a Landscape Architect in Training. LAIT applicants are eligible to sit for certain sections of the Landscape Architectural Registration Exam. Students must fulfill work requirements. As it pertains to a transfer degree, students typically transfer to UNLV. An articulation agreement with UNLV does not exist.
4. Construction Management is a terminal degree. Students enter the workforce upon graduation.

3.C. Student-centered Offerings

Architecture Design

Construction & Design 2020-21 PUR Self-Study

- **Is the program Information In the catalog up-to-date?**
- **Does the program's suggested course sequence in the catalog allow for completion of degrees within 2 years and/or certificates within 2 semesters for full-time students? Is there a recommended sequence for part-time students?**
- **Describe how courses are scheduled and faculty teaching schedules are assigned. How does the department/unit schedule its course offerings in a student-centered manner that meets student demand and allows for efficient completion? How are teaching assignments determined so that they are equitable for faculty?**

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to Student-centered Offerings:

- Architecture, Residential Design, Landscape Architecture & Construction Management. Catalog program information is up to date. Course sequencing allows for a two year completion. Skills Certificates and Certificate of Achievement are all stackable. Each emphasis displays clear and concise course sequencing tables. Course are scheduled at different times throughout the spring and fall semesters as to accommodate a variety of work schedules. Faculty are assigned by their experience in their respective fields (architecture, residential design, landscape architecture, and construction management). Online teaching platforms have created equitable conditions for many of the part-time faculty.

3.D. Accessibility of Instructional Materials

Architecture Design

Construction & Design 2020-21 PUR Self-Study

What is the department/unit currently doing or planning to help ensure that instructional materials are accessible to students with disabilities? For example, have all full-time faculty attended accessibility workshops? Have full-time faculty used the accessibility purchase checker when purchasing new curricular materials? Has the department/unit taken steps to ensure part-time faculty are using accessible instructional materials?

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to accessibility of Instructional Materials:

- Architecture, Residential Design, Landscape Architecture & Construction Management.

Full-time and Part-time faculty work extensively with TMCC's Web College for best practices for CANVAS content. For example, tables are avoided and closed captioned videos are encouraged. Full-time faculty are sensitive to the American Disability Act as it relates directly to the architecture, residential design, landscape architecture and construction management. The licensed full-time faculty member fulfills eight health, safety and welfare continuing education units on an annual basis.

4.A. Curriculum Mapping

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Curriculum mapping, in Elumens has been completed for the following:

1. Architecture
2. Residential Design
3. Landscape Architecture

Curriculum mapping, in Elumens has NOT been completed for the following (due to the full-time faculty member retiring):

1. Construction Management

Once your map is complete, please analyze the following:

- **PLOs: Do all PLOs still reflect what you want students to demonstrate once they complete the program? Are there any PLOs that need to be updated?**

- **Potential gaps and redundancies: Are there any PLOs that are not addressed in the curriculum? Are there any unwanted redundancies of PLOs in the curriculum?**
- **CLO alignment: Is there a need to modify any course learning outcomes so that courses better support PLOs?**
- **Course sequencing: Is there a need to modify the course sequencing, so students have a more seamless learning experience?**
- **Curriculum and learning opportunities: Is it necessary to introduce new learning opportunities to reinforce learning? These could be modules or assignments in courses, additional courses, and/or co-curricular opportunities that would be required of all students in the program.**
- **Other?**

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to Program Learning Outcomes (PLOs):

A. PROGRAM LEARNING OUTCOMES

ARCHITECTURE

1. Identify and apply architectural design theories.
2. Prepare basic architectural presentations demonstrating design and construction knowledge.
3. Synthesize course knowledge and skills that will enable them to meet the requirements for acceptance into an accredited architectural program.

LANDSCAPE ARCHITECTURE

1. Demonstrate a basic knowledge of landscape architectural design theory as it relates to form, space, and order as it pertains to the practice of landscape architecture.
2. Demonstrate the ability to prepare basic landscape architectural presentations of design and construction knowledge
3. Synthesize course knowledge and skills that will enable them to meet the requirements for acceptance into an accredited landscape architectural program.

RESIDENTIAL DESIGN

1. Identify and apply residential design theories.
2. Prepare basic residential project types demonstrating design and construction knowledge.
3. Synthesize the knowledge and skills that will enable them to meet the educational requirements for candidates pursuing a residential designer professional license.

B. PLO REFLECTION

1. Design theories are, and will continue to be, the foundations of each emphasis. The current wording has "opened-the-door" to current discussions circulating around gender equality, implied biases in the built environment and how technology transforms our decision making process. No anticipated change.
2. Each emphasis relies upon the analog and digital representation of "Instruments of Service" the language is cross disciplinary and is still relevant as it pertains to testing and plan

submissions to reviewing agencies. No anticipated change.
3. Educational requirements are common with each emphasis. No anticipated change.

C. Course Learning Outcome (CLO) Alignment - Recent course assessment have revealed the following:

1. AAD 101 requires minor edits
2. AAD 223 requires minor edits
3. AAD 265 requires minor edits
4. Summary. Courses demonstrate, align, and support the PLOs.

D. Course Sequencing

1. Course sequencing is generally working. The one exception may be AAD 100. A request to TMCC's Institutional Research should be placed to query how many student that enroll in AAD 100 continue or discontinue towards a degree emphasis in either Architecture, Landscape Architecture, or Residential Design.

E. Curriculum and Learning Opportunities

1. As of late, S21, I am evaluating how students are learning and applying the process work associated with the developing preliminary design solutions. Evidence has revealed confusion between the meaning and transitionary steps from the Parti, Bubble Diagrams and Conceptual Floor Plans. Research Hypothesis: Students excel very well with three dimensional model making. I plan to reverse the design traditional design process. Students will begin with three dimensional models, then create floor plans, bubble diagrams and finally a parti.

F. Other

1. Part-time instructors can alter significantly the outcomes of a course.

4.B. Evidence of Program Learning Outcomes Assessment

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Now that you have completed your curriculum map, summarize the most significant *program* assessment results since your last PUR. These will come from any data we have available in eLumen as well as past assessment reports. Please discuss these findings as they relate to the program and program learning outcomes, not just individual courses.

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to the most significant program assessment result(s):

Revisiting Section 2A "Progress on Previous Findings & Recommendations," please consider the following as it pertains to Architecture, Landscape Architecture and Residential Design:

1. Dedicated studio space acquired F20 - A studio environment that fosters collaborative and shared learning experiences is critical to design and community building. As students

share design alternatives with each other, they are immersed into a variety of opinions and cultural backgrounds. In turn, the design process is enriched and solutions evolve with a greater sense of context, purpose and consequence.

2. Providing a clear pathways have enabled students to navigate without confusion. In addition, the stackable skills certificates provide confidence.

3. The elimination of hidden prerequisites have enabled to students to reach their goals in a timely manner. Students regard the "system" with a higher level of trust.

4. Lastly, of great importance, the lead faculty member, Kreg Mebust has recently obtained the Residential Design license as recognized by the State of Nevada. The level of instruction and assignments are now more focused and assembled with greater confidence.

5. In summary, items one and four above have provided a deeper insight into the validity of the program learning outcomes. The good news, the current PLOs are still valid and relevant.

Describe how plans were implemented to try and improve teaching and learning. What changes did you make to the program based on assessment results and improvement plans?

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to the description of how plans were implemented/changes made in order to improve teaching and learning.

ARCHITECTURE, LANDSCAPE ARCHITECTURE & RESIDENTIAL DESIGN

1. As mentioned in 4B, the plan was to become a licensed Residential Designer in Nevada. With this accomplishment, changes have been made that specifically challenge the students with programming, applying building codes and creating simulated work environments that are framed around time limitations.

2. "Community Based Service Learning" opportunities have expanded typologies and learning environments that align closer to actual working conditions. This has allowed student and client interactions that have enriched the learning environment as it pertains to programming and communication skills. Community based learning typologies have enriched each of the three emphasis.

3. As recognized in the Architectural Advisory Board meetings, there is a pressing need for students to be well versed with the workflow between analog and digital processes. Students now have laptops at their studio desks, a "Smart Board" computer is now in the studio space that enables interactive learning between instructor and students, and soon the studio space will have an 11x17 color scanner and copier at their disposal. A laser cutter was turned down at the F20 Perkins request cycle.

4.C. General Education Outcomes Assessment

Architecture Design

Construction & Design 2020-21 PUR Self-Study

- **Identify which general education learning outcomes (GELOs) you assessed and summarize the most significant assessment results.**
- **Describe how plans were implemented to try and improve teaching and learning in general education (GE). What changes did you make assessment results and improvement plans? Do any CLOs need to be changed to meet GE assessment requirements?**

General Education Learning Outcomes can only be found in one course offering within all four emphasis: AAD 201, History of the Built Environment. During the last assessment, prior to ELumens, all of the learning outcomes were measured. While the learning outcomes are still relevant, significant changes were made to the specific assignments/exams. Change include the following:

1. Exams and quizzes have utilized CANVAS as the main delivery platform.
2. Exams and quizzes have added more graphic images due to the visual nature of architectural styles, floor plans and elevations.
3. The "anchoring" writing assignment was changed. Students now assume the role of a "period" travel writer. Research includes cultural items such as travel, religion, food, clothing etc.
4. AAD 201 assessment data gathering will commence during the Fall 21 semester.

4.D. Five-year Course Assessment Cycle

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Technical Sciences 5-Year Course Assessment Cycle (see tabs for course prefixes)

As the Chair of Applied Technologies, I have printed a 24x36 poster inside the Edison "breakroom." Consequently, I am very aware of the Course Assessment Cycles for each emphasis.

Currently (S21) all assessments are up to date. AAD 201, History of the Built Environment, is due for assessment/data gather during the Fall 21 semester.

5.A. FTE, Section Count, Course Fill Rate, and Unsuccessful Enrollment Attempts

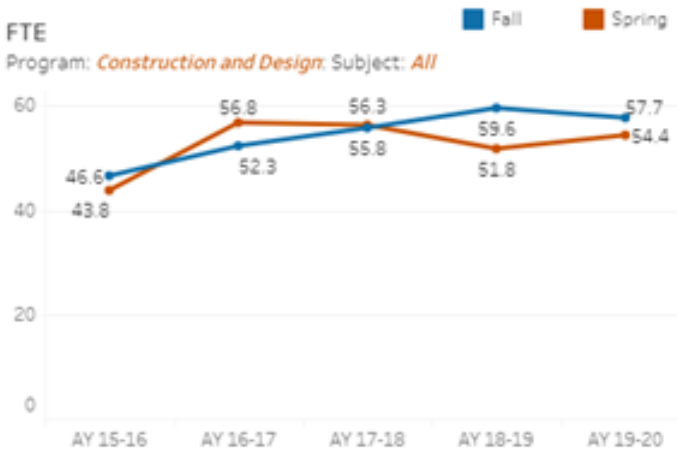
Architecture Design

Construction & Design 2020-21 PUR Self-Study

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to "Enrollment Data" captured in TMCCs Data Dashboard. Please consider the findings and analyses:

ENROLLMENT - DATA DASHBOARD ACADEMIC YEAR 15-16 TO ACADEMIC YEAR 19-20

1. **Enrollment FTE – Construction and Design AY15-16 thru AY 19-20.** Reflection: Fall trend lines depicts consistent growth. Spring trend lines fluctuate which may be an indicator of students either taking courses out of sequence. The 488% increase in CONS is reflective of a thriving economy.



5 Year Change in FTE

	Fall	Spring
AAD	17%	-9%
ADT	-21%	33%
BI		
CONS	102%	488%

	Fall	Spring
Business and Social Sciences Div	-1%	-6%
Liberal Arts Div	-13%	-22%
Life Sciences, Allied Health & Public Safe..	3%	-2%
Math & Physical Sciences Div	3%	-6%
Technical Sciences Div	3%	8%
TMCC	-3%	-8%

- **Enrollment FTE, College Wide Analysis.** As a collective 5 year snapshot of all 4 emphases by Academic Year (AY), the trend increases from from 90.4 FTE (AY15-16) to 112.1 FTE (AY19-20). Of note, AAD classes reflect a growth of 3%. Technical Sciences Division reflects an increase of 6% while TMCC as a whole displays a decrease of -6%. ADT classes are also down by -1%. The trendlines for AAD are more important than the ADT numbers. The degree pathways of Architecture, Landscape Architecture and Residential Design are predominantly comprise of AAD course offerings.
- **Section Count, College Wide Analysis.** Of note, Section counts for AAD are three times (24%) more than the TMCCs overall average of 8%. It would appear that we are offering an appropriate amount of classes. Of note, The CONS section counts are at 50%. Isolating the CONS sections, it appears that more courses were added in AY16-17. As for multiple section offerings for AAD 100 (Intro. to Arch.) and AAD 201 (History of the Built Environment), each traditionally via face-to-face modalities, both AAD 100 and AAD 201 have witnessed significant fill rates when shifted over to all online offerings (due to the pandemic). For example, AAD 201 (History of the Built Environment), face-to-face classes filled two sections consistently whereas the

third section filled at 50%. At times a fourth section was often cancelled. Currently, all four AAD 201 offerings were at 100% capacity.

- **Avg. Fill Rate, College Wide Analyses.** Trend lines for AAD and CONS classes, representative of course degree emphases, have been steady over the past five years. Of note, each are below the TMCC average of 71%. AAD = 68% CONS = 61%.

ENROLLMENT - COURSE LEVEL FILL RATE & ENROLLMENT ATTEMPTS

1. **AAD 5 Yr Avg. Course Level Fill Rate.** AAD course fill rates typically trend from 51-69%. Falling below at 40% (AAD 181/182) is due to the courses being eliminated. Numbers reflect "teach-out" for catalog right holders. Rising above at 85% (AAD 201) is due to a "double dipping" option for students picking up a Humanities course. AAD 125 will typically be higher because it is a required course shared by all emphases.
2. **ADT 5 Yr. Avg. Course Level Fill Rate.** ADT courses require updates. ADT 256 and ADT 245 have been discontinued. As for ADT 120, a steady decline will continue as it is tied in with the "Renewable Energies" program which has been placed on hold. As for ADT 105, class taken only by Residential Design students; a 30% average sounds appropriate.
3. **CONS 5 Yr. Avg. Course Level Fill Rate.** The trends displayed characterize high fill rates in first year classes at 60-70% and a decline in second year classes at 30-60%. This can be attributed to attrition rates.

Please analyze and discuss the trends you see in FTE and section counts, including how they compare to those of the division and College. Discuss any factors that could have led to significant trends or shifts in enrollment and sections offered.

Please analyze the default settings first. Then, you may use the drop-down menus to examine more disaggregated data sets. If you describe any trends in these more specific data, please include a screen shot of the data to accompany your discussion.

1. **Enrollment FTE AAD.** AAD courses shared more by Architects, Landscape Architects, and Residential Designers than Construction Management students (CONS). The 5 year snapshot demonstrates a relatively flat growth rate; from 69.0 (AY15-16) to 71.4 (AY19-20) with holding pattern at 3%. AAD classes are half of the Technical Sciences Division (6%). The trend line is above the negative 6% campus wide.
2. **Enrollment FTE ADT.** ADT courses shared more by degrees such as Renewable Energies and Residential Designers. The 5 year snapshot trends from 5.0 FTE (AY15-16) to 4.9 FTE (AY19-20), with a a peak of 6.8 FTE (AY16-

17). Trend line shows a -1% growth; well under the 6% trend line of Technical Sciences.

3. **Enrollment FTE CONS.** CONS courses shared primarily with Construction Management students. The 5 year snapshot indicates a tremendous growth from 11.6 FTE (AY15-16) to the apex of 35.8 FTE (AY 19-20) claiming 209% growth. Well above the 6% Technical Sciences and the -6% campus wide.
4. **Enrollment Analyses.** The data would indicates a tremendous increase in the CONS listings while the AAD and ADT listings are relatively flat. The spike in CONS classes directly correlates with the increase in residential and commercial building starts. The Renewable Energies program has been placed on hold (AY 20-21), this might explain the steady decline from the peak in (AY 16-17).

Please analyze and discuss the trends or shifts you see. Discuss any factors that could have led to significant trends or shifts in course fill rate and unsuccessful enrollment attempts.

Please analyze the default settings first. Then, you may use the drop-down menus to examine more disaggregated data sets. If you describe any trends in these more specific data, please include a screen shot of the data to accompany your discussion.

SIGNIFICANT TRENDS

1. Construction Management's 206% FTE growth rate is exciting. Due primarily to the economy. Construction starts have significantly increased. With the loss of the full-time faculty member overseeing CONS, a full-time faculty member is needed to oversee growth.
2. Architecture, Landscape Architecture and Residential Design are flat. Three items stand out:
    1. Increased marketing efforts in middle and high schools are important.
    2. Students may not be excited with transferring to another institution.
    3. TMCC Architecture has recently joined with ACE High School. ACE is now offering dual credit architectural courses. Enrollment trends should increase over the next five years.

5.B. Student Demographics: Ethnicity, Gender, Credit Load, Student Status, and Age Range

Architecture Design

Construction & Design 2020-21 PUR Self-Study

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to "Demographics Data" captured in TMCCs Data Dashboard, please consider the findings and analyses:

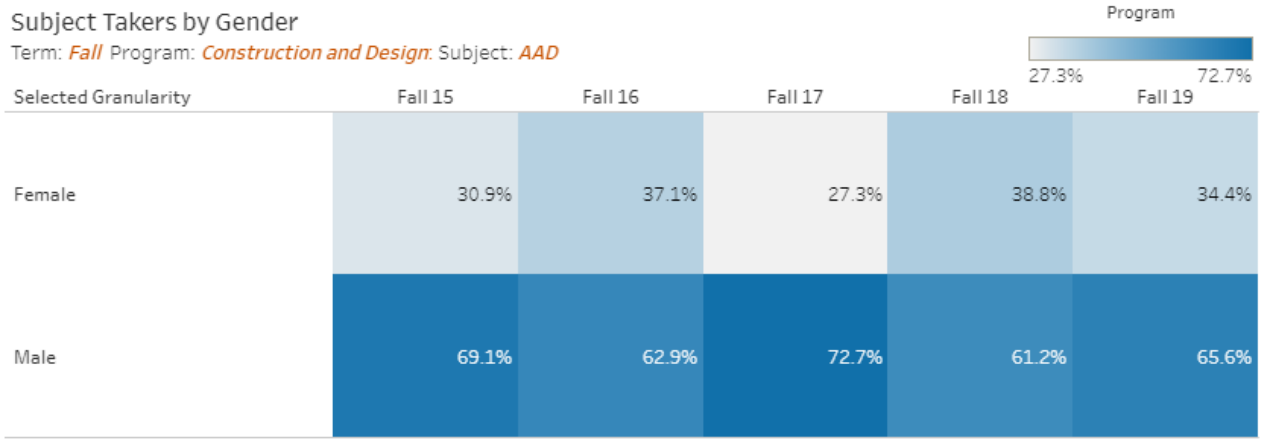
DEMOGRAPHICS - ACADEMIC YEAR 15-16 TO ACADEMIC YEAR 19-20 - COLLEGE WIDE ANALYSIS

1. **Ethnicity, College Wide Analysis.** As a collective 5-year snapshot of the college ethnic demographics by Academic Year (AY), the population of Caucasian students steadily decreases from 59.3% (AY15-16) to 51.7% (AY19-20) whereas the Hispanic population continuously increased from 25.4% (AY15-16) to 32.3% (AY19-20). Additionally, International and American Indian populations decreased within a single percent, Black populations increased by a single percent and Asian populations remained steady.
2. **Gender, College Wide Analysis.** As a collective 5-year snapshot of the gender demographics by Academic Year (AY), the population of male and female students remained steady at approximately 46% male and 54% female students from (AY 15-16) to (AY 19-20) with 0.4% unreported (AY 18-19).
3. **Credit Load, College Wide Analysis.** A college wide analysis of the average credit load at TMCC between Academic Years 2015 and 2019, reveals that the full time student population at TMCC remained within 27-29% and the part-time student population between 71-73%.
4. **Student Status, College Wide Analysis.** Looking at the student statuses over the Academic Years 2015-2019, there has been a 10% decrease of continuing students from 72% to 62%. Additionally, new students has increased by one percent and new and continuing high school students presents a significant percentage increase.
5. **Age Range, College Wide Analysis.** Looking at the age range of student populations across the entire college between the Academic Years of 2015 and 2019, there has been a steady decline in students between the ages of 18 and 24, a significant increase of populations under 18 and a slight decrease in populations 25 and above.

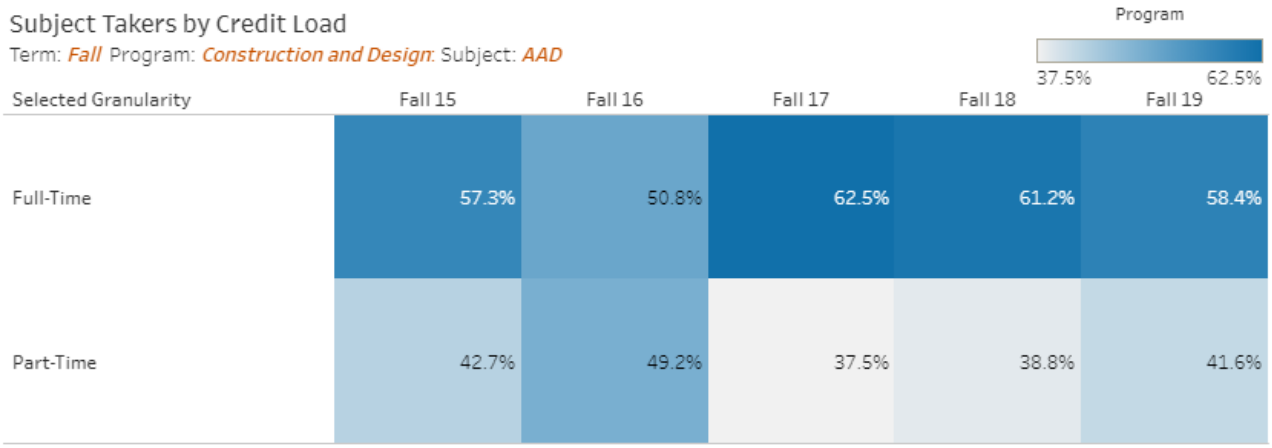
DEMOGRAPHICS - ACADEMIC YEAR 15-16 TO ACADEMIC YEAR 19-20 - CONSTRUCTION AND DESIGN ANALYSIS

1. **Ethnicity FTE AAD.** As a collective 5-year snapshot of the college ethnic demographics by Academic Year (AY), the population of Caucasian students steadily decreases from 62.2% (AY15-16) to 42.5% (AY19-20) whereas the Hispanic population continuously increased from 28.6% (AY15-16) to 46% (AY19-20). Additionally, International, American Indian, Black and Asian populations increased within a single percent.
2. **Gender FTE AAD.** As a collective 5-year snapshot of the gender demographics by Academic Year, the population of male and female students

enrolled in AAD classes was as follows… While the female population is the minority in this subject, there is an overall upward trend from 30.9% enrollment AY 15-16 to 34.4% enrollment AY 19-20. As indicated the male population has remained the majority, with an average enrollment of 66.3% between AY 15-16 and 19-20.



- **Gender FTE ADT and CONS.** ADT and CONS make up a rather minor portion of the major pathways in the Construction and Design program and therefore are not our main focus., however, similarly between AY 15-16 and AY 19-20, there has been a consistent upward trend of the female population.
- **Credit Load FTE AAD.** As a collective 5-year snapshot of the gender demographics by Academic Year (AY), the population of students enrolled in AAD classes has remained consistent between AY 15-16 and AY 19-20 at approximately 58% full-time students and 42% part-time students.



- **Credit Load FTE CONS.** Between AY 15-16 and AY 19-20, there has been a consistent trend of approximately 33% full-time students and 67% part-time students which we can assume is likely due to the fact that the construction industry is thriving and more students are managing work and school simultaneously.

- **Student Status FTE AAD.** Between AY 15-16 and AY 19-20, there has been a consistent trend of approximately 75% of continuing students, an increasing trend in new students by 4.2%, and fluctuation in the High School student area likely due to new and changing programs such as the ACE High School Architecture Program.

Subject Takers by Student Status

Term: *Fall* Program: *Construction and Design*: Subject: *AAD*

Program 0.9% 79.1%

Selected Granularity	Fall 15	Fall 16	Fall 17	Fall 18	Fall 19
New	11.8%	16.9%	14.1%	14.0%	16.0%
Continuing	79.1%	75.0%	74.2%	71.3%	76.0%
New Transfer	8.2%	4.8%	8.6%	11.6%	6.4%
New High School	0.9%	3.2%			
Continuing HS			3.1%	3.1%	1.6%

- **Student Status FTE CONS.** Between AY 15-16 and AY 19-20, there as been an increasing trend of approximately 10% of new students, a steady decline in continuing students from 76.7% to 53.1% likely due to the increased demand in the workforce, and a significant increase of 18% of new high school students likely as a result of the ACE High School Construction Program.

Subject Takers by Student Status

Term: *Fall* Program: *Construction and Design*: Subject: *CONS*

Program 2.4% 76.9%

Selected Granularity	Fall 15	Fall 16	Fall 17	Fall 18	Fall 19
New	10.0%	28.6%	10.3%	28.6%	20.4%
Continuing	76.7%	64.3%	76.9%	53.6%	53.1%
New Transfer	13.3%	4.8%	12.8%	8.9%	6.1%
New High School		2.4%		8.9%	20.4%

- **Age Range FTE AAD.** Looking at the age range of student populations taking AAD courses, there is a steady incline in ages younger than 18 up to 34, with an opposing decline in ages 35 and above. This increase in the younger generation is likely due to the increased exposure and advertisement, whereas the older generation may be responding to the demanding workforce.

Briefly describe the typical student profile in terms of ethnicity, gender, credit load, student status, and age in your program/unit. Please note and discuss any reasons why the demographics of students in your program noticeably differ from TMCC's student demographics. Please note any potentially underserved student populations and the reasons why they may exist.

Analyzing the Construction and Design program demographic data between the Academic Years 2015 to 2019, I've found that the typical students demographic profile would be as follows… The ethnicity of a typical student profile in the Academic Year 2015 would have been Caucasian, however the ethnic demographic has become more diverse and the typical student in the Academic Year 2019 would likely be Hispanic. Additionally, the typical student profile would be a continuing male student between the ages of 18-24, enrolled part-time. Noticeable differences between the Construction and Design program and the demographics of TMCC include age range, credit load in combination with student status and ethnicity. Findings are as follows…

1. **Age Range.** The Construction and Design program has a very low if not nonexistent population of students under the age of 18 versus TMCC's gradually increasing 12.7% (AY 19-20). Understood this is because there wasn' t a program for students of that age range, high school students, until the Academic Year 20-21. Additionally, Construction and Design serves an above average population of students 50 and above.
2. **Credit Load and Student Status.** The Construction and Design program saw an above average increase in continuing students in the Academic Years 15-16, 17-18 and 19-20 with a paralleled increase in full-time students. It can be assumed that students are increasing their credit load as they move through the program.
3. **Ethnicity.** TMCC's Caucasian population has decreased from nearly 60% (AY 15-16) to 51.7% (AY 19-20) along with an increase of the Hispanic population from 25.4% (AY 15-16) to 32.3% (AY19-20). The Construction and Design program has seen a similar increase in Caucasian and decrease in Hispanic populations, however the Hispanic population has surpassed Caucasian students in the program (46% Hispanic (AY19-20), 42.5% Caucasian (AY19-20)). Additionally, there is an increase seen in the International, American Indian, Asian and Black populations in the Construction and Design program which has resulted in a very diverse population.

6.A. Course Completion

Architecture Design

Construction & Design 2020-21 PUR Self-Study

As a reminder, under the Associates of Applied Science, Construction and Design, resides four emphases: Architecture, Landscape Architecture, Residential Design, and Construction Management. As it pertains to "Course Completion" captured in TMCCs Data Dashboard, please consider the findings and analyses:

COURSE COMPLETION - DATA DASHBOARD ACADEMIC YEAR 15-16 TO ACADEMIC YEAR 19-20

1. **Business and Social Sciences Division Analysis.** As a collective 5-year snapshot of the Business and Social Science Division of the college, the overall completion rate averages 79% and the average successful completion rate is down by 10% at 69%.
2. **Liberal Arts Division Analysis.** As a collective 5-year snapshot of the Liberal Arts Division of the college, the overall completion rate averages 78% and the average successful completion rate is down by 8% at 70%.
3. **Life Sciences, Allied Health and Public Safety Division Analysis.** As a collective 5-year snapshot of the Life Sciences, Allied Health and Public Safety Division of the college, the overall completion rate averages 86% and the average successful completion rate is down by 9% at 77%.
4. **Math and Physical Sciences Division Analysis.** As a collective 5-year snapshot of the Math and Physical Sciences Division of the college, the overall completion rate averages 69% and the average successful completion rate is down by 14% at 54%.
5. As a collective 5-year snapshot of the Technical Sciences Division of the college, the overall completion rate averages 83% and the average successful completion rate is down 10% at 73%.**Technical Sciences Division Analysis.**

5 Yr Avg Completion & Successful Completion Rates by Division

Division: 54% – 86%

	Business & Social Sciences Div	Liberal Arts Div	Life Sciences, Allied Health & Public Safety Div	Math & Physical Sciences Div	Technical Sciences Div	TMCC
Completion Rate	79%	78%	86%	69%	83%	79%
Successful Completion	69%	70%	77%	54%	73%	69%

- **College Wide Analysis.** As a collective 5-year snapshot of the overall college, the course completion rate is at 79% whereas the successful completion rate is down 10% at 69%.

Please describe any substantial trends or shifts that you see in overall course completion rates and successful completion (C or better). What might these trends or shifts mean? Discuss any factors that could have led to these trends or shifts in the data. Next, disaggregate the data by student demographics and describe any substantial trends. An educational equity gap is where there is a significant and persistent disparity in educational attainment between different groups of students. Are there any equity gaps in course completion or successful completion rates?

Analyzing the Construction and Design program course completion data between the Academic Years 2015 to 2019, I have found that the overall completion and successful completion percentages are in line with the program averages between the same 5-year span: the average completion rate being 86% and the average successful completion rate being

78%. Noticeable trends within the Construction and Design program are seen during the Academic Year 19-20 and in age range.

1. **Academic Year.** The Construction and Design program, including AAD, ADT and CONS courses, displays an increase in completed courses in the Academic Year 19-20. Understood this is likely due to the circumstances created by COVID-19. Students have experienced more academic understanding due to the unavoidable impacts of the virus as well as had more access to courses online which has allowed for increased completion.

Avg Completion & Successful Completion Rates by Subject

Program: *Construction and Design* Subject: *AAD, ADT, CONS*

Program 50% 95%

Subject		AY 15-16 AY	AY 16-17 AY	AY 17-18 AY	AY 18-19 AY	AY 19-20 AY	5 yr Avg
AAD	Completion Rate	86%	86%	83%	87%	90%	86%
	Successful Completion	79%	78%	76%	78%	76%	78%
ADT	Completion Rate	81%	86%	82%	74%	94%	83%
	Successful Completion	81%	68%	77%	68%	50%	69%
CONS	Completion Rate	80%	85%	84%	86%	95%	87%
	Successful Completion	75%	68%	82%	79%	74%	76%

- **Age Range.** As we know, the Construction and Design program has had a very low population of students 18 and younger before the current Academic Year, so the increased completion average of 97% in AAD course and 100% in ADT courses and decreased completion average of 77% in CONS courses for student 18 and younger, is expected to be caused by the very low population of students to compare.

6.B. Graduation and Transfer

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Please discuss any trends or shifts that you see in overall graduation and transfer. Next, disaggregate the data by student demographics and describe any substantial trends. An educational equity gap is where there is a significant and persistent disparity in educational attainment between different groups of students. Are there any equity gaps in

graduation or transfer?

SIGNIFICANT TRENDS

1. The Construction and Design program displays a significant decline in overall graduations and transfers from 17 awards in AY 15-16 to 11 awards in AY 16-17 followed by an extreme incline of 24 graduations and transfers in AY 17-18. Reno's economy, between the years of 2016 and 2017, saw a significant incline of job growth that we can assume directly affected the rate at which students continued their education. For example, in the summer of 2016, the Tesla Gigafactory opened and by the end of the calendar year, had employed approximately 850 employees (not including the constructions workers). We can assume that the significant spike of graduations and transfers that followed was a result of Tesla encouraging and financially supporting their employees in furthering their education.

Awards
Program: *Construction and Design*

Program
1 10

		AY 14-15	AY 15-16	AY 16-17	AY 17-18	AY 18-19	Total Awards
Degrees	ARCDES-AAS					3	3
	ARCH-AA	5	10	5	5	6	31
	CONMG-AAS				1	2	3
	CONMGT-AAS	5	5	1	6	1	18
	LANDAR-AAS					1	1
	LANDARC-AA	2	2				4
	RESDE1-AAS				3	3	6
	RESDES-AAS	2		2	1	1	6
Skills Certificates	CNSTPM				2	7	9
	CONEST			3	6	5	14
Total Awards		14	17	11	24	29	95

Program Award Trend
Program: *Construction and Design*

- Student Demographics. The architecture program continually enrolls a diverse population of students: F'19= 32% Hispanic, 6% Asian, 2.8% African American,1% Native American, & 52% White. Architectural ethnicity data exceed college averages (2012-18).

7.A. Faculty Achievement

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Describe the program/unit's full-time (FT) faculty credentials, experience, and highlights of significant activities and/or contributions to TMCC. Please use the format below for each FT faculty member.

- **Faculty Name, FTE**

- **Degree(s) or professional certification(s) awarded, discipline, awarding institution**
- **Substantial accomplishments or contributions to the community, especially those related to education or your discipline (e.g. mentoring, community service) (please limit to 3)**
- **Number of years teaching at TMCC**
- **Total number of years in academia**
- **Primary courses taught**
- **Significant activities or contributions made to TMCC (Please limit to 3)**

Kreg Mebust
Kreg currently is lead faculty for Architecture, Residential Design and Landscape Architecture degree emphases. Kreg is a full-time tenured faculty member on his tenth year of service and on his thirty-fourth-year practicing in the private sector. Kreg holds a Bachelor's Degree in Landscape Architecture and a Master's Degree in Educational Leadership from University of Nevada Reno. He currently holds the following state recognized licenses:

- Residential Designer 373NV
- Landscape Architect 384NV & 4807CA
- Kreg is responsible for the first-year and second-year design classes along with architectural history classes.

Deysi Montes-Castillo
Deysi is a part-time faculty member that is currently in her fourth year of service and in sixth year in the private sector. Deysi holds a Bachelor's Degree in Architecture and Design from NSAD and a Master's Degree of Science in Sustainable Design from Philadelphia University.

- Deysi is responsible for the architectural history classes

Kaysi Archey
Kaysi is currently lead faculty for the Academy for Career Education (ACE) for Architecture, Residential Design and Landscape Architecture. The course offerings are associated with TMCC's Dual Credit Program; where students can earn college and high school credit at the same time. Kaysi is a full-time faculty member on her first year of service. Kaysi holds an Associate's of Science Degree in Architecture and an Associate's of Science Degree in Residential Design both from TMCC. Kaysi is lead instructor (2018 & 2019) for TMCC's EPIC non-credit workforce development course – Revit.

- Kaysi is responsible for the second, third and fourth year design classes.

Todd Copenhaver
Todd is a part-time faculty member this is currently on his eight year of service. Todd holds a Bachelor's of Architecture from the University of Southern California.

- Architecture License: 6856NV
- Todd is responsible for the second-year design classes

Ken Rose
Ken is a part-time faculty member this is currently on his third year of service. Ken has a Bachelor of Philosophy degree from California State University-Chico, a Professional degree in Art & Architecture from the University of Idaho, and Summer Seminar certificates from the Harvard University Graduate School of Design focused on College Student Centers and Campus Residential Communities.

- Architecture License: 3110NV & 19555CA (pending renewal)
- Kens is responsible for the construction drawing and detailing classes

7.B. FT/PT Faculty and Student Credit Hours Taught

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Architecture, Landscape Architecture, & Residential Design
Full-time faculty for Architecture, Residential Design and Landscape Architecture typically teach 15 to 21 credits. Kreg Mebust currently resides as the Chair for the Applied Technologies Center (9 credit release). Over the past five years, Kreg has been consistently held a contract load of 21 credits. Kaysi Archey contract credit load consistently resides at 21 credits.
Full-time faculty for Construction Management retired at the end of the Fall '20 semester.

Part-time faculty for Architecture, Residential Design and Landscape Architecture, range anywhere from 3 to 9 credits. On Average, each semester retains 5 part-time faculty. Contract credit loads vary with each.

Construction Management
Part-time faculty for Construction Management, due to the retired full-time faculty member, has risen dramatically.

Describe the trends or shifts in the number of full-time (FT) and part-time (PT) faculty, and the number of student credit hours (SCH) taught by FT and PT faculty since the last program/unit review. What Impact, if any, have these trends or shifts had on the program/unit?

Architecture, Landscape Architecture, and Residential Design.
The trend line for the two full-time faculty has been consistent throughout the past five years. No changes are anticipated.
The trend line for part-time faculty, over the past five years have been consistent with 4-5 instructors at a varied rate of 3-9 credits.

Construction Management.
Part-time faculty for Construction Management, due to the retired full time faculty member, has risen dramatically. Any trend lines are too early to analyze. Due to "Early Buy-outs," the full-time position will lay fallow for three years (Fall '20 thru Fall '23). Consequently, the Construction Management degree pathway will be 100% dependent upon part-time faculty.

7.C. Support Staff

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Describe the program/unit's support staff, including their FTE, major duties, and any specialized credentials necessary to carry out their duties. Is the number of staff adequate to support the program/unit? Explain.

Support staff for all Construction and Design degree pathways have been handled by the Dean's Administrative Assistant. There have been exceptions such as Instructor Assistants have been hired during AY 15-16 and AY19-20. One I.A. typically is required for the computer aided drafting courses.

7.D. Facilities and Technology

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Describe the facilities and technology used by the program/unit, and discuss any unique requirements. These may include labs, studios, off-campus sites, computer classrooms, specialized equipment, etc. Are program/unit facilities and technology adequate to support the program? Explain.

Architecture, Landscape Architecture, Residential Design and Construction Management degree pathways:
Existing classrooms found on the Pennington Applied Technology Center: 113 Computer Lab (800sf), 210 Studio/Classroom (+/- 1,000 sf), 264 Studio/Classroom (1,525sf), 265 Classroom (820sf), and 267 Supply Rm. (200sf).
Comments:
Room 113 is shared amongst all program at the Applied Tech. Center.
Room 210 is slated as a dedicated studio/classroom for ACE H.S. from 8a-2p and for Construction Management courses in the afternoon and evening time blocks.

8.A. Five Year Plan

Architecture Design

Construction & Design 2020-21 PUR Self-Study

In the upcoming five years, we expect to see major growth in the Construction and Design Program. Our plan includes maximizing enrollment through the creation of an accredited Bachelor of Architecture, continuation of the ACE High School Program and offered accommodation of online courses. The ACE program will have its first earned certificates in the AY 22-23 and the Bachelor's of Architecture will have its first graduates by AY 26-27. Additionally, we intend to work with the Nevada State Board of Residential Designers and local professionals to improve our construction class and ensure that we are presenting the best, most industry-relevant learning opportunities to our students.

Using the most significant curriculum and assessment-driven findings, and considering any internal or external factors anticipated to impact your program, discuss strategies to sustain or improve student learning. This may also include deactivating existing or introducing new courses or programs to meet student and/or Industry demand.

- Kreg Mebust and Kaysi Archey will be continuing the Architecture Program at ACE High School, but are working to allocating learning space at TMCC's Applied Technology Center to better serve the ACE High School students.
- In addition to allocating more-suitable classroom space, TMCC is coordinating with industry professionals to expose students to real world experiences such as product vendor presentations, job shadowing and by applying code requirement to design in the classroom.
- Kreg Mebust and his subcommittee are actively working towards Bachelor's in Architecture approval and accreditation. Understood this shoot boost enrollment as it will help local students on their pathway to licensure.
- Continuing to update software to the most recent version to meet industry standards.

After considering the most significant enrollment findings, and any internal or external factors anticipated to impact future enrollment, discuss strategies, if needed, to improve enrollment or address these factors. These may include, more efficient scheduling, streamlining pathways to completion, outreach to underserved students, etc.

- TMCC's Architecture Program at ACE High School and the new Architecture & Landscape Architecture Advisory Board subcommittee will be utilized to connect with the younger generation including local middle schools to include CTE in curriculum early on and create a pipeline for the younger generation to TMCC to boost enrollment down the road.
- Upon approval, the Bachelor's in Architecture will serve Northern Nevada and provide students another opportunity within the state to accomplish their licensure education requirement.
- TMCC's Architecture Program will continue offering online courses for more flexibility and efficiency in order to optimize graduates.

With respect to course pass rate, graduation, and transfer, discuss strategies to enhance student success. These may include curriculum changes, streamlining pathways to completion, Improving advising, mentoring, and retention efforts, etc. Address any equity gaps. How does the department or unit plan to improve degree/certificate completion and/or course completion if the department or unit does not offer any degrees/certificates?

- Kaysi Archey will be working directly with ACE High School students that require mentoring to ensure that certificate completion requirements are met.
- The Bachelor's of Architecture is expected to increase completion as it will meet the licensure education requirement.

Considering the above strategies, what are the major goals that the department/unit hopes to accomplish in the next 5 years? How does the department or unit plan align with the Academic Affairs Strategic Plan or the College's Strategic Master Plan? Include an estimated timeline of goal completion.

- Bachelor's of Architecture approval and accreditation. It is hoped that by the AY 25-26, we will have our first Bachelor's in Architecture graduates.
- Continuing the Architecture Program at ACE High School. It is expected that by the AY 22-23, the first group of students will earn the skills certificates.

9.A. Resource Requests

Architecture Design

Construction & Design 2020-21 PUR Self-Study

For each request, please indicate whether the request is for an additional faculty and/or staff position, capital improvements (facilities), technology or specialized instructional resources, or professional development and address the following items:

- **Request (Additional faculty/staff, capital improvements, technology or other specialized instructional resources, or professional development)**
- **Estimated time to hire or time the request will be made**
- **Projected measurable outcomes: What does the program**

hope to introduce, develop, improve, enhance, accomplish, etc. as a result of the request? Which PLOs and/or student success metrics does the department hope to improve as a result of the request?

- **Alignment to the Academic Affairs and College's Strategic Plan**
- **Institutional Funding Priority: Indicate which of the following institutional funding priorities your request addresses:**

1. **Compliance with mandates and requirements.**
2. **Address and/or mitigate issues of liability.**
3. **Address compensation equity.**
4. **Improve efficiency and/or effectiveness.**
5. **Leverage resources, investments with returns.**
6. **Promote professional development.**

Add wish list:
Resource request: Full time instructor - Construction Management (2023)
Resource request: Full time instructor - Architecture ACE
Resource request: Full time instructor - Architecture BArch
Resource request: Dedicated computer lab.
Resource request: Laser cutter.
Resource Allocation Plan: Reference the PUR wish list.

Academic Standards and Assessment Committee Findings and Recommendations

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Academic Standards and Assessment Committee's Findings:

This question has not been answered yet

Program Strengths:

1. The program appears to have made meaningful progress on past recommendations.
2. Data presented show clear industry needs for architecture, landscape architecture, and construction management.
3. All catalog information, including program descriptions and course offerings for the 4 emphases and their stackable certificates are up-to-date

according to the report.

4. Courses are scheduled at a variety of times and in various types of modalities, which appear to meet student needs.
5. A Bachelor of Architecture will soon go before the Academic Affairs Council/Board of Regents and if approved will provide students with a more viable, local opportunity for a professional degree and transfer to UNLV's Master's program.
6. PLOs for the AAS Construction and Design are clearly written, actionable, and measurable.
7. Program faculty have completed a number of indirect PLO assessments, such as evaluating the need for a new studio, developing clear pathways, and eliminating hidden prerequisites.
8. There are clear examples of changes that have been made based upon previous assessments and data based upon those changes are being collected Fall 2021 for Spring 2022 assessment (e.g. Exams and quizzes have added more graphic images due to the visual nature of architectural styles, floor plans and elevations. The "anchoring" writing assignment was changed. Students now assume the role of a "period" travel writer. Research includes cultural items such as travel, religion, food, clothing etc.).
9. Program enrollment and fill rates are steady and trends are positive, suggesting that the program is viable.
10. The architecture-related emphases and Construction and Design emphasis have grown more diverse, including an increased number of Hispanic and female students. There was no indication of equity gaps in access.
11. The Construction and Design area has awarded 95 total degrees and certificates in the past 5 years, mostly in the AA Architecture and AAS Construction Management.

Areas of Concern or Improvement:

1. The Construction and Design mission is a bit vague and could better articulate the architecture and construction aspects of the program.
2. Despite a commendable awareness of the need for accessibility and ADA compliance, there is no indication that accessibility checkers for course materials are being used or that full-time faculty have completed accessibility professional development.
3. PLOs: There was little information about PLOs for the Construction Management emphasis. The Construction Project Management Skills Certificate has only one PLO, which may not capture all the knowledge and skills that students completing this credential would be expected to achieve.
4. There is concern about the statement that "PT instructors can alter significantly the outcomes of a course."
5. PLO Assessment: The PLO assessment results and use of those results for improvement that were presented, though excellent, were all indirect (e.g. programming, applying building codes, simulated work environments,

expanding community based service learning, workflow between analog and digital processes, laptops at studio desks). There is a need for direct PLO assessment that show concrete measures of student learning and achieving PLOs. There was also no discussion of PLO assessment for the Construction Management emphasis.

6. Course completion and degrees awarded do not appear to have been analyzed for equity gaps. A potential equity gap with completion rate amongst ethnic minorities is apparent but there were no mitigation strategies.
7. 5-year Plan: The 5-year plan does not include specific goals or timelines other than maintaining the current trajectory. Plans to improve student learning are clearly presented (including the Bachelor's of Architecture and the ACE program) but do not appear to be derived from PLO assessment data. There seems to be a clear need for a FT Construction and Design instructor that was not requested. The future of this emphasis is unclear.

Recommendations:

The ASA Committee recommends that program faculty:

1. Develop a more specific program mission that captures both the architecture-related and construction management aspects of the program. Perhaps splitting architecture and construction management into two mission statements is necessary.
2. Work with WebCollege/DRC to learn how to run accessibility checkers on course materials and encourage PT instructors to run the checker. Complete additional accessibility professional development opportunities towards ensuring that software, textbooks, and instructional materials posted in Canvas are accessible (e.g. Accessibility Workshop, ACUE, etc.).
3. Work with advisory boards or counterparts at other institutions to review the Construction Management emphasis PLOs and develop more than 1 PLO for the Construction Project Management Skills Certificate.
4. Work with PT instructors to ensure that all course and program outcomes are being addressed. The Assessment and Planning Office can facilitate this if needed.
5. Conduct direct assessment of program learning outcomes, i.e. assessment of student work that is aligned to specific PLOs and document the results. Student work that is assessed towards CLOs will also address PLOs through your curriculum map.
6. Connect planned curricular improvements to PLO data and reassess to determine whether the changes implemented improved students' achievement of PLOs.
7. Explore and report how the increased diversity in the Construction and Design program may have been achieved. This could serve as a model for other programs to improve access for historically underrepresented student groups.
8. Analyze course and program completion for equity gaps and develop

strategies to mitigate any gaps found.

9. Monitor how elimination of the AA Architecture, which has resulted in 31 of the 95 degrees and certificates awarded through AY 18-19, will impact the AAS Construction and Design, Architecture Emphasis. Ensure students previously interested in the AA Architecture know what their options are under the AAS Construction and Design.
10. Revisit and develop a 5-year plan with specific goals and timelines that includes improvements based on PLO assessment data, mitigates any equity gaps in achievement, and addresses the future of the Construction Management emphasis, including the potential need for a FT instructor in this area.

Other comments:

This question has not been answered yet

Dean's Findings and Recommendations

Architecture Design

Construction & Design 2020-21 PUR Self-Study

Academic Dean’s Findings:

Since the last PUR, the Architecture program has benefitted from instructor attention to: align the credentials within the pathway to the regional need, engage employers and professional organizations, and intensive work on student engagement and retention. Conversely, the Construction Management program has seemingly coasted with few changes and little private sector engagement. With the retirement of the full-time instructor, new part-time instructors indicated the program content and tools (software and technology) are out of step with current industry standards.
This PUR was conducted without the benefit of a full-time program instructor.

Strengths:

The Architecture program enrollment was increasing even before the ACE partnership launched in Fall 2020 (further growing the program enrollment). This additional K-12 pipeline should lead to an increase in declared majors by Fall 2023. The opportunity to add a Bachelor of Architecture degree will be a benefit to students who would need to relocate to finish their professional credential. TMCC is integrated with Nevada’s architecture community (private sector) and strong relationships within that community that provide program support. Construction in the region is strong, which should benefit the Construction Management program and students.

Areas for Improvement:

At this time, the Construction and Design Department is without any full-time, permanent instructors.

The Architecture program is currently without a full-time instructor (due to an internal promotion) and with the ACE instructor is a new position currently under soft money. Construction Management is also without a full-time instructor (due to buyout-retirement). These position will need to be filled.

The Construction Management program needs to be mapped and reviewed for program improvements. I recommend in the future the Architecture and Construction Management program be conducted as separate PURs. While there is some course overlap between the two programs, the outcomes and student populations are very different. As it was lightly covered under this PUR, I'd be open to submitting a separate PUR for Construction Management when the full-time position is filled. The relationship with Construction Management employers needs to be strengthened. The Construction Management side has not been represented in the combined Advisory Board in several years and should be re-establishes with an Advisory Board separate from Architecture.

Summary Action Recommended (Continue program(s), significantly revise, discontinue, etc. followed by explanation):

Both programs should be continued based on enrollment and community need. The B-ARCH credential should be pursued as an opportunity for students and to fill the regional need. Construction Management has become somewhat stagnant. Some of the courses need to integrate new technology and methods being used in the industry. An opportunity exists to partner with WNC to feed into their Bachelor of Construction Management degree and potentially to share a teaching position. This should be explored prior to backfilling the vacant instructor position. Minor course changes were identified during the mapping and PUR for AAD 101, 223, and 265 that should be submitted as soon as possible.

Recommendations and Implementation Timeline:

- Full time Architecture Instructor – Search spring 2022 for Fall 2022 start.
- ACE Architecture Instructor – Secure state funding Fall 2022, search Spring 2023 for Fall 2023 start.
- Construction Management Instructor – Secure funding and position renewal approval Fall 2022, search Spring 2023 for Fall 2023 start.
- Conduct Construction Management course and program review with employers and stakeholders in AY 2023-24. Submit CRC changes for Fall 2024 catalog (if needed).
- Fall 2021 – complete course edits to AAD 101, AAD 223, and AAD 265 as identified by the program mapping.

Resources Necessary for Implementation of Recommendations:

We should have an existing position and funding to back fill the vacant Architecture position. The funding for the Construction Management position should be reinstated stating fall 2023. Funding for the ACE and B-ARCH instructor will need to be secured.

Impact of Recommendations on Division Planning:

The Division will need to reduce a position elsewhere to add ACE teaching position. It is likely we will also need to give up a position within the Division to add a B-ARCH instructor. The fiscal impact of adding the B-ARCH degree should be small (outside of the position requirements). However, we may need to find additional space within the building as the program grows or have some small equipment/materials needs. I would plan for release time for a new Construction Management instructor to ensure there is time for program mapping and review in AY 2023-24. This would require us to continue one or two courses with part-time instructor during the semester of the review.

Impact of Recommendations on Program/Unit Faculty:

There are currently no on-going program/unit faculty to be impacted. The current temporary and part-time instructors would have the opportunity to apply for a permanent position. Once a permanent instructor is added to Construction Management, there may be an ongoing reduced need for the current part-time faculty (unless enrollment grows).

Vice President of Academic Affairs' Findings and Recommendations

Architecture Design

Construction & Design 2020-21 PUR Self-Study

VPAA's Findings:

Construction and Design is an important program that generated 20.2 FTE in Fall 2021, up nearly 3 FTE over Fall 2020. This bucked the trend seen in most disciplines, and bodes well for the program's continued growth. The program's format, featuring 4 emphases in the AAS, is right-sized and students are enrolling and completing at a steady pace.

Strengths:

The increase in female students is noteworthy, and the ethnicity figures reflect the college's overall trends. The instructors are well qualified, and we hope to bring aboard FT faculty in the coming year. The curriculum is clearly tracking with students, and the addition of ACE students has opened up further avenues for recruiting to the major. The approval of the B-Architecture opens even more avenues for recruitment and completion, in partnership with our Advisory Board.

Areas for Improvement:

The instructors should complete all accessibility trainings and ensure that all materials are accessible.
The program should expand its PLOs and ensure that all learning outcomes are assessed.

The following recommendations made by the Academic Standards and Assessment Committee and Dean are upheld, and/or additional recommendations include the following: (Please include an implementation timeline, and indicate how these recommendations align to the Academic Affairs Strategic Plan and/or the College's Strategic Master Plan.)

VPAA supports developing twin mission statements, one for the growing Architecture program, and another for Construction & Design. They are interrelated but also have distinct identities.
The instructors should complete all accessibility trainings and ensure that all materials are accessible.
The program should expand its PLOs and ensure that all learning outcomes are assessed.
The program should analyze equity gaps and develop coherent, applied strategies for reducing them.

The following recommendations made by the Academic Standards and Assessment Committee and Dean are not upheld: (Please provide an explanation.)

There are none.

In order to implement recommendations towards program improvement, the following resource requests are upheld, and/or additional recommended resources include the following:

VPAA recognized the need for a FT faculty hire in Architecture, to support the B-Architecture program. This search is now in progress, as of March 2022.
VPAA delivered the B-Architecture program proposal to ARSA on March 3, 2022, where it was approved.
The idea of hiring an ACE Architecture instructor is also a good goal, based upon ACE enrollments.

The following resource requests are not upheld: (Please provide an explanation.)

This question has not been answered yet

Summary Action Recommended (Continue program, significantly revise, or discontinue, followed by explanation):

Definitely continue the program, revise the PLO format and assessment regime, and continue to advance efforts to enroll ACE students and retain them as program majors.