

Six-Year Program Review Architecture and Architectural Drafting

2021-2022

Self-Study Members:

Saad Sadig

Validation Team Members:

**Margaret Lau, Dean, Academic Affairs
Robert Adames, Adjunct Faculty, ARCH/ET
Gabriel Marquez, Assoc. Professor, WLDT
Patrick McGuire, Professor, AT**

SIX-YEAR PROGRAM REVIEW

(Architecture.)

TABLE OF CONTENTS

PROGRAM REVIEW

Status Summary - Plan of Action-Post Validation ... 1

Comprehensive Self Study..... 6

Assessment Plan 21

Course Review Verification.... 22

Plan of Action – Pre-Validation..... 23

VALIDATION

Executive Summary27

Plan of Action – Post Validation29

EXHIBITS

Student Survey35

Student Survey Data Summary & Comments 46

Degrees & Certificates, Enrollment, Efficiency, Headcount & FTES.....49

Articulation Status of Courses...50

Approved Course Outlines55

Occupational Outlook, Drafters (U.S. Bureau of Labor Statistics)...86

Summary Report for Architectural Drafters (O*NET OnLine)87

INTRODUCTION

This is the second six-year program review of the architecture program. The first section of the review is a program self-study. The study describes the architecture program's mission and purpose, summarizes the progress made towards achieving the program's goals during the past six years, and describes the current allocation and use of human, physical, technology, and fiscal resources. In addition, the self-study identifies student learning outcomes and assessment methods. Back in 2016, The self-study and validation teams developed a final plan of action post-validation based on information in the self-study and the recommendations of the validation team. Several positive actions were taken and many of the tasks planned were successfully completed including the very important task of articulation with Cal Poly San Luis Obispo and the securing of instructional equipment that helped drastically enhance the learning environment.

The self-study identifies the strengths and the weaknesses of the program and proposes solutions to address any weaknesses. Furthermore, the study describes how the architecture program works to promote student success by utilizing teaching innovations, use of academic support services, and use of student services. The self-study examines relevant data from (IRP) institutional research and planning to report on student success, and retention. Furthermore, the study documents enrollment data, efficiency, headcount and FTES by: gender, ethnicity, age category, and enrollment status. Moreover, the study documents the number of degrees and certificates earned by students over the six-year period (2016-2022). The document contains a six-year plan of action addressing issues such as improving learning outcomes, accommodating changes in student characteristics, and improving the educational environment.

The second section of the review contains the following six exhibits:

1. A student survey,
2. Student data summary which examines and comments on the survey results,
3. Information from IRP department covering degrees & certificates, enrollment, efficiency, headcount, and FTES.
4. Approved course outlines
5. Occupational outlook for drafters published by the U.S. Bureau of Labor Statistics
6. A summary report for architectural drafters published by O*Net OnLine

PROGRAM REVIEW

Status Summary -Plan of Action-Post Validation

During the academic year, 2015-2016, the Architecture and Architectural Drafting Program, completed program review. The self-study and validation teams developed a final plan of action post-validation based on information in the self-study and the recommendations of the validation team. For each plan, indicate the action taken, the result of that action, and the current status of the plan, if it is incomplete.

(If any plan was made and action not taken, please state the rationale for not pursuing that item.)

Consideration:

RECOMMENDATIONS TO IMPROVE STUDENT LEARNING OUTCOMES AND ACHIEVMENT; Improve Student Performance		
Plan of Action	Action Taken and Result	Status
Support extra-curricular, learn-by-doing activities such as the annual Cal Poly Design Village competition. Such activities provide hands-on design and construction experience and facilitate teamwork and collaboration	Participation in hands-on design and construction is ongoing. Industry professionals have expressed interest in supporting competitions by providing materials and funds	Ongoing
Encourage collaborative learning by emphasizing group projects, problem solving, and critical thinking	Activities continue to be structured to enhance collaborative learning, problem solving, and critical thinking	Ongoing
Collaborate with the library on providing up-to-date resources on architectural design, building construction materials and methods, computer aided drafting and design, and architectural history	Collaboration efforts to provide students with accessible resources are continuing	Ongoing
RECOMMENDATIONS TO ACCOMMODATE CHANGES IN STUDENT CHARACTERISTICS		
Plan of Action	Action Taken and Result	Status
Add more course sections to accommodate the different	Additional sections are under consideration and are	Ongoing

schedules of a growing student body	dependent on demand and instructor availability	
Continue outreach efforts to educate students of all ethnic groups about career opportunities, and the higher-than-average earning potential for those with associate degrees. Create/update program outreach literature/material	The architecture website was enhanced, and effort is ongoing to improve the update the site	Ongoing
RECOMMENDATIONS TO IMPROVE THE EDUCATIONAL ENVIRONMENT		
Plan of Action	Action Taken and Result	Status
Create a new "Introduction to Architecture" course and articulate with Cal Poly's EDES 101 "Introduction to Architecture and Environmental Design	This course is under consideration	In Progress
Create a new "International Residential Code; IRC" course	This course is being developed	In Progress
Create a new "Architectural Model Making" course	This course is under consideration	In Progress
Create a new "Independent Projects in Architecture" Arch 189 course	This course is under consideration	In Progress
Update existing courses of record	Updating is ongoing	In Progress
Add topics and/or a course covering the utilization of software in building energy performance, and analysis	Exploration of energy performance software is ongoing	In Progress
Create new "Architecture History" courses covering history of world architecture of the following eras: prehistory-middle ages, middle ages-18 th century, and 18 th century to present	The courses are in the process of being developed to meet the history of architecture transfer requirements	In Progress
Create a new "Green Building Design with LEED Training" course	Course is in development	In Progress

Develop a sustainable design associate degree/certificate	Certificate is under consideration	In Progress
Work closely with college and high school counselors on providing students with specific advice regarding transfer, articulation, architectural education, and careers	Collaboration is ongoing	In Progress
Articulate the design studio courses Arch 151, Arch 152 with Cal Poly's design studio courses Arch 251, 252, and 253	Articulation completed in 2022	Completed
Articulate Arch 131 (Building Construction Materials and Methods) with Cal Poly's Arch 241 (Architectural Practice 2.1)	Articulation completed in 2022	Completed
Articulate Arch 121 (Architectural Drawing I) with Cal Poly's Arch 242 (Architectural Practice 2.2)	Articulation completed in 2022	Completed
Look for articulation opportunities with other universities offering architecture and building design and construction including New School of Architecture, SCI Arch, Woodbury, Adroit, and Cal Poly Pomona	Articulation effort with other universities is ongoing	In Progress
Create a new "Environmental Control Systems" course to articulate with Cal Poly's Arch 207 (Environmental Control Systems I)	ARCH 107 has been created and is pending approval by AP&P. This course will articulate with Cal Poly's Arch 207: Environmental Control Systems	In Progress.
Create internship/mentorship opportunities to allow the interaction between students and professional architects	Discussions are ongoing with RRM Design Group to create internship opportunities	In Progress
Provide externship and professional development opportunities i.e., conferences, workshops, seminars, in areas such as teacher training, computer aided drafting,	Funding is needed to accomplish this goal	In Progress

building information modeling, energy modeling, sustainable design, and green building products.		
RECOMMENDATIONS THAT REQUIRE ADDITIONAL RESOURCES		
Purchase replacement focusing lens and mirror units for the Universal VLS 6.6 laser cutting machine	Lens was obtained in 2019	Completed
Add an e-printer to facilitate printing from any location. Currently printing is only possible from the CAD lab	There is a need to request funding for this equipment	Not obtained; ITS has identified security issues that prevent implementation at this time.
Add 24 compact student workstations that can accommodate both a computer and a desktop area for note taking and hand drawing.	Six workstations were obtained in 2020. Each station accommodates four students. This resulted in a more efficient lab space	Completed
Add ten (10) CAD stations in the architecture lab	20 Alienware m15 laptops and a mobile cart was obtained. Several laptops were checked out during the emergency remote teaching ERT	Completed
Add a second printer to meet increasing enrolment demands, and to facilitate remote printing. Currently printing is only possible from the CAD lab	There is currently a color printer in the print room which needs replacement	In Progress
Replace existing 32 CAD stations to insure hardware compatibility with the latest software	New stations were added in 2019	Completed
Add a second laser cutting machine to meet the demands of a new model making course as well as the demands of additional classes	A second laser cutter was added in 2019	Completed
Purchase 41 "Autodesk Building Design Suite" ultimate education" subscription; 3-year renewal to prevent the interruption of architecture and CAD classes	Currently Autodesk is offering free student license. Adjustments may be made if the software provider changes the free offering	In Progress

Purchase 37 "SketchUp Pro" networked lab licenses to prevent the interruption of architecture and CAD classes	Completed	Completed
Renew 37 "Sketch Up Pro" networked lab licenses and add eight new licenses for a total of 45. The increase in the number of licenses accounts for the anticipated increase in enrollment	Annual license fees have doubled. SketchUp Pro license budget augmentation has been requested	In Progress
Hire a full-time instructor to oversee the program and to teach multiple classes	An architecture full time instructor was hired in 2016	Completed
Increase the hours of the department secretary to 37 hours/week for 11 months	Completed	Completed

Allan Hancock College Program Review

Comprehensive Self-Study

Program review is intended to be a reflective process that builds on the extensive information gathered for the Annual Updates and lays out the program's major directions for the future. (Place your responses in the expandable text boxes below each question.)

I. Program Mission (*must align with college mission statement*)

Describe the need that is met by the program or the purpose of the program. For CTE programs only, show that "the program does not represent an unnecessary duplication of other vocational or occupational training programs in the area."

The Architecture program is committed to providing students with the knowledge and skills they need to enter the architecture profession as beginning and intermediate drafters. In addition, the program is committed to preparing students to transfer to universities that offer degrees in architecture and building construction related areas. Furthermore, the Architecture program is committed to meeting the needs of industry professionals through the provision of courses in architectural graphics, building codes, construction materials and methods, digital tools in architecture, computer-aided drafting, computer-aided design and building information modeling.

There are no other architecture programs offered at area high schools or in community colleges in Santa Barbara County. However, Santa Barbara City College offers a Certificate of Achievement in CAD Drafting with selected coursework that includes Architectural Drafting and Architectural Rendering. The nearest community college that has an architecture program is Cuesta College, located in San Luis Obispo County, 40 miles north of Santa Maria. 35 miles to the north of Allan Hancock College is California Polytechnic State University in San Luis Obispo, which has an impacted and a highly competitive architecture program. The nearest community college to the south of Allan Hancock College, offering an architectural studies program, is Ventura College, located in Ventura County 96 miles away.

As a result, the architecture program at Allan Hancock College is strategically located and has the unique ability to offer students the opportunity to receive excellent architectural education that can prepare them for employment or for transfer to university architecture programs.

II. Progress Made Toward Past Program/Departmental Goals

Summarize the progress the program/department has made toward achieving its goals during the past six years. Discuss briefly the quality, effectiveness, and strengths of the program as reflected in

its Annual Updates. Show the relationship between the program goals, the mission of the college, the district strategic plan, and the impact on student development and success.

The following accomplishments were made in the past six years:

1. Improved the learning environment in both the architecture and CAD lab by replacing 20 individual drafting tables with six more efficient work stations. Each station can accommodate four students. The new stations resulted in the accommodation of four additional students in addition to the creation of more space in the architecture lab.
2. Added a second more compact laser cutting machine to meet the increasing demand for architectural model making.
3. Obtained several light level meters. The meters will be used in the sustainable building design and technology course ARCH 107. The course is nearing approval by the AP&P committee. In addition, the course is scheduled to be articulated with Cal Poly.
4. Added two computer stations to the CAD lab. The stations are capable of supporting good quality animations.
5. Articulated four additional courses with Cal Poly SLO: ARCH 121, ARCH 122, ARCH 151, and ARCH 152. One more course; ARCH 107 will be articulated once the course is approved by the Academic Policy and Planning Committee. The articulation of the above courses will result in the retention of second year students and prevent the loss of students to Cuesta College.
6. Continued to offer courses in Building Information Technology (BIM). BIM is quickly becoming the industry standard in the design and drafting of medium to large scale projects due to its higher efficiency, increased productivity, and labor cost savings. According to Building Design + Construction magazine at <http://www.bdcnetwork.com/bim-finally-starting-pay-aec-firms> , 300 firms were surveyed about BIM. The response was that BIM is paying off through cost saving, higher quality and client satisfaction.
7. A new 8-unit certificate of achievement is in the process of being developed. This certificate will help students with Autodesk Revit Certification exams.
8. Further articulation opportunities with Cal Poly are explored including the introduction of three architecture history courses to articulate with Cal Poly's architecture history sequence ARCH 217, 218, and 219.
9. Effort continues to be made to meet the transfer requirements of four and five-year architecture programs including Cal Poly SLO, New School of Architecture, USC, Southern California Institute of Architecture (SCI Arch), and other universities.
10. Continued to look for articulation opportunities with other programs at Cal Poly including architectural engineering, city and regional planning, construction management, and landscape architecture.
11. Continued to look for articulation opportunities with other universities offering architecture, building design, and construction including New School of Architecture, SCI Arch, Woodbury, Adroit School of Architecture, and Cal Poly Pomona.
12. Established program learning outcomes that are mapped to Allan Hancock College's institutional learning outcomes. The collaboration between part-time instructors resulted in the creation and assessments of student learning outcomes for each of its nine courses: Arch

111, Arch 112, Arch 121, Arch 122, Arch 131, Arch 151, Arch 152, and Arch 160. While a few of the outcomes have been assessed, the six-year goal of the architecture program is to develop a matrix to ensure that all SLO's are assessed for every course.

The assessment results will continue to be used as a tool to help instructors discover areas of strengths and weaknesses in each course. In addition, assessment results will be used to help instructors take the necessary steps to improve both the course content and the methods of instruction.

13. The architecture program faculty will continue to examine the current student learning outcomes and their corresponding assessments in order to make necessary changes to the outcomes or to the assessment methods.

III. Analysis of Resource Use and Program Implementation

Describe the program's current allocation and use of human, physical, technology, and fiscal resources. Are resources sufficient and appropriate to meet program needs? Can program resources be reallocated to better meet student needs?

Human resources:

The architecture program currently has two part time instructors and one full time instructor. The full-time instructor acts as the program coordinator. The coordinator is assigned 0.1 FTE to manage the architecture as well as the engineering technology programs. In addition, the ET program has two part time instructors. The total hours allocated per semester are 48 or 3 hours per week. The current compensated time per day for the management of both the architecture and engineering technology programs is 36 minutes. This translates to a time allocation of 18 minutes per day per program. This is an extremely low and an unrealistic management time. There is an urgent need to increase the program coordination time to a realistic number.

The duties of program coordination and management include:

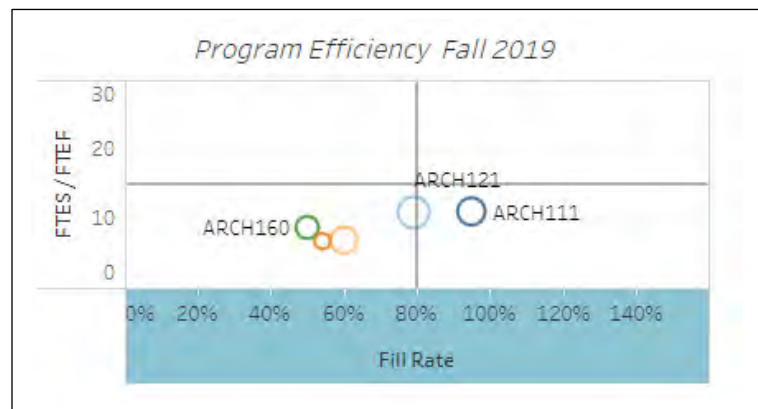
- Reviewing, updating, and developing curriculum.
- Coordinating the architecture/ET programs with other programs in the industrial technology department
- Promoting the architecture/ET programs.
- Mentoring new part time instructors
- Completing program annual updates.
- Reviewing and modifying course schedules every semester.
- Insuring the distribution, collection and submission of textbook requisitions.
- Recruiting qualified instructors.
- Articulating courses in the architecture/ET programs with courses at high school and university levels.

- Participating in the annual AHC Career Exploration Day.
- Participating in high school career day events.
- Participating in the annual AHC Counselor Workshop/Career Exploration Day.
- Holding program advisory committee meetings.
- Providing an up-to-date list of the advisory committee members, complete with contact information to the CTEA office.
- Participating in the development of the CTE website and marketing materials by providing the necessary information to public affairs.
- Contacting and hosting speakers from various colleges and from the profession and arranging for them to speak to students.
- Advising the American Institute of Architecture Students (AIAS) club on a volunteer basis.
- Advising architecture students with regards to transfer options and career opportunities.
- Reviewing and processing student course substitution requests.
- Researching and documenting department needs of instructional supplies, operational supplies, and equipment.
- Responding to department needs with the preparation, completion and submission of purchase requests.
- Engaging in resource development and partnership efforts.
- Assisting with facility and equipment maintenance needs.
- Managing the architecture and the engineering technology budgets.
- Participating in the maintenance of the computer aided drafting lab which contains:
 1. 34 computer stations plus an instructor podium, the hardware is updated periodically.
 2. 20 laptops with architectural and engineering drafting software.
 3. Computer aided drafting and design (CADD) software (14 programs) that need to be updated annually and maintained on a regular basis.
 4. Equipment that require ongoing maintenance: a large format color printer, one laser color printer, one monochrome laser printer, a copier, a scanner and a laser cutting machine.
- Participating in the maintenance of the architecture drafting lab which contains 24 student workstations, an instructor podium, and an overhead projector.

Fill rates and efficiency:

An examination of the Fall 2019 fill and efficiency rates shows a need to improve both. An 80%, or less; fill rate is considered a low fill rate and an FTES/FTEF of 15 or less is considered a low efficiency rate. Despite the importance of each course offered within the architecture program, there is a need for sustained marketing utilizing various strategies

including social media, on-campus career day events, organization of tours to the architecture/CAD labs, and visits to high schools.



Both fill rates and efficiency rates have the potential to increase by making students aware of educational and career opportunities in architecture. With the recent articulation with Cal Poly, both fill and efficiency rates are expected to increase. Furthermore, with stronger collaboration between the architecture program and counseling programs, at the high school and college levels, students can better plan their architectural education and increase their chances of getting accepted into four- year or five-year architecture schools. Students need assistance with decision making regarding the right courses to take. In addition, students need a clear educational plan that can assist them with obtaining their associate in science degrees, or successfully transferring to a university within a reasonably short period.

New facilities:

The architecture/ET programs were relocated in the spring of 2014 to a new facility. Instruction occurs in two labs: the architecture lab and CAD lab. Currently in the architecture lab, four courses are held including drafting, design, and graphics. One architecture CAD design course is held in the computer lab which contains 32 stations. The architecture lab holds 24 students. There are (4) 5'x6'tables with each table capable of accommodating four workstations. In addition, there is a mobile cart with 20 laptops.

Software and hardware:

The CAD lab is equipped with 34 stations. Programs used in the instruction of architecture drafting and design include Autodesk Revit, AutoCAD, Sketch Up, Adobe Photoshop, Adobe InDesign, Adobe Illustrator, and Layout. There is a need for continued software funding to prevent the loss of software access and to obtain the necessary updates. The addition of the animation program Lumion is needed to accommodate the animation component of architectural presentations. There is a proposal to add a joint certificate with the media arts department focusing on architectural animation.

IV. Program SLOs/Assessment

What are your program student learning outcomes? Have each of these been assessed since the last comprehensive program review? How are they measured? What did the assessment data indicate about the strengths and weaknesses of your program? What changes do you plan based on these data?

The architectural program learning outcomes were revised. The new outcomes are more general and comprehensive. The outcomes are:

- PLO1: Communicate graphically using both manual and computer aided methods.
- PLO 2: Produce a set of architectural plans that may be submitted for plan check approval.
- PLO 3: Develop knowledge of and ability to apply building codes.

PLO 4: Produce a comprehensive architectural project that demonstrates capacity to make design decisions across scales

A new system, SPOL, is currently utilized to enter assessment data. The architecture program completed a four-point scale rubric which will help instructors assess the outcomes above. Assessment data were entered into SPOL in the spring of 2020, and the fall of 2021. The four-point rubric is currently being used to assess student performance. The findings below show the assessment of PLO 1. Both ARCH 160 and ARCH 122 pass rate results were below the expected target of 70%. One possible factor is the introduction of remote teaching. Several students had to meet the challenges of using this technology. However, students seem to be more comfortable with ERT. However, in ARCH 112 and ARCH 152 the success rate exceeded the expected target so a good number of students were able to manage remote instruction.

Findings +			
Digital Tools in Architecture 2021 Spring - ARCH160 : 40901 - 0800-0850 - SADIG, SAAD S			
Measure Type:	Target:	Actual:	Difference:
Institutional Rubric	70.00%	36.36%	-33.64%
Arch. Graphics & Design II 2021 Spring - ARCH112 : 40686 - 1300-1350 - Sturas, Jonas			
Measure Type:	Target:	Actual:	Difference:
Institutional Rubric	70.00%	91.67%	+21.67%
Architectural Drawing 2 2021 Spring - ARCH122 : 40836 - 1300-1350 - SADIG, SAAD S			
Measure Type:	Target:	Actual:	Difference:
Institutional Rubric	70.00%	53.85%	-16.15%
Architectural Design Studio II 2021 Spring - ARCH152 : 40837 - 0800-0920 - SADIG, SAAD S			
Measure Type:	Target:	Actual:	Difference:
Institutional Rubric	70.00%	100.00%	+30.00%

Strengths and weaknesses of the program

Program strengths

1. the introduction of various technologies to enhance students learning. Technologies include laser cutting, laser distance measuring, up-to-date drafting and design software, and new computers to keep up with the hardware demands of new software.
2. the continuous partnership efforts with design professionals.

3. The articulation of seven, soon to be eight courses with Cal Poly which will make the architecture program a viable option for students considering transfer to Cal Poly.
4. The introduction of a new course in sustainable design.
5. The planned addition of architecture history courses which is expected to boost enrollment.

Program weakness:

1. The lack of a course introducing students to the field of architecture. Students need to know about careers in architecture, skills needed to succeed, new technologies for both design and construction, internship opportunities, and architecture schools.
2. The lack of internship opportunities with professional architects. Students can benefit from the chance to be in an architectural office environment and to experience what beginning drafters do. A mentorship opportunity can also be created to allow students to benefit from the guidance of a professional. The architecture department is currently working with RRM Design Group and with local architects on creating internship opportunities.

Changes to be made:

- Continue utilizing computer aided drafting software, more specifically building information modeling software REVIT, to increase productivity and improve drafting quality.
- Utilize computer aided design and presentation software, including Google SketchUp, Photoshop, Illustrator, and Layout to increase productivity and improve design and presentation quality.
- Continue to evaluate existing outcomes and assessments and to modify or update outcomes or assessments as needed.
- Enhance student learning and experience by creating internship/mentorship opportunities to allow the interaction between students and professional architects.

VI. Success, Retention, and Equity

Describe how the program works to promote student success. Include teaching innovations, use of academic and student support services (library, counseling, LAP, community partnerships, etc.). Refer to list of Student Services.

Teaching innovations:

1. In the fall of 2021, students enrolled in ARCH 151: Architectural Design Studio I collaborated with Cal Poly design studio students on a joint project. Both Hancock and Cal Poly students participated

in several joint sessions to discuss design problems and solutions. This experience was valuable and efforts are on the way to continue this collaboration.

2. Up-to-date drafting, design, presentation, and information sharing methods continue to be utilized including the use of widely utilized Building Information Modeling (BIM) design and drafting techniques. According to Building Design + Construction magazine at <http://www.bdcnetwork.com/bim-finally-starting-pay-aec-firms> BIM, which has several types, including architectural, structural, and mechanical, is now the method of choice for professional designers, drafters, construction managers, and structural engineers who are looking for efficient project modeling and sharing programs.
3. Laser cutting technology continues to be utilized in architectural model making. Manual methods of model-making typically result in incomplete models or in models that lack quality and precision. Laser-cut models are currently being used as an investigative and a decision-making tool in daylighting studies and initial spatial design. One of the goals of the architecture program for the next six years is to develop a course in model-making technology.
4. A new course in environmental control systems is nearing approval by AP&P. This course will cover several important sustainable design methods and technology.

Connection between the architecture program and student support services:

1. There is a need to strengthen the connection between the architecture program and student support services.
2. Currently, the library contains outdated materials on building construction methods as well as on computer-aided drafting technology.
3. Because of the rapid change in drafting and design technology, information tends to become obsolete in a short period of time. In addition, new building systems and products have been developed to speed up the construction process and save time as well as reduce cost.
4. The architecture program needs to work closely with the library by sharing up-to-date information about construction technology and professional practice.
5. More information sharing and collaboration is needed between the architecture program and the counseling department, including proper course sequence, transfer options, minimum knowledge and skills needed for entry-level jobs in architectural drafting and career pathways.

Partnership with community:

1. In the fall of 2013, the architecture program initiated community-based projects in two newly developed design studio courses. The objective of the community projects was to involve and to attract the interest of local community members.
2. In the fall of 2013, the first community project was designed by students: the redesign of the existing homeless shelter in Santa Maria. Students visited the existing shelter and interviewed shelter residents, the manager, and the director. Based on the information gathered on existing problems and possible solutions, students came up with design proposals to redesign and expand the existing shelter. Students then presented their designs to shelter managers, faculty, administrators, advisory committee members, and to members of the community, including a member of the Santa Maria City Council.

3. In the spring of 2021 proposed design solutions to a second community-based problem were presented. The director of the City of Santa Maria Community Development Department Chuen Ng was invited to view student projects for the redesign of downtown Santa Maria.
4. More community-based projects we completed including a mixed-use development of a large parcel in Santa Maria as well as the design of an accessible Santa Maria home which is safe to the elderly.
5. These projects have also helped broaden outreach to potential students and gained public support for the program.

Partnership with industry professionals:

1. The architecture program has a strong advisory committee consisting of several design and planning professionals.
2. Architect David Goldstein, who recently retired from his architecture practice in in Solvang after 36 years, continues to be a valuable resource for both faculty and students. On two occasions, Mr. Goldstein involved architecture faculty in judging the Santa Barbara County annual high school architectural design competition. In addition, architect Goldstein continues to provide the architecture program faculty with valuable advice on effective methods of generating design problems and exploring solutions.
3. Another valuable advisory committee member is RRM Design Group intern architect Yoshira Jimenez who is a Hancock alumna and a Cal Poly architecture graduate. RRM Design Group is a multidisciplinary firm with over 140 employees in 5 offices across California; see <https://www.rrmdesign.com/>. Yoshira is working with RRM and with the architecture program on providing summer internships for students. In addition, RRM design group has expressed interest in providing scholarship opportunities.
4. In addition to teaching courses in architecture at Allan Hancock College, advisory committee member and professional structural engineer Robert Adames continues to provide valuable advice on planning, design, and basic architectural engineering principles. Adames has been a regular guest in several design studio classes during several final project reviews and is an adjunct faculty member supporting both ARCH and Engineering Technology (ET) programs.
5. The architecture program has partnered with local industry professionals during several annual Cal Poly Design Village competitions. The American Institute of Architecture Students AIAS club has participated in Design Village for the past eight years and up to the 2020 spring when the pandemic forced the temporary halting of the event. This event brings together schools from all over the state. The competition requires the creative design and construction of a temporary shelter that can be assembled on site and then removed without inflicting damage on the land. Local industry professionals such as Lahr Industrial Group and Hayward Lumber donated materials to the competition. In addition, over the past several years, the AIAS club raised funds and received donations in the form of cash, materials, and even food from local companies. The funds were used to promote the club, to participate in competitions, and to organize field trips.

Then, utilizing data from the office of Institutional Research and Planning, report on student success through course completion and retention data. Analyze, by discipline,

success by gender, age, ethnicity, and online (may analyze other variables such as disability, English as a second language, day vs. night courses, etc. as appropriate).



Retention rates for the various courses within the architecture program vary from a low of 89% to a high of 96%. In general, retention rates have been consistently high for all courses in the architecture program. The graph below shows course retention and success rates for a period of six semesters. The success rate lowest percentage is 76% and highest is 87%. See <https://www.hancockcollege.edu/ie/programdata.php> for data source.

Bridging the gender gap:

	2014-15		2015-16		2016-17		2017-18		2018-19		2019-20	
	Headcount	FTES	Headcount	FTES	Headcount	FTES	Headcount	FTES	Headcount	FTES	Headcount	FTES
Female	17	6.26	24	10.16	19	7.87	14	6.99	23	10.98	17	6.71
Male	68	29.51	64	25.39	56	23.57	40	23.38	53	24.29	51	23.81
Unknown											2	0.76

The data above compares the number of male and female students from 2014-15 to 2019-20. The architecture program continues to work towards a more balanced ratio of females to males. There is a need to market the architecture program to more female students. The field of architecture and construction continues to be male dominated. However, a primary goal of the architecture program is to empower women to pursue careers in design and construction. For data source, see <https://www.hancockcollege.edu/ie/programdata.php>

Suggest possible reasons for these trends and planned actions to address any disproportionate impact.

Most students consist of the under-25 category. This percentage is not unusual given that a dominant number of students attend community college immediately after graduating from high school or within a few years after graduation. A percentage of those who attend college are often not certain about their career choices. As a result, many students explore various courses and subjects to determine if the course or the subject chosen will spark their long-term interests. A few students may invest several semesters exploring options before finally settling on a major. There is an opportunity to help undecided students make better educational and career choices by starting them with an "Introduction to Architecture" course.

Such a course can answer questions related to career options within the field of architecture, the office environment, and expectations from employers. The course can also address the responsibilities of beginning vs. intermediate drafters, licensing requirements, and expected earnings of various jobs within the architecture profession. Architects as well as building construction professionals can be invited to speak to students and to answer questions related to professional practice. In addition, field trips can be organized to various architecture offices.

Additional strategies to increase success and retention rates include creating and updating program outreach literature, dedicating CTE counselors to answer questions related to architectural education and career opportunities.

Gender gap:

The gender gap continues to be a challenging problem. In the profession, female architects are outnumbered indicating the need to encourage female students to pursue degrees and careers in architecture. One of the most well-known female architects today is Zaha Hadid who has projects in several countries in Europe, and Asia. Another well-known female architect is Julia Morgan, who designed the famous Hearst Castle in San Simeon, California. The architecture curriculum needs to introduce students to the many excellent projects designed by past and present female architects.

Ethnicity:

The table below compares the architecture program headcount data of various ethnic groups. The data shows that the largest percentage of students are Hispanic. This is consistent with the college data on ethnicity. In addition to continuing to encourage Hispanic students to pursue education and training in architecture, building design, and construction related fields, there is a need to educate students from other ethnic groups about career opportunities and the higher-than-average earning potential for those who have associate degrees. For data source see:

<https://www.hancockcollege.edu/ie/programdata.php>

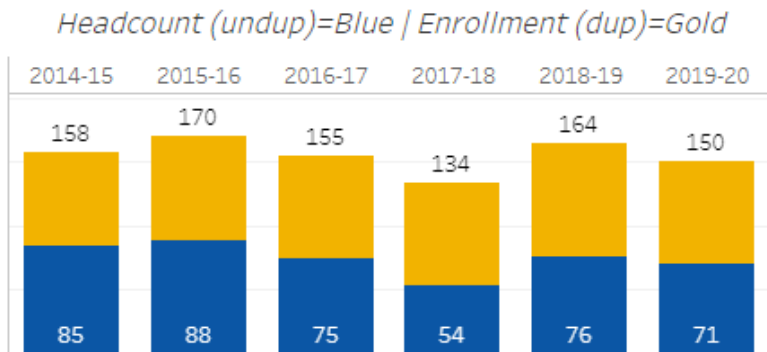
ETHNICITY	2014-15		2015-16		2016-17		2017-18		2018-19		2019-20	
	Headcount	FTEs	Headcount	FTEs	Headcount	FTEs	Headcount	FTEs	Headcount	FTEs	Headcount	FTEs
Asian	1	0.17	2	0.48			1	0.21			1	0.28
Black	2	0.56	1	0.49	4	0.70			1	0.72	2	0.84
Filipino	3	1.74	4	0.97	3	1.09	2	1.02	2	1.62	2	0.59
Hispanic	55	23.40	55	23.56	52	22.84	35	21.95	50	20.98	46	20.81
NativeAm	1	0.32	1	0.32			1	0.28	2	0.66	2	1.19
Paclsl	1	0.28			1	0.28	1	0.21	2	1.68	1	0.38
White	22	9.30	25	9.73	15	6.53	14	6.70	19	9.62	16	7.19

V. Trend Analyses/Outlook

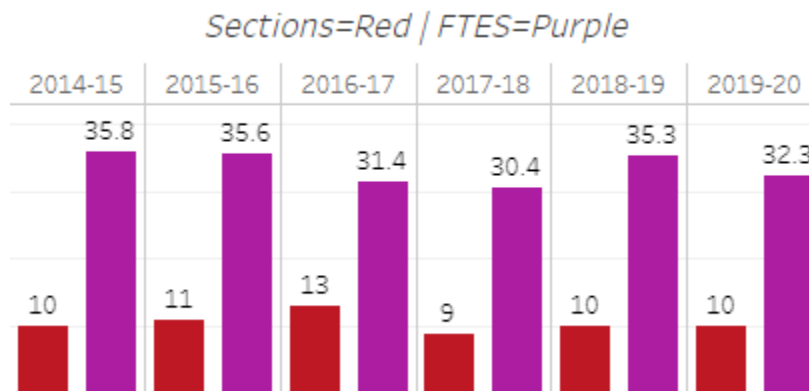
Using the information already gathered in the Annual Updates (e.g., enrollment and achievement data; student learning outcomes assessment and analysis; input by advisory boards; existing articulation agreements; labor market trends) summarize the major trends, challenges, and opportunities that have emerged in the program since the last program review

Enrollment and headcount:

Enrollment lowest count was 134 in 2017-18 and highest in 2015-16 at 170. In general, the count remains stable with the goal of bringing enrollment back up. The recent articulation of four additional courses with Cal Poly SLO is expected to attract more students to the program. The head count fluctuated from a low of 54 in 2017-18 to a high of 88 in 2015-16. The goal is to increase the head count back to 88 and even beyond this level.



FTES numbers remain stable ranging from a low of 30.4 in 2017-18 to a high of 35.8 in 2014-15. FTES values are expected to increase with the increasing number of enrolled students. The recent articulation of four additional courses with Cal Poly SLO will help stop the loss of students to Cuesta College. The number of sections remained above nine and went up to 13 in 2016-17.



As applicable, please address the breadth, depth, currency, and cohesiveness of the curriculum in relation to evolving employer needs and/or transfer requirements, as well as other important pedagogical or technology-related developments.

Curriculum role in meeting employer needs:

1. The architecture program began offering courses in building information modeling or BIM. BIM is quickly becoming the industry standard in the design and drafting of medium to large scale projects. Because of BIM's high efficiency, many architects and building professionals are replacing the time consuming and resource wasting two-dimensional drafting software AutoCAD with three-dimensional parametric design and drafting programs such as Revit Architecture, Revit Structural, and Revit MEP (mechanical, electrical, plumbing). According to Building Design + Construction magazine at <http://www.bdcnetwork.com/bim-finally-starting-pay-aec-firms>, 300 firms were surveyed about BIM. The response was that BIM is paying off through cost saving, higher quality, and client satisfaction.
2. There is an opportunity to meet the needs of an industry sector dealing with energy analysis and sustainable design. The architecture program is looking to introduce programs that help designers make better energy saving decisions. Below is a segment of an article addressing the latest technology in energy performance modeling. Designers can now model energy performance on the fly: "With new software tools, analysis performed during conceptual design is no longer a fantasy. Autodesk and Sefaira have developed applications that allow designers to perform energy analysis of early concepts on the fly" - See more at: <http://www.bdcnetwork.com/5-tech-trends-transforming-bimvdc#sthash.4gTcvlVF.dpuf> According to Building Design + Construction article titled "5 tech trends transforming BIM/VDC": "Another tool that is revolutionizing conceptual design with real-time building performance data is Autodesk FormIt, a free Web- and mobile-based design application introduced last year. FormIt's latest version comes with energy simulation features that enable users to gather instant energy-performance feedback on early design decisions, such as building orientation, thermal performance, and massing." - See more at: <http://www.bdcnetwork.com/5-tech-trends-transforming-bimvdc#sthash.4gTcvlVF.dpuf> The architecture curriculum needs to consider adding topics and courses dealing with the utilization of software in building energy performance. There is a high demand for qualified energy modeling professionals. As a result, conducting workshops, adding a certificate or adding an AS degree in sustainable design to the curriculum can add value to the existing program. In addition, the program will attract professionals who are interested in meeting the energy performance requirements mandated by building codes.
3. The International Building Code: The architecture program offers a course in the International Building Code or IBC. The IBC is an essential course for architects, building owners, contractors, and structural engineers. The extensive amount of information related to the various building codes call for the creation of at least one additional code course dealing with the International Residential Code (IRC). Currently a single course in the IBC is offered once a year. Covering the many topics within the IRC in depth in a single semester has not been possible. The architecture program has a plan to break up the IBC into at least two courses, with each course

addressing fewer topics in more depth. In addition, there is a second ongoing discussion with the code instructor regarding the development of a new course covering the IRC.

4. Employers continue to look for entry level drafters and designers who are familiar with the building code. Familiarity with the IBC and or the IRC results in less training time and cost. Furthermore, knowledge and skills in drafting, design, and building code regulations increases productivity. Due to the many benefits gained by employers, drafters with code knowledge are highly desirable and better compensated. One of the many goals of the architecture program is the training and education of students in building code topics as well as the application of the acquired knowledge and skills in the design and evaluation of building plans.
5. Transfer requirements: To meet the transfer requirements of four-year and five-year architecture programs such as Cal Poly, New School of Architecture, USC, Southern California Institute of Architecture (SCI Arch), Adroit School of Architecture, and other universities, the architecture program added two new second year design courses: Arch 151 (Design Studio I) and Arch 152 (Design Studio II). In 2021 the architecture program at Hancock succeeded in articulating four architecture courses with the fifth course scheduled for articulation following approval by AP&P.
6. Technology Related Development: The architecture program began offering courses in building information modeling or BIM. BIM is quickly becoming the industry standard in the design and drafting of medium to large scale projects. Because of BIM's high efficiency, many architects and building professionals are replacing the time consuming and resource wasting two-dimensional drafting software AutoCAD with three-dimensional parametric design and drafting programs such as Revit Architecture, Revit Structural, and Revit MEP (mechanical, electrical, plumbing). Several building professionals noted that switching to BIM from AutoCAD resulted in higher efficiency, increased productivity, and labor cost savings.

VI. Long-Term Program Goals and Action Plans (Aligned with the College Educational Master Plan)

Describe the long-term plans for changing or developing new courses and programs, other actions being taken to enhance student success, and the need for professional development activities and other resources to implement program goals. Be sure to show how these plans are related to assessment results. (Plan should cover five-year period and include target dates and resources needed.)

Articulation

In January of 2022 four additional courses; ARCH 121, ARCH 122, ARCH 151, and ARCH 152 were articulated. One more course; ARCH 107 will be articulated once it is approved by AP&P. The architecture department is exploring the development and articulation of three additional courses in architecture history.

New courses

Additional new courses under consideration include architecture history, introduction to architecture, independent projects in architecture, model making, advanced Revit architecture, and the international residential code IRC.

AS degree/certificate in sustainable design

The strict energy requirements imposed by building codes in addition to the great benefits of designing and building LEED certified buildings calls for the development of sustainable design associate degree and or certificate. Professionals who wish to increase their knowledge and develop their skills in green building design can obtain a degree in sustainable design. The degree can include courses in environmental control systems, fundamentals of Leadership in Energy and Environmental Design (LEED) credits, energy modeling software. The courses can help professionals better prepare for the LEED Green Associate exam.

Revit Certified User/Professional Certification Track

A new 8-unit certificate of achievement Revit Certified User/Professional Certification Track is in development. Students will be able to:

- Prove their skill level with an official, industry-standard credential recognized by schools and employers
- Display the Autodesk Certified logo and certificate
- Include their names in the database of Autodesk Certified professionals

Professional development

To support the new sustainable design degree and/or certificate there is a need to provide professional development to the architecture program instructors. Instructors need the opportunity to attend conferences, workshops, training sessions, and seminars. These activities can greatly increase their knowledge and awareness of up-to-date sustainable design technology. Consequently, instructors can share this information with colleagues as well as students. Similar professional development can take place in other design and drafting technologies such as Building Information Modeling.

ASSESSMENT PLAN

Architecture Program Learning Outcomes

The architectural program learning outcomes were revised. The new outcomes are more general and comprehensive. The outcomes are:

PLO1: Communicate graphically using both manual and computer aided methods.

PLO 2: Produce a set of architectural plans that may be submitted for plan check approval.

PLO 3: Develop knowledge of and ability to apply building codes.

PLO 4: Produce a comprehensive architectural project that demonstrates capacity to make design decisions across scales.

Assessment Cycle

The new assessment strategy calls for the assessment of all outcomes within a period of six years. There is a new system; SPOL, which is being used to store assessment data. SPOL was used last year to assess outcomes in architecture courses.

Review of Prerequisites, Corequisites, and Advisories

Course Prefix No	CURRENT Prerequisite/Coreq/ Advisory/ Limitation on Enrollment	LEVEL OF SCRUTINY (Statistics, Content Review, UC/CSU Comparison, Student Survey-list all)	RESULT (i.e., current PCA is established, should be dropped/modified or new PCA is established)	ACTION TO BE TAKEN (None, APP-Major or Minor)
Arch 111	None	UC/CSU Comparison	N/A	None
Arch 112	Prerequisite: Arch 111	UC/CSU Comparison	N/A	None
Arch 121	None	UC/CSU Comparison	N/A	None
Arch 122	None	None	N/A	None
Arch 131	Advisory: Arch 121	UC/CSU Comparison	N/A	None
Arch 151	Prerequisite: Arch 111 Advisory: Arch 112	UC/CSU Comparison	N/A	None
Arch 152	Prerequisite: Arch 151	UC/CSU Comparison	N/A	None Advisory: concurrent enrollment in Arch 107 (Environmental Control Systems) to be added.
Arch 160	None	Content Review	N/A	None
Arch 320	None	Content Review	N/A	None
Arch 321	None	Content Review	N/A	None

COURSE REVIEW VERIFICATION

Discipline: Architecture

Year: 2022-2023

As part of the program evaluation process, the self-study team has reviewed the course outlines supporting the discipline/program curriculum. The review process has resulted in the following recommendations:

1. The following course outlines are satisfactory as written and do not require modification (list all such courses):
ARCH 100, ARCH 107, ARCH 111, ARCH 112, ARCH 121, ARCH 122, ARCH 151, Arch 152, ARCH 160, ARCH 321
2. The following courses require minor modification to ensure currency. The self-study team anticipates submitting such modifications to the AP&P, FALL 20__ SPRING 20__: **None at this time**
3. The following courses require major modification. The self-study team anticipates submitting such modifications to the AP&P committee, FALL__ SPRING 20__: **None at this time**

GRADUATION REQUIREMENTS: General Education (GE), Multicultural/Gender Studies (MCGS) and Health & Safety (H&W) Courses.

The following courses were reviewed as meeting an **AHC GE** requirement. The AP&P GE Criteria and Category Definitions (GE Learning Outcomes) forms were submitted to the AP&P for review on: _____

The following courses were reviewed as meeting the **MCGS** requirement. The AP&P MCGS Criteria and Category Definitions (MCGS Learning Outcomes – To Be Developed) forms were submitted to the AP&P for review on:

The following courses were reviewed as meeting the **H&W** requirement. The AP&P H&W Studies Criteria (To Be Developed) and Category Definitions (H&W Learning Outcomes – To Be Developed) forms were submitted to the AP&P chair for review on: _____

Course Review Team Members:

Saad Sadig	<i>saad sadig</i>	6/13/2022
	Signature	Date
	Signature	Date
Larry Manalo Jr.	Larry Manalo Jr. (electronic Signature)	06-14-2022
Signature AP&P Chair		Date
<i>Margaret Lee</i>		Jun 14, 2022
Signature Academic Dean		Date

PLAN OF ACTION - PRE-VALIDATION

Six Year

DEPARTMENT: Industrial Technology PROGRAM: Architecture

List below as specifically as possible the actions which the department plans to take as a result of this program review. Be sure to address any problem areas which you have discovered in your analysis of the program. Number each element of your plans separately and for each, please include a target date. Additionally, indicate by the number each institutional goal and objective which is addressed by each action plan. (See Institutional Goals and Objectives)

RECOMMENDATIONS TO IMPROVE STUDENT LEARNING OUTCOMES AND ACHIEVMENT; Improve Student Performance				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Improve Student Performance.	Support extra-curricular, learn-by-doing activities such as the annual Cal Poly Design Village competition. Such activities provide hands-on design and construction experience and facilitate teamwork and collaboration.	Goal A.1 Enhance the student enrollment experience and create a community bridge by implementing strategic outreach activities and continually improving student onboarding processes.	None	Spring 2023
	Encourage collaborative learning by emphasizing group projects, problem solving, and critical thinking.	Goal A.1	None	Spring 2023
	Collaborate with the library on providing up-to-date resources on architectural design, building construction materials and methods, computer aided drafting and design, and architectural history.	Goal C.8 Expand student support services such as library peer tutors, and counselors in high impact courses.	Books and references	Fall 2022

RECOMMENDATIONS TO ACCOMMODATE CHANGES IN STUDENT CHARACTERISTICS				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Enrollment Changes	Add more course sections to accommodate the different schedules of a growing student body.	Goal D.5 As part of the strategic enrollment management plan, implement class scheduling practices to ensure that courses are offered with adequate frequency for timely completion, and meet the diverse needs of part-time, full-time and weekend students.	Full time faculty	Fall 2023
Demographic Changes	Continue outreach efforts to educate students of all ethnic groups about career opportunities, and the higher-than-average earning potential for	Goal E.7 Develop robust strategies to facilitate student to industry connections	Augment print budget	Fall 2022

	those with associate degrees. Create/update program outreach literature/material.			
--	--	--	--	--

RECOMMENDATIONS TO IMPROVE THE EDUCATIONAL ENVIRONMENT				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Curricular Changes	Create a new Revit Certified User/Professional Certification Track	Goal D.6 Implement college wide comprehensive curriculum evaluation, design, and redesign to ensure viable degree and certificate programs that are responsive to labor market needs and workforce demand. Goal E.1 Evaluate, improve, and expand career education programs ensuring alignment with changing labor market needs.	Stipend	Fall 2022
	Develop a sustainable design associate degree/certificate.	Goal D.6 Goal E.1	Stipend	Spring 2023
	Create a new "Introduction to Architecture" course and articulate with Cal Poly's EDES 101 "Introduction to Architecture and Environmental Design"	Goal D.6 Goal E.1	Stipend	Spring 2023
	Create a new "California Residential Code; CRC" course.	Goal D.6 Goal E.1	Stipend	Spring 2024
	Create a new "Architectural Model Making" course.	Goal D.6 Goal E.1	Stipend	Fall 2025
	Create a new "Independent Projects in Architecture" Arch 189 course.	Goal D.6 Goal E.1	Stipend	Fall 2024
	Add topics and/or a course covering the utilization of software in building energy performance, and analysis.	Goal D.6 Goal E.1	Stipend	Spring 2025
	Create new "Architecture History" courses covering: history of world architecture of the following eras: prehistory- middle ages, middle ages- 18 th century, and 18 th century to present.	Goal D.6 Goal E.1	Stipend	Spring 2023
	Create a new "Green Building Design with LEED Training" course.	Goal D.6 Goal E.1	Stipend	Spring 2025
Co-Curricular Changes	N/A	N/A	N/A	N/A
Neighboring College and	Work closely with college and high school counselors on providing students with specific advice regarding	Goal A.3 Develop and maintain collaboration with K-12 partners to build	None	Fall 2022

University Plans. (Transfer and Articulation)	transfer, articulation, architectural education, and careers.	successful early academic and career pathways.		
	Look for articulation opportunities with other universities offering architecture and building design and construction.	Goal E.4 Maximize usage of the transfer center and other transfer supports and services.	Stipend	Spring 2023
Related Community Plans	Create internship/mentorship opportunities to allow the interaction between students and professional architects.	Goal E.7 Develop robust strategies to facilitate student to industry connections.	None	Fall 2022
	Provide externship and professional development opportunities i.e., conferences, workshops, seminars, in areas such as teacher training, computer aided drafting, building information modeling, energy modeling, sustainable design, and green building products.	Goal C.5 Emphasize culturally responsive instruction that supports equity and student success by expanding opportunities for faculty to implement high impact practices.	Stipend	Fall 2022

RECOMMENDATIONS THAT REQUIRE ADDITIONAL RESOURCES				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Facilities	N/A	N/A	N/A	N/A
Equipment	Buy (3) SunEye 210 shade tool to use in ARCH 107: Sustainable Design Methods & Technology labs	Goal E.2 Invest in cutting-edge relevant industry technology to prepare students for the workforce.	7,785	Fall 2022
	Obtain (3) Solar path finders with tripods to use in ARCH 107 labs	Goal E.2	1,794	Fall 2022
	Purchase Bacharach 12-7012 Sling Psychrometer Temperature and Humidity Meter Part Number: 00127012 to assist with running ARCH 107 labs	Goal E.2	481	Fall 2022
	Purchase Sunpath Diagrams to aid with the lab instruction of ARCH 107	Goal E.2	30	Fall 2022
	Obtain angle Estimators -- clear grid to aid with the lab instruction of ARCH 107	Goal E.2	250	Fall 2022
	Purchase Kestrel 1000 Pocket Wind Meter / Digital Anemometer to aid with lab instruction of ARCH 107	Goal E.2	395	Fall 2022
	Purchase (4) Lightweight, Portable, Adjustable Camera Tripods with Bags, 60-Inch - Pack of 2	Goal E.2	205	Fall 2022
	Add an e-printer to facilitate printing from any location. Currently printing is only possible from the CAD lab	Goal E.2	3,200	Fall 2023
	Add a second printer to meet increasing enrolment demands, and to facilitate remote printing. Currently printing is only possible from the CAD la.	Goal E.2	3,200	Fall 2022

	Replace existing 32 CAD stations to insure hardware compatibility with the latest software	Goal E.2	45,200	Fall 2025
	Renew 37 "Sketch Up Pro" networked lab licenses and add eight new licenses for a total of 45. The increase in the number of licenses accounts for the anticipated increase in enrolment.	Goal E.2	1,350	Fall 2022

EXECUTIVE SUMMARY
(Validation Team Report)

I. MAJOR FINDINGS

Strengths of the program/discipline:

- A dedicated, seasoned team of ARCH faculty members led by Associate Professor, Saad Sadig.
 - 97% of Spring 2022 ARCH class climate survey respondents are satisfied with the quality of instruction.
 - 97% are satisfied with the clarity of course goals and learning objectives.
- High-quality, updated classroom learning environments in O-113 and O-115.
 - 97% of Spring 2022 ARCH students' survey respondents are satisfied with the physical facilities and space.
 - 96% are satisfied with the program's instructional equipment.
- ARCH students' exposure to cutting-edge software in the architectural drafting degree and certificate programs.
- Current and planned articulations of ARCH courses with Cal Poly, San Luis Obispo.
- Rigorous and ambitious aspirational Program Learning Outcomes (PLOs).

Concerns regarding the program/discipline:

- Potential for program "bloat" with additional planned coursework in the degree and/or certificate program.
 - A major of 40 units (33 core and 7 selected units) is required for the current AS, Architectural Drafting program.
 - 53% of survey respondents work while attending AHC. Of those who work, the mean number of weekly work hours is 27.
- Questionable experiential and skills-based preparedness of program graduates, whether intending to transfer to four-year institutions like Cal Poly or entering the workforce as architectural draftspersons, to demonstrate achievement of all program learning outcomes.
- Only 68% of survey respondents are satisfied with counselors' advice about the program.

II. RECOMMENDATIONS

1. As vetted by the program's industry advisory committee members, continue to maintain state-of-the-industry currency of curriculum, instructional tools, software, and equipment.
2. Consider the development of stackable credentials to better differentiate and align workforce/occupational goals with the preparedness to achieve third-party industry-recognized certifications and with degree/certificate curricula, along with practical and achievable two-year (or less) plans for completion.
3. Consider embedding required Cooperative Work Experience and Education (CWEE) into degree and certificate programs.
 - a. Consider expanding consultation and collaboration with the City of Santa Maria and City of Lompoc Planning Departments to explore student internship opportunities and representation on the ARCH program advisory committee.
4. To enhance the district's apportionment under the Student-Centered Funding Formula and to permanently document certificate attainment on ARCH graduates' college transcripts, the Validation Team recommends that the program prepare submission for Chancellor's Office approval and chartering of an Architectural Drafting Certificate of Achievement program.
5. Encourage ARCH students' participation in extracurricular leadership and peer networking activities, such as SkillsUSA or an ARCH student club.
6. Continue to collaborate with the academic dean and department chair to leverage District and categorical resources to meet the program's annually-identified and updated instructional supply, equipment, technology, and faculty professional development needs and to strengthen the program's plans for contingency, continuity, and resiliency.

VALIDATION TEAM SIGNATURES

Margaret Lau

Margaret Lau
Dean, Academic Affairs

Robert Adames

Robert Adames (Jun 2, 2022 18:30 PDT)

Robert Adames
Adjunct Faculty, ARCH and ET

Gabriel Marquez

Gabriel Marquez (Jun 6, 2022 14:02 PDT)

Gabriel Marquez
Professor, Welding Technology

Patrick McGuire

Patrick McGuire (Jun 8, 2022 14:21 PDT)

Patrick McGuire
Professor, Automotive Technology

PLAN OF ACTION - POST-VALIDATION

(Sixth-Year Evaluation)

DEPARTMENT Industrial Technology PROGRAM Architecture

In preparing this document, refer to the Plan of Action developed by the discipline/program during the self-study, and the recommendations of the Validation Team. Note that while the team should strongly consider the recommendations of the validation team, these are recommendations only. However, the team should provide a rationale when choosing to disregard or modify a validation team recommendation.

Identify the actions the discipline/program plans to take during the next six years. Be as specific as possible and indicate target dates. Additionally, indicate by the number each institutional goal and objective which is addressed by each action plan. (See Institutional Goals and Objectives). The completed final plan should be reviewed by the department as a whole.

Please be sure the signature page is attached.

RECOMMENDATIONS TO IMPROVE STUDENT LEARNING OUTCOMES AND ACHIEVEMENT; Improve Student Performance				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Improve Student Performance.	Support extra-curricular, learn-by-doing activities such as the annual Cal Poly Design Village competition. Such activities provide hands-on design and construction experience and facilitate teamwork and collaboration.	Goal A.1 Enhance the student enrollment experience and create a community bridge by implementing strategic outreach activities and continually improving student onboarding processes.	None	Spring 2023
	Encourage ARCH students' participation in extracurricular leadership and peer networking activities, such as SkillsUSA or an ARCH student club.	Goal A.1	None	Spring 2023
	Encourage collaborative learning by emphasizing group projects, problem solving, and critical thinking.	Goal A.1	None	Spring 2023
	Collaborate with the library on providing up-to-date resources on architectural design, building	Goal C.8 Expand student support services such as libr peer tutors, and counselors i	Books and references	Fall 2022

	construction materials and methods, computer aided drafting and design, and architectural history.	high impact courses.		
--	--	----------------------	--	--

RECOMMENDATIONS TO ACCOMMODATE CHANGES IN STUDENT CHARACTERISTICS				
Change Type	Action	Reference in Educational Master Plan	Resources Ne	Target Date
Enrollment Changes	Add more course sections, as appropriate, to accommodate the different schedules of a growing student body.	Goal D.5 As part of the strategic enrollment management plan, implement class scheduling practices to ensure that courses are offered with adequate frequency for timely completion, and meet the diverse needs of part-time, full-time and weekend students.	None	Fall 2023
Demographic Changes	Continue outreach efforts to educate diverse students about career opportunities, and the higher-than-average earning potential for those with associate degrees. Create/update program outreach literature/material.	Goal E.7 Develop robust strategies to facilitate student to industry connections	Non-instructional printing augmentation.	Fall 2022

RECOMMENDATIONS TO IMPROVE THE EDUCATIONAL ENVIRONMENT				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Curricular Changes	As vetted by the program's industry advisory committee members, continue to maintain state-of-the-industry currency of curriculum, instructional tools, software, and equipment.	Goal D.6 Implement college wide comprehensive curriculum evaluation, design, and redesign to ensure viable degree and certificate programs that are responsive to labor market needs and workforce demand.	None	Fall 2022
	Prepare submission for Chancellor's Office approval and charting of an Architectural Drafting Certificate of Achievement program.	Goal D.6	None	Fall 2022
	Create a new Revit Certified User/Professional Certification Track	Goal D.6	None	Fall 2022
	Develop a sustainable design associate degree/certificate.	Goal D.6	None	Spring 2023
	Create a new "Introduction to Architecture" course and articulate with Cal Poly's EDES 101 "Introduction to Architecture and Environmental Design"	Goal D.6	None	Spring 2023

	Create a new "California Residential Code; CRC" course.	Goal D.6	None	Spring 2024
	Create a new "Architectural Model Making" course.	Goal D.6	None	Fall 2025
	Create a new "Independent Projects in Architecture" Arch 189 course.	Goal D.6	None	Fall 2024
	Add topics and/or a course covering the utilization of software in building energy performance, and analysis.	Goal D.6	None	Spring 2025
	Create new "Architecture History" courses covering: history of world architecture of the following eras: prehistory- middle ages, middle ages- 18 th century, and 18 th century to present.	Goal D.6	None	Spring 2023
	Create a new "Green Building Design with LEED Training" course.	Goal D.6	None	Spring 2025
Co-Curricular Changes	Continue to collaborate with the academic dean and department chair to leverage District and categorical resources to meet the program's annually-identified and updated instructional supply, equipment, technology, and faculty professional development needs and to strengthen the program's plans for contingency, continuity, and resiliency.	Goal D.6	None	Spring 2023
Neighboring College and University Plans. (Transfer and Articulation)	Work closely with college and high school counselors on providing students with specific advice regarding transfer, articulation, architectural education, and careers.	Goal A.3 Develop and maintain collaboration with K-12 partners to build successful early academic and career pathways.	None	Fall 2022
	Collaborate with the articulation officer to expand articulation opportunities with other universities offering architecture and building design and construction.	Goal E.4 Maximize usage of the transfer center and other transfer supports and services.	None	Spring 2023
Related Community Plans	Expand consultation and collaboration with the City of Santa Maria and City of Lompoc Planning Departments to explore student internship opportunities and representation on the ARCH program advisory committee.	Goal E.7 Develop robust strategies to facilitate student to industry connections.	None	Fall 2022
	Create internship/mentorship opportunities to allow the interaction between students and professional architects.	Goal E.7	None	Fall 2022
	Provide externship and professional development opportunities i.e., conferences, workshops, seminars, in areas such as teacher training, computer aided drafting, building information	Goal C.5 Emphasize culturally responsive instruction that supports equity and student success by expanding opportunities for faculty to	None	Fall 2022

	modeling, energy modeling, sustainable design, and green building products.	implement high impact practices.		
--	---	----------------------------------	--	--

RECOMMENDATIONS THAT REQUIRE ADDITIONAL RESOURCES				
Change Type	Action	Reference in Educational Master Plan	Resources Needed	Target Date
Facilities	N/A	N/A	N/A	N/A
Equipment	Buy (3) SunEye 210 shade tool to use in ARCH 107: Sustainable Design Methods & Technology labs	Goal E.2 Invest in cutting-edge relevant industry technology to prepare students for the workforce.	7,785	Fall 2022
	Obtain (3) Solar path finders with tripods to use in ARCH 107 labs	Goal E.2	1,794	Fall 2022
	Purchase Bacharach 12-7012 Sling Psychrometer Temperature and Humidity Meter Part Number: 00127012 to assist with running ARCH 107 labs	Goal E.2	481	Fall 2022
	Purchase Sunpath Diagrams to aid with the lab instruction of ARCH 107	Goal E.2	30	Fall 2022
	Obtain angle Estimators -- clear grid to aid with the lab instruction of ARCH 107	Goal E.2	250	Fall 2022
	Purchase Kestrel 1000 Pocket Wind Meter / Digital Anemometer to aid with lab instruction of ARCH 107	Goal E.2	395	Fall 2022
	Purchase (4) Lightweight, Portable, Adjustable Camera Tripods with Bags, 60-Inch - Pack of 2	Goal E.2	205	Fall 2022
	Add an e-printer to facilitate printing from any location. Currently printing is only possible from the CAD lab	Goal E.2	3,200	Fall 2023
	Add a second printer to meet increasing enrolment demands, and to facilitate remote printing. Currently printing is only possible from the CAD la.	Goal E.2	3,200	Fall 2022
	Replace existing 32 CAD stations to insure hardware compatibility with the latest software	Goal E.2	45,200	Fall 2025
Renew 37 "Sketch Up Pro" networked lab licenses and add eight new licenses for a total of 45. The increase in the number of licenses accounts for the anticipated increase in enrolment.	Goal E.2	1,350	Fall 2022	

PLAN OF ACTION – Post-Validation

Review and Approval

Plan Prepared By

Saad Sadig

Date: 6/8/2022

Date: _____

Date: _____

Date: _____

Date: _____

Reviewed:

Department Chair*

LR

Loren Bradbury (Jun 13, 2022 12:18 PDT)

Date: Jun 13, 2022

*Signature of Department Chair indicates approval by department of Plan of Action.

Reviewed:

Dean of Academic Affairs

Margaret Lan

Date: Jun 13, 2022

Vice President, Academic Affairs

RC

Robert Curry (Jun 23, 2022 07:54 PDT)

Date: _____






Pages from Arch_program_review_self-study_2021-2022 (REV1)_

Final Audit Report

2022-06-23

Created:	2022-06-23
By:	Lisa Gutierrez (lisa.gutierrez@hancockcollege.edu)
Status:	Signed
Transaction ID:	CBJCHBCAABAAJRpgSB4DHznjeLysQuVy8DXRgNhCUk7p

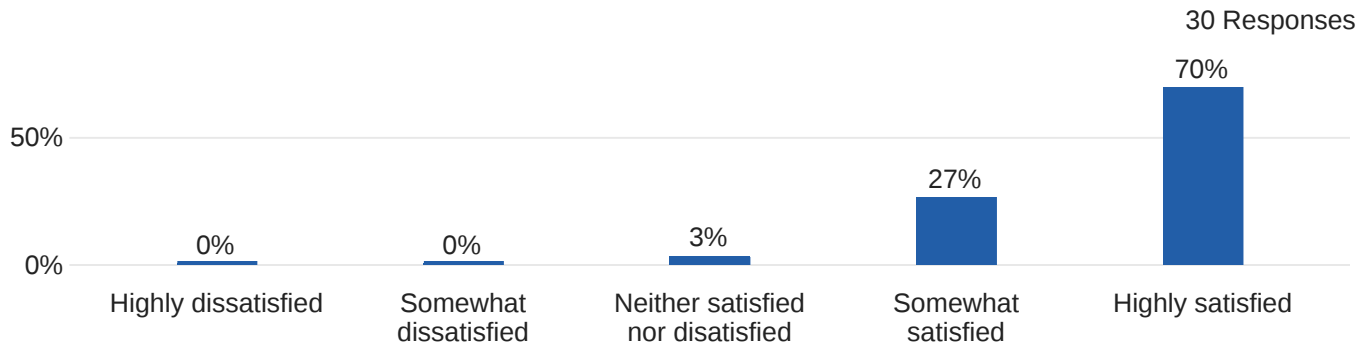
"Pages from Arch_program_review_self-study_2021-2022 (REV1)_" History

-  Document created by Lisa Gutierrez (lisa.gutierrez@hancockcollege.edu)
2022-06-23 - 3:44:15 AM GMT- IP address: 209.129.94.61
-  Document emailed to Robert Curry (rcurry@hancockcollege.edu) for signature
2022-06-23 - 3:44:48 AM GMT
-  Email viewed by Robert Curry (rcurry@hancockcollege.edu)
2022-06-23 - 2:53:54 PM GMT- IP address: 174.194.194.229
-  Document e-signed by Robert Curry (rcurry@hancockcollege.edu)
Signature Date: 2022-06-23 - 2:54:21 PM GMT - Time Source: server- IP address: 174.194.194.229
-  Agreement completed.
2022-06-23 - 2:54:21 PM GMT

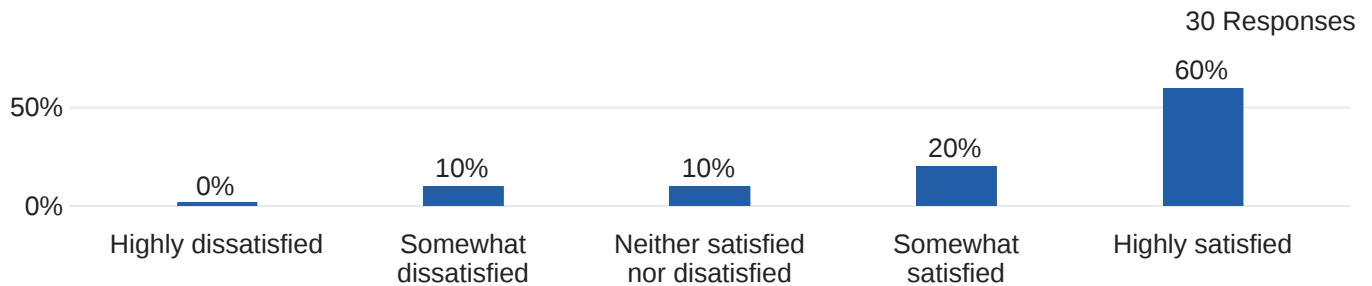
EXHIBITS

Architecture Program Spring 2022 Total N = 30

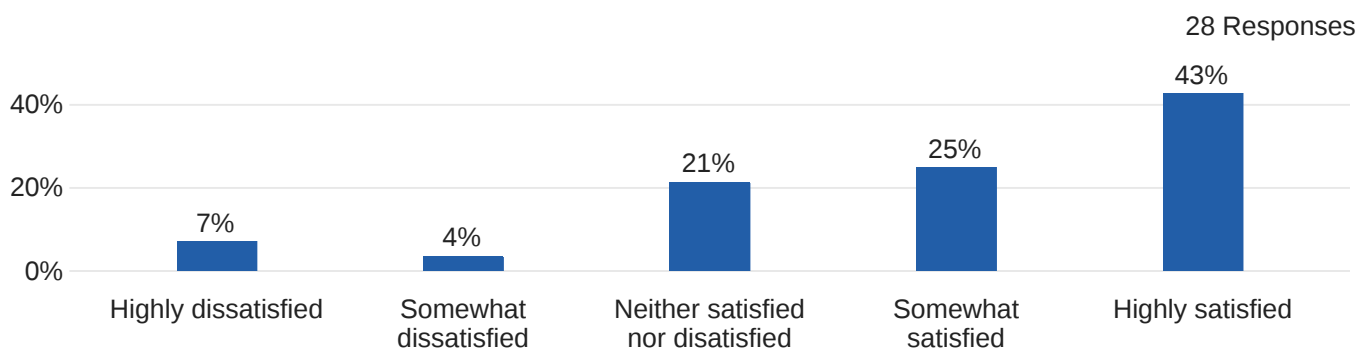
Q2_1 - Quality of instruction within the program



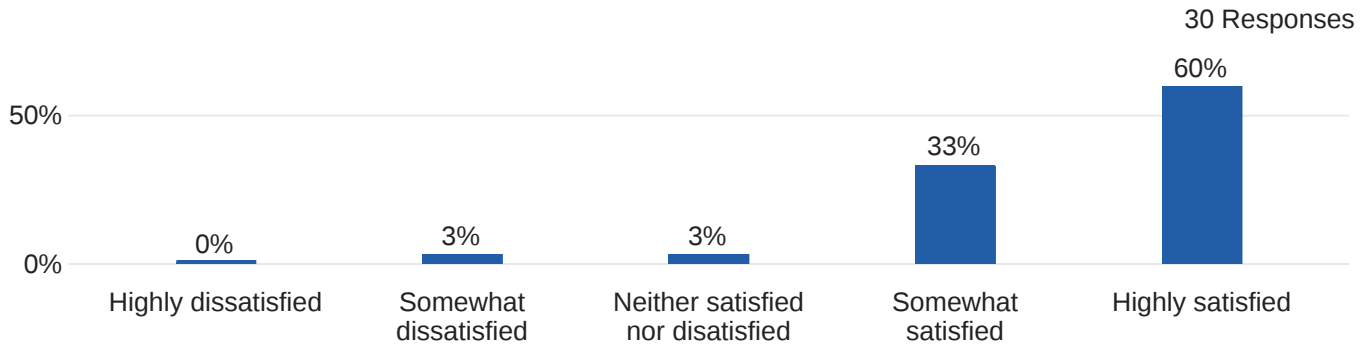
Q2_2 - The way textbooks and other materials used in courses within the program help me learn



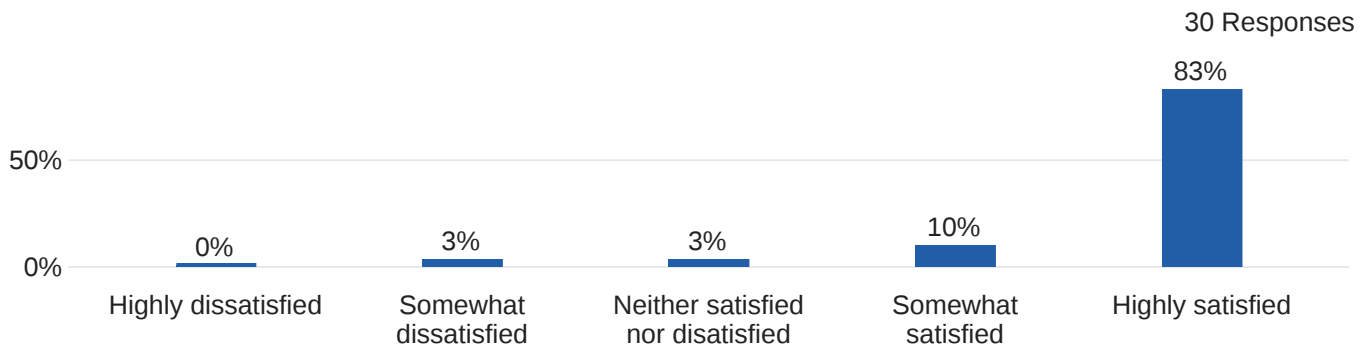
Q2_3 - Advice about the program from counselors



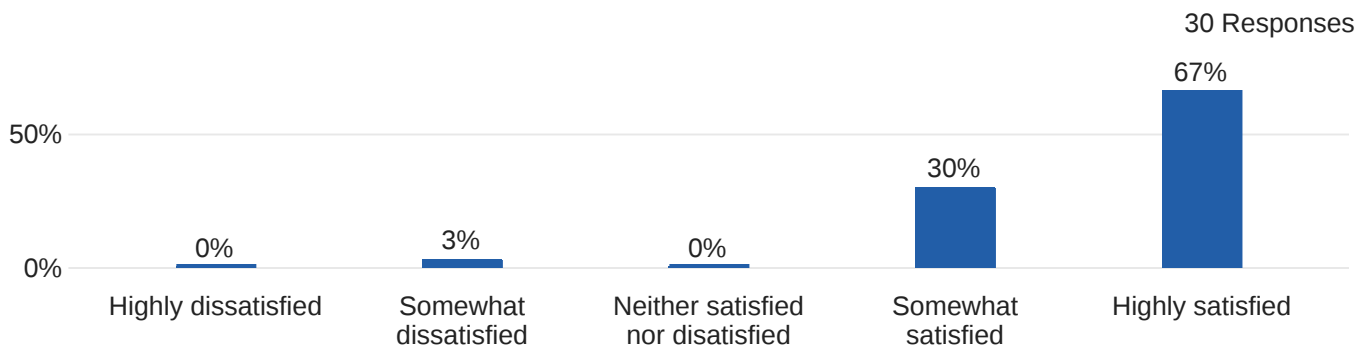
Q2_4 - The way this program meets your educational goals



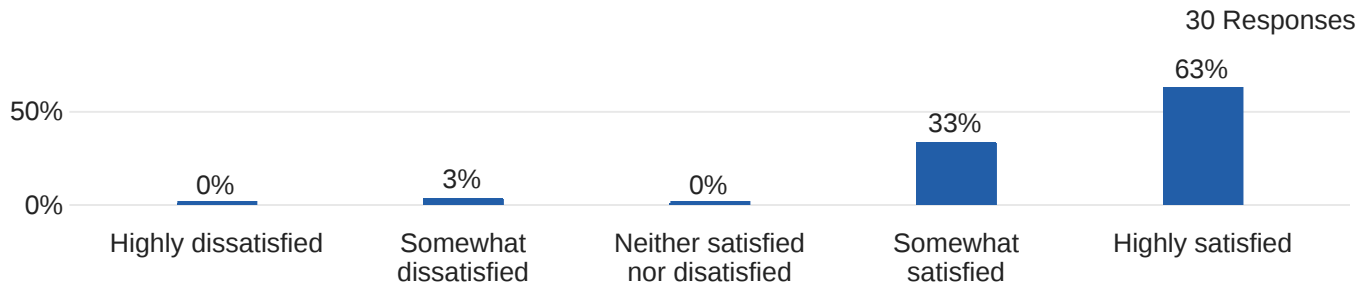
Q2_5 - Contribution towards your intellectual growth



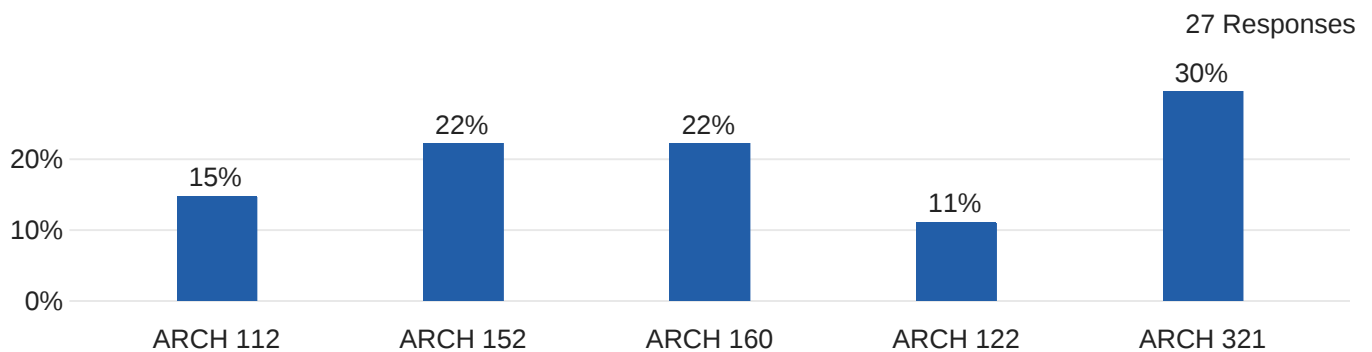
Q2_6 - Clarity of course goals and learning objectives



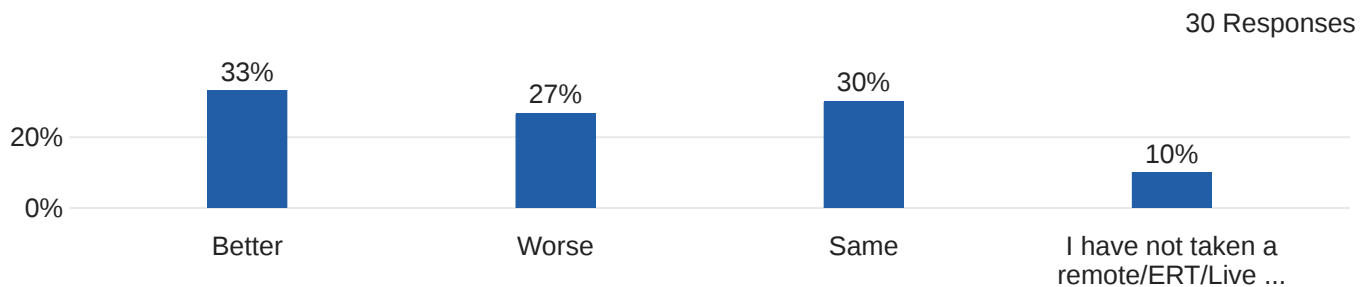
Q2_7 - Feedback and assessment of progress towards learning objectives



Q8 - Which courses are you taking this semester in Architecture?

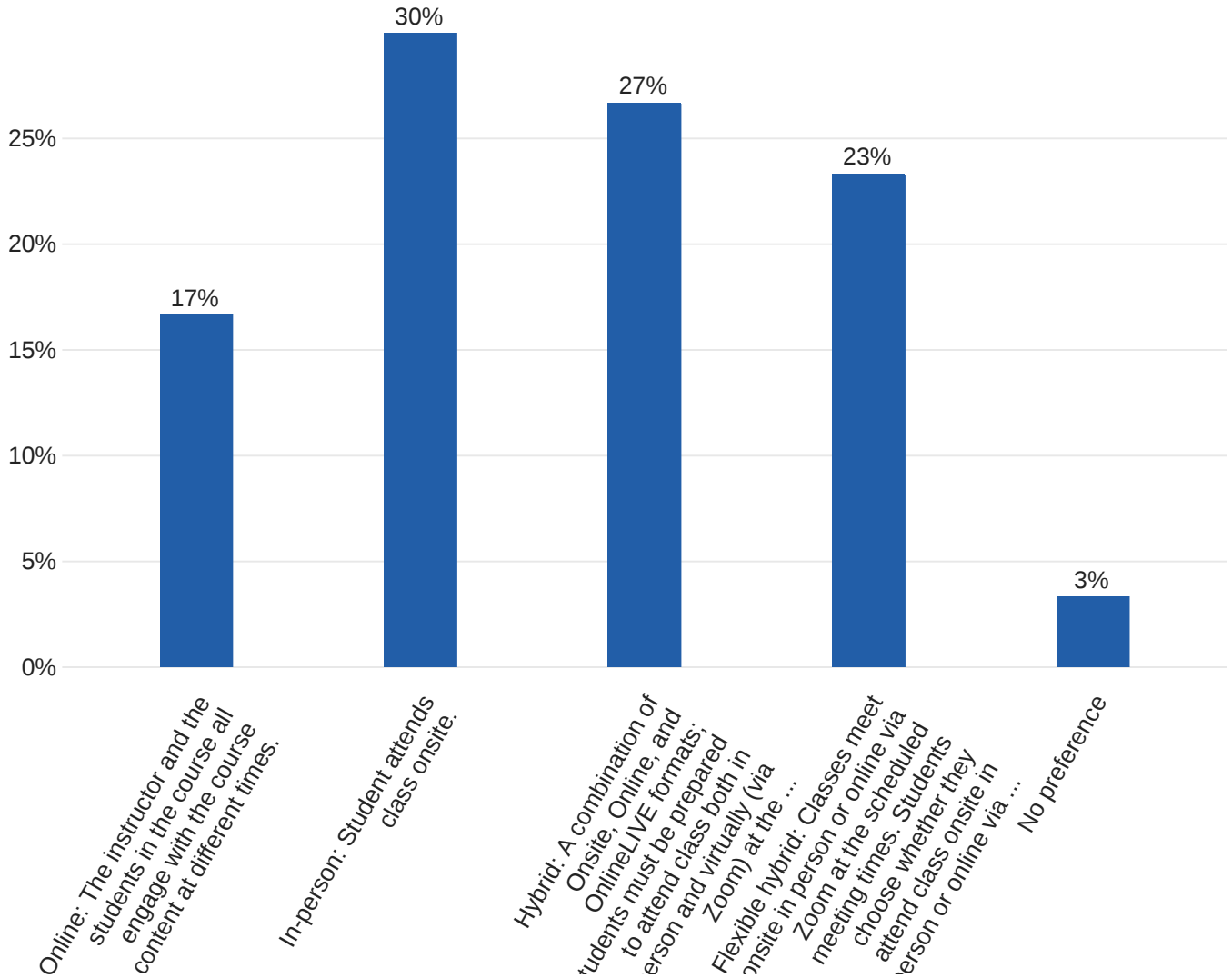


Q9 - Has the change to remote/ERT/Live Zoom made your experience in this course better, worse, same?



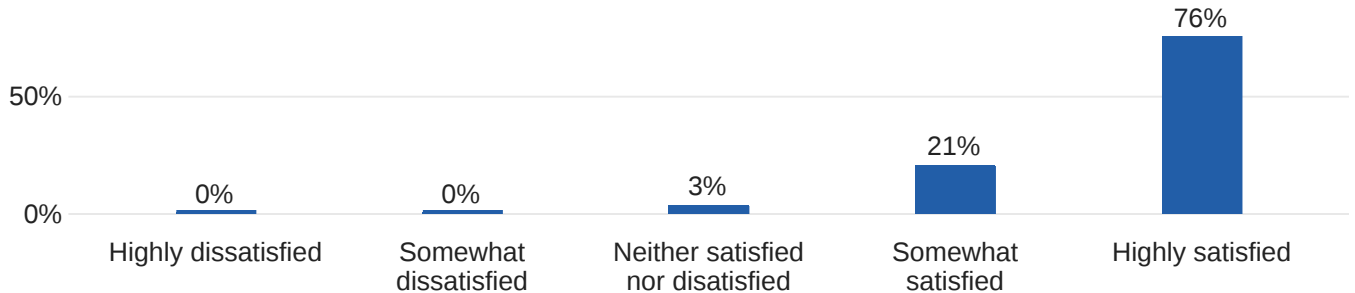
Q10 - Which type of format do you prefer for Architecture courses?

30 Responses

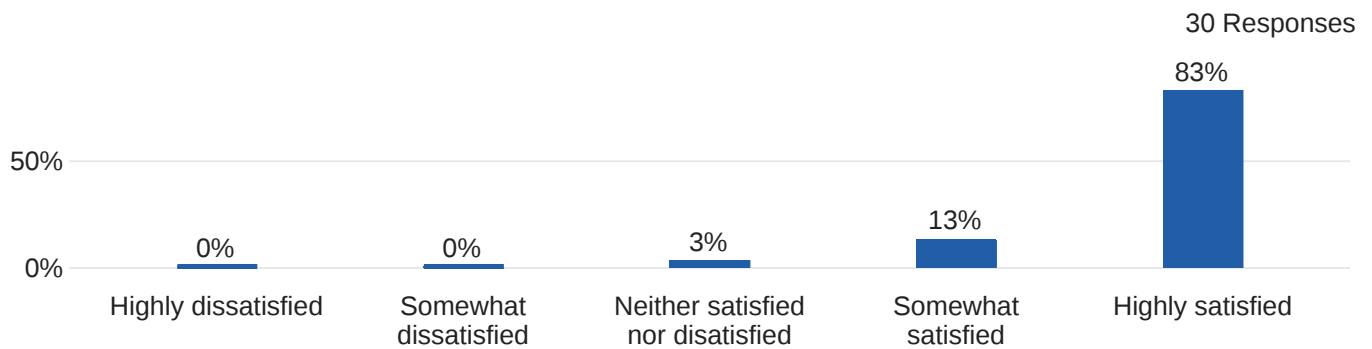


Q2_11 - The physical facilities and space (e.g., classrooms, labs)

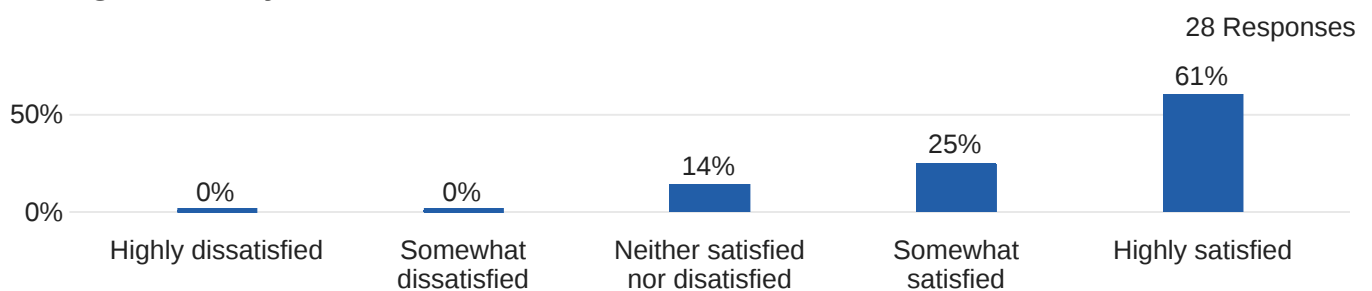
29 Responses



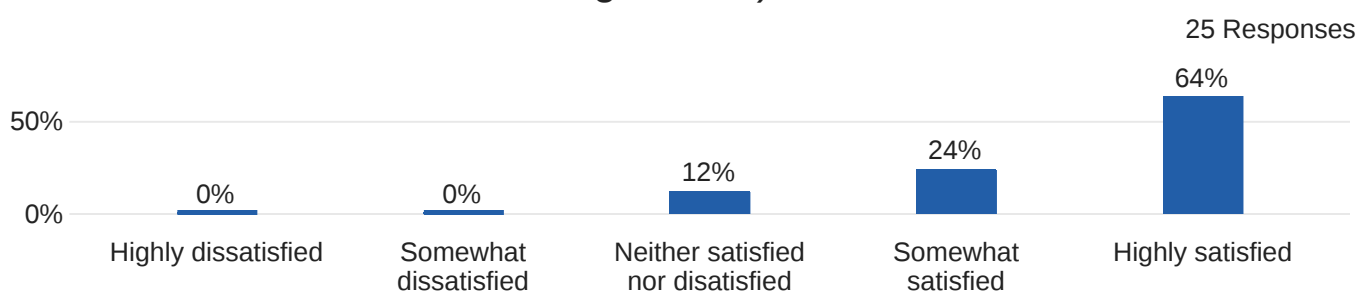
Q2_12 - Instructional equipment (e.g., computers, lab equipment)



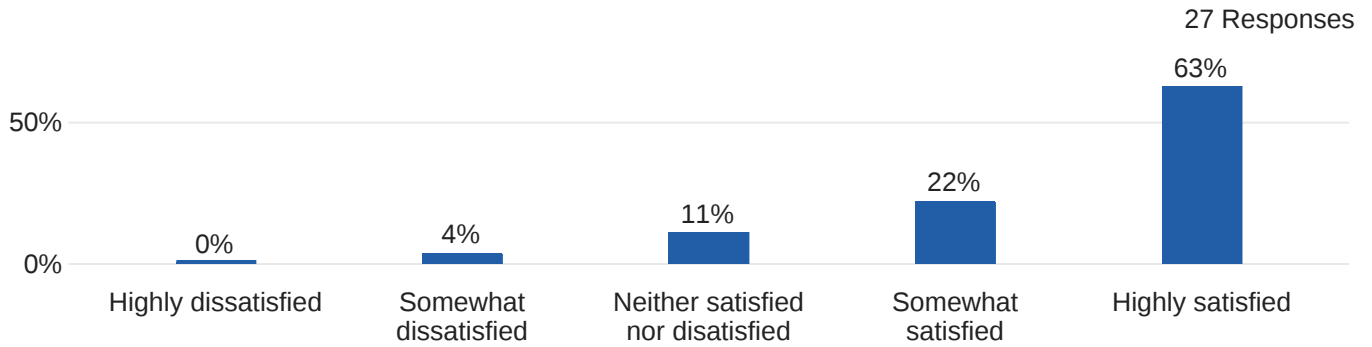
Q2_13 - Presentation of classes via the college's Canvas course management system



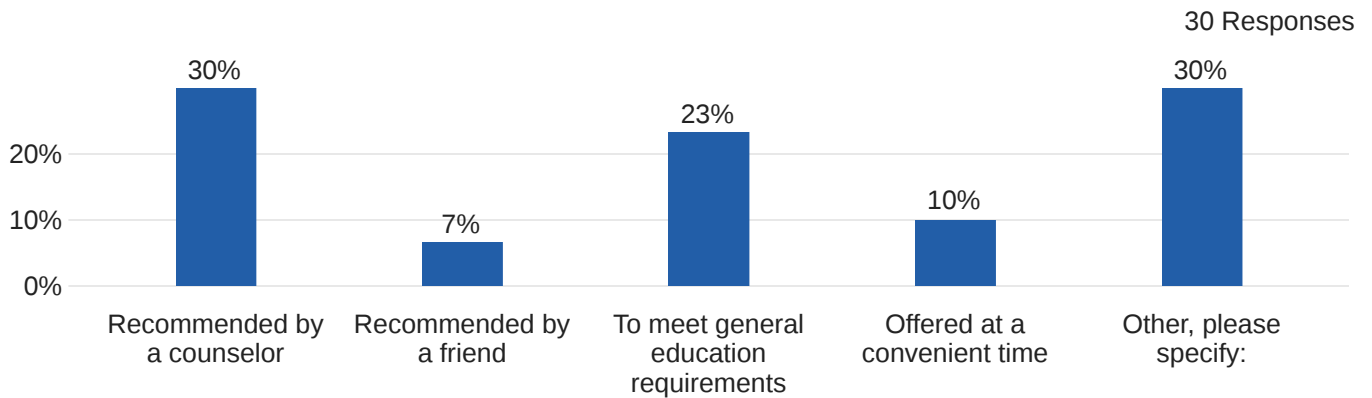
Q2_14 - Course assistance through tutorial services (e.g through the Tutorial Center, Math Lab, Writing Center)



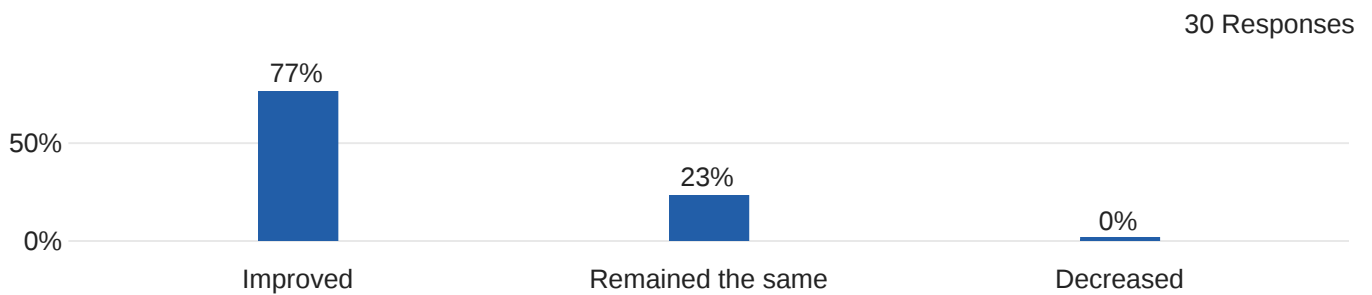
Q2_15 - Availability of appropriate resources in the libraries



Q4 - Which of the following best describes your reason for taking this and other courses in the Architecture program? - Selected Choice

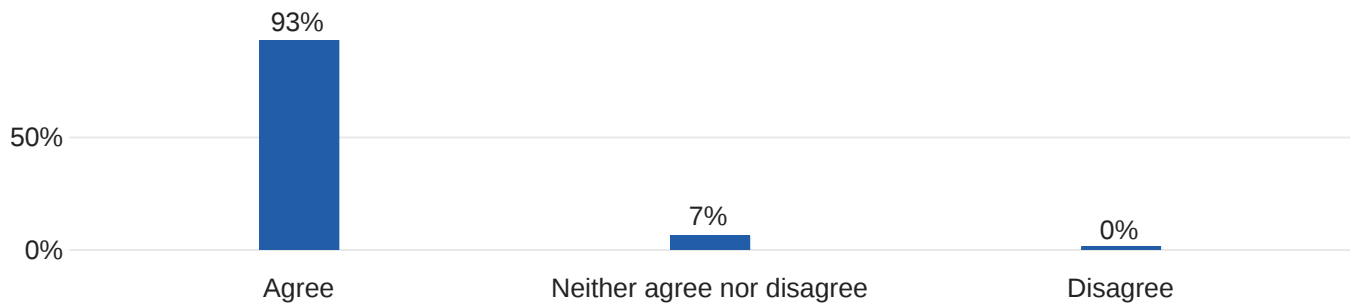


Q5 - Compared to the beginning of the semester, your attitude about Architecture has



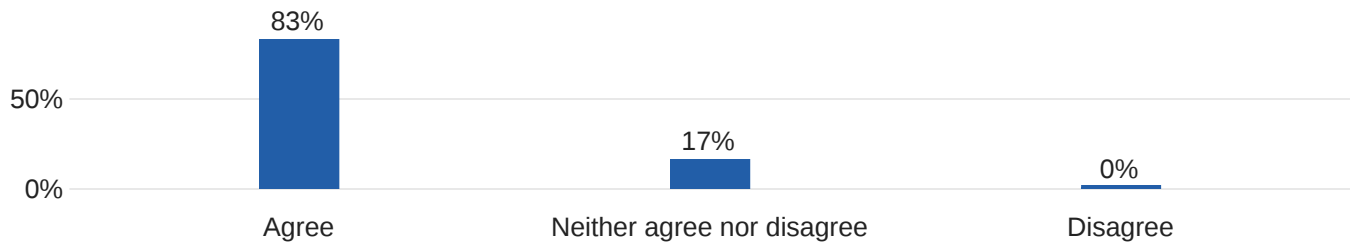
Q2_8 - The availability of courses offered in the Architecture program

30 Responses



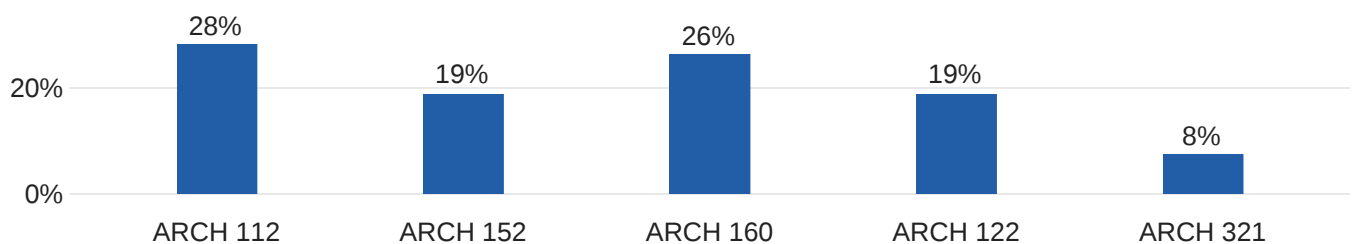
Q6_2 - I plan on taking additional courses in Architecture program

30 Responses

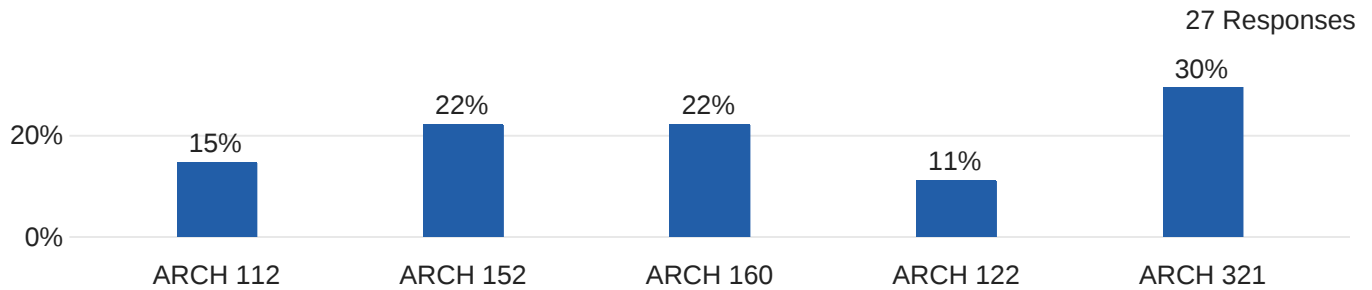


Q7 - Which of the following courses have you taken in Architecture program?

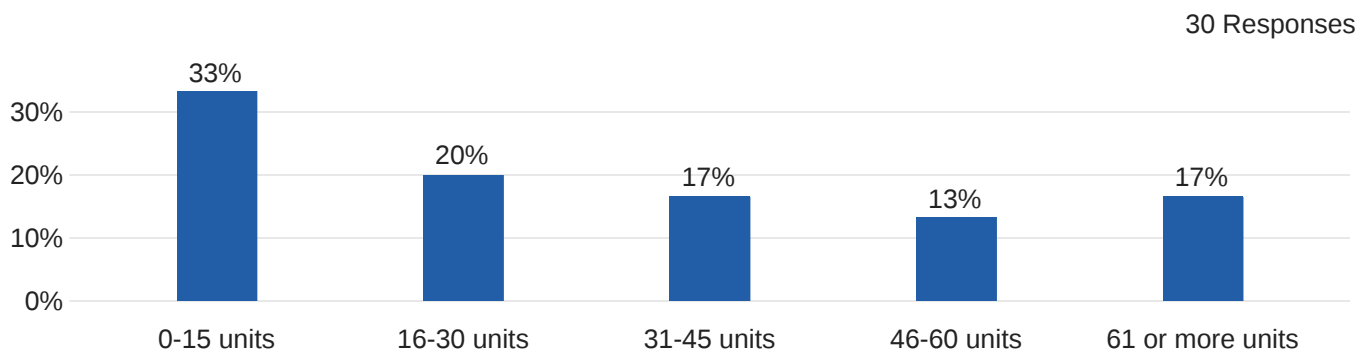
24 Responses



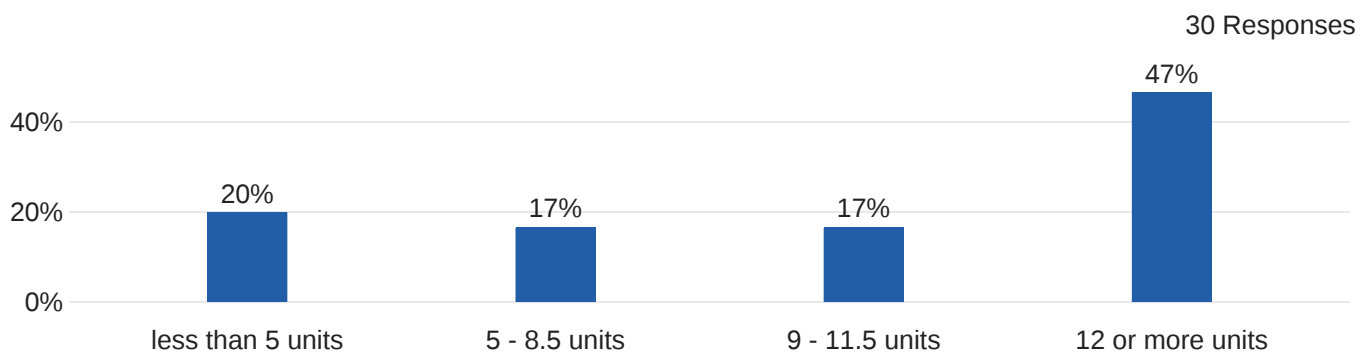
Q8 - Which courses are you taking this semester in Architecture program?



Q10 - How many units have you completed prior to this semester?

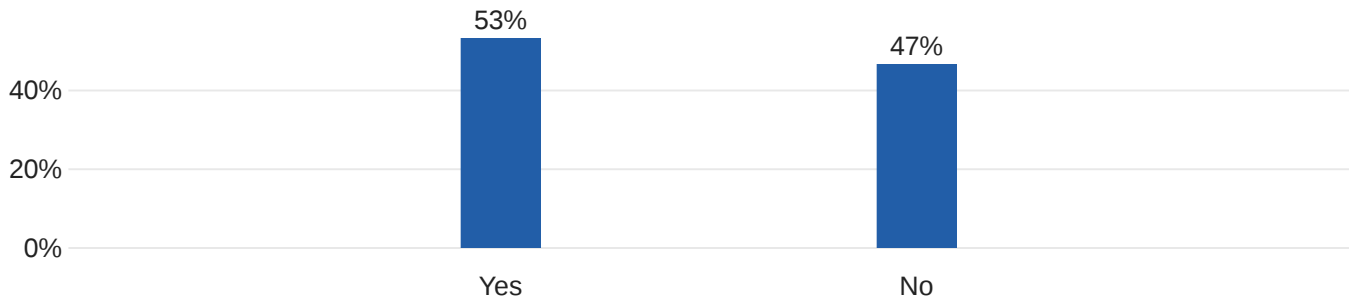


Q11 - In how many units are you currently enrolled?



Q14 - Are you working while attending Allan Hancock College?

30 Responses



Q15_1 - Hours Per week

15 Responses

Field	Min	Max	Mean	Standard Deviation	Variance	Responses	Sum
Hours Per week	8	60	27	13	166	15	412

Q17 - What kind of work/career are you interested in pursuing?

What kind of work/career are you interested in pursuing?

continuing in design

arch firm , animation, interior design

engineering drafting

Civil engineering

working for a architecture firm when done with school

Architecture and drafting

architectural designing and home design

Architect

I own a construction company.

Opening a custom residential design studio.

I wanted to have s career in drafting or related.

i am interested in pursuing architectural drafting

Mechanical contractor, general contractor, home development.

Architectural or mechanical drafting

I'm interested in becoming an architect, but I am also hoping to learn more about the math part of architecture.

I've been employed as a CAD drafter, CAD manager and CAD lead. All the while only knowing AutoCAD. The Architectural industry is now leaning towards Revit or they are requiring their employees to know both CAD softwares

right now im focused on solely becoming an architect, so just making plans and selling them but i might end up changing to another similar profession thats still in the architecture industry.

Interior Designer

Graphic Design/Illustration with focus on architecture

Architecture

Architecture/designer

Architecture Drafter

Construction Management

Architectural Drafting

Architecture

Q18 - Please tell us any challenges or barriers to your academic success in this program.

Please tell us any challenges or barriers to your academic success in this program.

personal time to commit to classwork outside of class

not having hand out tutorials on the basic/functions and how to use the program (sketch up revit)

the many challenges I have in my academic success would be travelling in between the two campuses

Being in remote classes like zoom

zoom has been a barrier for this program because i do not have a very good environment to work on my projects

Classes are online. The lack of interaction from my classmates due to online meetings (this career field requires plenty of team work). Professors are not teaching what is explained/described on the syllabus. We are being taught how to use software rather than architecture.

so far none, but personal issues, life little surprises.

none really, just wish it was in person. i learn better that way

I have been blessed and can say there were no challenges or barriers to my academic success in thie program. I graduated Fall 2022 with an A.S in Architectural Drafting and a Certificate of Completion.

Units load.

one of the challenges in this class is learning the subject and remebering all the important lessons

Computers are my weak point

None

The lack of organization and group work in some classes.

The barrier or challenge that I have is that my Academic record in the past, (30 years ago) is affecting my current academic efforts (academic probation).

right now everything is fine as long as i keep on trying and pushing forward of course.

No clear path on what courses to take in order

Finding new ideas for designs

Exterior Barriers outside of Hancock, personal matters.

Student Survey Data Summary & Comments

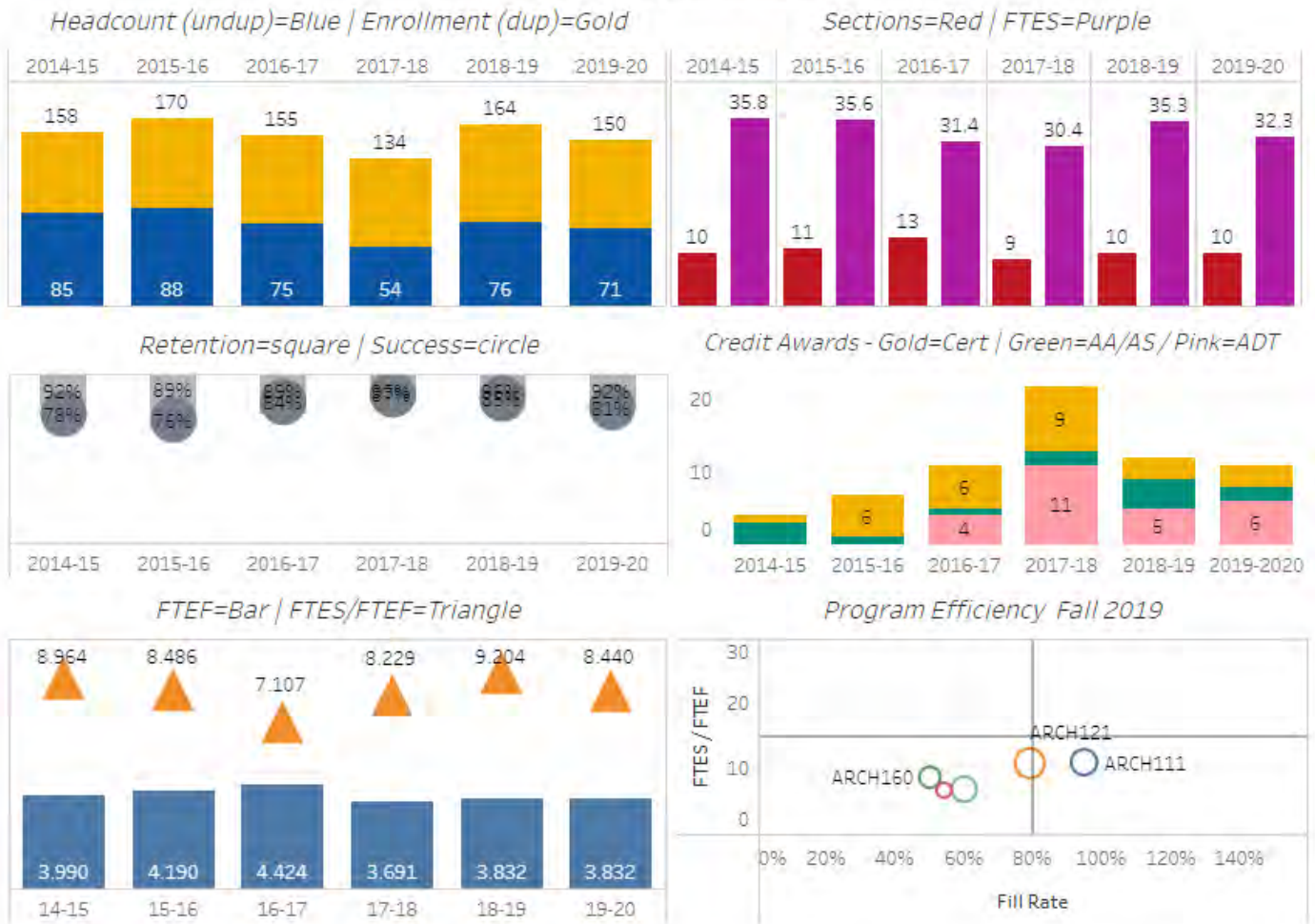
1. Most students are either satisfied or highly satisfied with the quality of instruction. The architecture program continues to explore ways to improve the quality of instruction by creating learning opportunities. One example of such opportunity is the collaboration, last semester, with one of Cal Poly's architecture design studio classes. The joint project with Cal Poly enabled our students to meet Cal Poly architecture students and their professor. Valuable lessons were learned about the teaching methodology and expectations of one of Cal Poly's design classes. The architecture program plans to continue with the collaboration efforts in the future.
2. Most students are either satisfied or highly satisfied with the way textbooks and other materials are used in courses within the program. The architecture program continues to make an effort to reduce or eliminate the high cost of textbooks by offering zero textbook classes. In such courses, students are provided with links to course related information available free of charge. One example is the building code class ARCH 321: California Building Code, where the code is available electronically free of charge. Another example is the CAD class ARCH 121: Architectural Practice I, where the help menu of the software provides valuable and free information about the use of software. In addition, ARCH 160: Digital Tools in Architecture; explores several free resources to gain knowledge about the use of the program. Sources include free videos and the help menu available within Sketchup.
3. Most students are either satisfied or high satisfied with the advice about the program provided by counselors. 21% of those surveyed are neutral. To further improve advising, more collaboration is ongoing between the architecture program at Allan Hancock College and the architecture program at Cal Poly SLO. One professor at Cal Poly has been assisting with information about portfolio preparation. The recent articulation with Cal Poly was welcomed news by our counselors and students. Furthermore, counselors will be able to recommend that second year classes be taken here rather than at Cuesta College. The architecture program expects higher retention rates and as a result, more opportunities for instructors and counselors to better advise students about education and possible career paths.
4. Most students are either satisfied or highly satisfied with the way this program meets their educational goals. While many students plan to transfer to a university and earn their BS degree, others are interested in obtaining either an AS degree or a certificate from Hancock. Others have the goals of gaining knowledge and acquiring skills that can help them advance in their current profession or start their own drafting business. The architecture program goal is to meet the different goals and objectives of students.

5. Most students are either satisfied or highly satisfied with the architecture program's contribution towards their intellectual growth. One example showing how the architecture program helps with intellectual growth is architecture student Edgar Brooks. Edgar enrolled in the architecture program more than 25 years ago. Back then, he learned about manual drafting methods. Such methods are no longer used today in professional practice. Edgar came back to gain skills in CAD drafting so he can be more competitive in the job market. Edgar is finishing his second semester of Revit Architecture. He is now able to produce computer aided drafting projects and is expected to be competitive when applying for a drafting position.
6. Most students are either satisfied or highly satisfied with clarity of course goals and learning objectives. The architecture program revised the current learning outcomes into outcomes that are more condensed and focused. The learning outcomes are assessed on a regular basis using a rubric. The improved assessment methods are helping instructors to better evaluate projects. In addition, the improved assessment methods are helping students improve their academic performances.
7. Most students are either satisfied or highly satisfied with feedback and assessment of progress towards their learning objectives. The new learning outcome and assessment tool SPOL has helped architecture program instructors enter student data in an organized and easy to access location. Assessment results will help facilitate discussions related to improving outcomes/assessments or coming up with other outcomes/assessments.
8. 33% of those surveyed indicated that the change to remote/ERT/Live Zoom made their learning experiences better, while 27% of those surveyed indicated that the ERT has made their learning experience worse. 30% of those surveyed indicated that their learning experience remained the same. While the level of struggle at the beginning of remote teaching seemed higher due to the new experience of remote learning. Many students were able to overcome the difficulties and seem to be adjusting to the new norm. Others continue to express a preference to face-to-face. A hybrid method of teaching seems to be effective, where lectures can be held remotely, and labs conducted face-to-face. Such modality could be adopted even after social distancing rules are no longer needed.
9. 30% of those surveyed indicated a preference for in-person classes while 27% of respondents indicated a preference for a hybrid modality. 23% of those surveyed chose the flexibility hybrid modality while 17% preferred online teaching modality. As mentioned in item 8 above, a hybrid method of teaching may be a good solution even after social distancing requirements are no longer in effect.
10. 53% of those surveyed indicated that they are working while attending college. while 47% responded that they are not working. The percentage of those who are working indicates a need to accommodate work schedules by offering evening classes. The architecture program is in the process of seeking more part-time instructors who can assist with teaching evening classes.

11. The mean number of student work hours per week is 27. The scheduling of classes needs to consider the extended work hours of some students.
12. 77% of those surveyed indicated that their attitude about architecture has improved, compared to the beginning of the semester. The architecture program continues to find ways to make learning more meaningful. One of the ways to help students make connections between what they are learning and the real world around them is to work on community-based projects. The architecture program has worked on several local projects such as the Good Samaritan Homeless Shelter project and the downtown mixed-use downtown.
13. 83% of those surveyed stated that they would take additional architecture classes in the future. The architecture program will continue to encourage students to complete their AS degree. A two-year educational plan to earn the AS degree is already in place.
14. 47% of surveyed students are taking 12 or more units. The architecture program continues to encourage students to complete their AS degrees and certificates.
15. Students have expressed interest in various areas of design including architecture, interior design, construction management, CAD drafting, and construction. The architecture program has several courses common to the various disciplines. For example, SketchUp and Revit are computer aided drafting and design programs used by architects, interior designers, structural engineers, and construction managers. One of the goals of the architecture program is to facilitate university transfer into other disciplines including landscape architecture, construction management, city and regional planning, and structural engineering.

Degrees & Certificates, Enrollment, Efficiency, Headcount & FTES

Quick Program Facts



Data Source: Student-MIS; Award, Major & Faculty-Banner | Headcount-unduplicated students; Enrollment-duplicated students; Retention-students who receive a grade in the course; Success-students who receive a passing grade in the course; FTES/FTEF target is 15+; Fill Rate target is 80%+

Articulation Status of Courses

In the spring of 2022 four additional Hancock architecture courses were articulated with four equivalent Cal Poly architecture classes (see assist.org updated articulation reference at <https://assist.org/transfer/report/25877816>)

Articulated Hancock courses are:

ARCH 111: Architectural Graphics & Design I	3.0 Units
ARCH 112: Architectural Graphics & Design II	3.0 Units
ARCH 160: Digital Tools in Architecture	3.0 Units
ARCH 121: Architectural Practice I	4.0 Units
ARCH 122: Architectural Drawing 2	4.0 Units
ARCH 151: Architectural Design Studio I	5.0 Units
ARCH 152: Architectural Design Studio II	5.0 Units

Additional courses in need of articulation include:

Arch 101: Survey of Architectural Education and Practice	1.0 Unit
ARCH 207: Architectural Technology Fundamentals 2.3	4.0 Units
ARCH 217: History of World Architecture: Prehistory- Middle Ages	4.0 Units
ARCH 218: History of World Architecture: Middle Ages- 18 th Century	4.0 Units
ARCH 219: History of World Architecture: 18th Century- Present	4.0 Units

Articulation Agreement by Major

Effective during the 2021-2022 Academic Year

To: California Polytechnic University, San Luis Obispo
2021-2022 General Catalog, Quarter

From: Allan Hancock College
2021-2022 General Catalog, Semester

ARCHITECTURE, B. Architecture

TRANSFER INFORMATION & ONLINE RESOURCES

WHAT COURSE CREDIT WILL TRANSFER FOR THIS MAJOR?

This view is By Major and shows lower division courses within B.Arch Architecture for the academic year (Fall to Summer) 2021-2022 – these are listed to the left, with articulated courses from the sending institution listed to the right. Where combinations of courses exist, some duplication may occur.

Courses are listed under three sections: **Major Courses**, **Support Courses** and **Other Courses**. All students in the major will take **Major and Support Courses**. Courses that are either in Concentrations, Areas of Emphasis or an Elective for the major are grouped in the **Other Courses** section. As a result, this section will vary in capacity and not all courses listed may be relevant to the course of study being pursued. Resources are provided below to confirm the exact lower division courses required.

Upper Division, General Education (GE) and free elective coursework are not listed here.

Both GE and course credit are awarded when an incoming articulated course is approved for GE. Where articulation is established but the transfer course is not approved for GE, only course credit is awarded.

As noted at the top of this agreement, Cal Poly SLO is on the Quarter system – all Cal Poly course units will reflect this.

WHAT COURSES NEED TO BE TAKEN TO BE A COMPETITIVE TRANSFER APPLICANT?

Not all the articulated courses listed below are required to be a competitive transfer applicant for this major.

It is ESSENTIAL that transfer applicants first review the Admissions webpages concerning Selection Criteria for Transfer Students and Major Specific Transfer Criteria.

Selection Criteria for Transfer Students can be found here:

<https://www.calpoly.edu/admissions/transfer-student/selection-criteria>

Major Specific Transfer Criteria is linked from the Selection Criteria page, and indicates both required and recommended coursework. Applicants should take note of these courses, and refer to their potential articulation in ASSIST through either Articulation Agreements by Major, by Department or by Prefix. Credit is extended based on the academic year in which the transfer course was taken.

RESOURCES TO USE WITH ASSIST

ASSIST only provides certain information; use the resources below for a more complete overview of this major.

[2021-2022 Catalog](http://catalog.calpoly.edu/) information on B.Arch Architecture can be found here: <http://catalog.calpoly.edu/>

The [Curriculum Sheet](http://flowcharts.calpoly.edu) for B.Arch Architecture can be found here: <http://flowcharts.calpoly.edu>

This is not a static document; new articulation may be added at any time. The information provided herein is subject to change without notice and does not constitute a contract or the terms and conditions of a contract between the student and the institution or the California State University.

NOTE CONCERNING "OTHER COURSES" SECTION FOR THIS MAJOR

- This major has no concentrations.
- This major has no areas of emphasis.
- This major has 18 units of Professional electives. These may include: any EDES, ARCE, ARCH, CM, CRP, LA or ART course. Additionally, any course included in any College of Architecture and Environmental Design minor, or the Art minor, may be taken.
- This major has no free electives, although if any Professional elective courses are also used to satisfy GE requirements, additional units of free electives may be required to meet the total units requirement.

MAJOR REQUIREMENTS

ARCH 101 - Survey of Architectural Education and Practice (1.00)

← No Course Articulated

ARCH 131 - Design and Visual Communication 1.1 (4.00) --- And --- ARCH 132 - Design and Visual Communication 1.2 (4.00) --- And --- ARCH 133 - Design and Visual Communication 1.3 (4.00)	←	ARCH 111 - Graphics and Design Studio 1 (3.00) --- And --- ARCH 112 - Graphics and Design Studio 2 (3.00) --- And --- ARCH 160 - Digital Tools for Architecture (3.00) Same-As: ET 160
ARCH 207 - Architectural Technology Fundamentals 2.3 (4.00)	←	No Course Articulated
ARCH 217 - History of World Architecture: Prehistory- Middle Ages (4.00)	←	No Course Articulated
ARCH 218 - History of World Architecture: Middle Ages- 18th Century (4.00)	←	No Course Articulated
ARCH 219 - History of World Architecture: 18th Century- Present (4.00)	←	No Course Articulated
ARCH 241 - Architectural Technology Fundamentals 2.1 (4.00) --- And --- ARCH 242 - Architectural Technology Fundamentals 2.2 (4.00)	←	ARCH 121 - Architectural Drawing 1 (4.00) --- And --- ARCH 122 - Architectural Drawing 2 (4.00)
ARCH 241 - Architectural Technology Fundamentals 2.1 (4.00) --- And --- ARCH 251 - Architectural Design 2.1 (5.00)	←	No Course Articulated
ARCH 242 - Architectural Technology Fundamentals 2.2 (4.00) --- And --- ARCH 252 - Architectural Design 2.2 (5.00)	←	No Course Articulated
ARCH 207 - Architectural Technology Fundamentals 2.3 (4.00) --- And --- ARCH 253 - Architectural Design 2.3 (5.00)	←	No Course Articulated
ARCH 251 - Architectural Design 2.1 (5.00) --- And --- ARCH 252 - Architectural Design 2.2 (5.00) --- And --- ARCH 253 - Architectural Design 2.3 (5.00)	←	ARCH 151 - Architectural Design Studio I (3.00) --- And --- ARCH 152 - Architectural Design Studio I (3.00)

SUPPORT COURSES

ARCE 211 - Structures I (3.00)	←	ENGR 152 - Statics (3.00)
ARCE 212 - Structures II (3.00)	←	ENGR 156 - Strength of Materials (4.00)
ARCE 211 - Structures I (3.00) --- And --- ARCE 212 - Structures II (3.00)	←	ENGR 152 - Statics (3.00) --- And --- ENGR 156 - Strength of Materials (4.00)
ARCE 226 - Introduction to Structural Systems (3.00)	←	No Course Articulated
EDES 123 - Principles of Environmental Design (4.00)	←	No Course Articulated
MATH 141 - Calculus I (4.00) Same-As: HNRS 141	←	MATH 181 - Calculus 1 (4.00)
MATH 182 - Calculus for Architecture and Construction Management (4.00)	←	MATH 182 - Calculus 2 (4.00)
PHYS 121 - College Physics I (4.00) --- And --- PHYS 122 - College Physics II (4.00)	←	PHYS 141 - General Physics 1 (4.00) --- And --- PHYS 142 - General Physics 2 (4.00)

--- Or ---

PHYS 141 - General Physics IA (4.00)

Same-As: HNRS 134

--- And ---

PHYS 132 - General Physics II (4.00)

Same-As: HNRS 132

**PHYS 161** - Engineering Physics 1 (4.00)

--- And ---

PHYS 162 - Engineering Physics 2 (4.00)**PHYS 121** - College Physics I (4.00)**PHYS 141** - General Physics 1 (4.00)

--- Or ---

PHYS 141 - General Physics IA (4.00)

Same-As: HNRS 134

**PHYS 161** - Engineering Physics 1 (4.00)**PHYS 122** - College Physics II (4.00)**PHYS 141** - General Physics 1 (4.00)

--- And ---

PHYS 142 - General Physics 2 (4.00)

--- Or ---

PHYS 132 - General Physics II (4.00)

Same-As: HNRS 132

**PHYS 162** - Engineering Physics 2 (4.00)**OTHER COURSES (CONCENTRATION/EMPHASIS/ELECTIVES)******REFER TO TOP OF AGREEMENT********REFER TO CATALOG******END OF AGREEMENT**

Approved Course Outlines

Course	Link to course outline
ARCH 111	https://hancockcollege.curriqunet.com/Form/Course/Index/4780
ARCH 112	https://hancockcollege.curriqunet.com/Approval/Course/History/4781
ARCH 121	https://hancockcollege.curriqunet.com/Form/Course/Index/2755
ARCH 122	https://hancockcollege.curriqunet.com/Form/Course/Index/4778
ARCH 131	https://hancockcollege.curriqunet.com/Form/Course/Index/322
ARCH 151	https://hancockcollege.curriqunet.com/Form/Course/Index/2837
ARCH 152	https://hancockcollege.curriqunet.com/Form/Course/Index/1656
ARCH 160	https://hancockcollege.curriqunet.com/Form/Course/Index/4779
ARCH 321	https://hancockcollege.curriqunet.com/Form/Course/Index/5073

Board Approval: 10/16/2012
PCA Established: 10/12/2012
DL Conversion:
Date Reviewed: Fall 2020
Catalog Year: 2020 - 2021

Allan Hancock College Course Outline

Discipline Placement: Architecture

Department: Industrial Technology

Prefix and Number: ARCH 111

Catalog Course Title: Architectural Graphics & Design I

Banner Course Title: Arch. Graphics & Design I

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	2.000	32.0 - 36.0	
Lab	4.000	64.0 - 72.0	
Outside-of-Class Hours	4.000	64.0 - 72.0	
Total Student Learning Hours	10.0	160.0 - 180.0	3.0
Total Contact Hours	6.0	96.0 - 108.0	

Number of Times Course may be Repeated

None

Grading Method

Letter Grade or Pass/No Pass

Requisites

None

Entrance Skills

None

Catalog Description

Introduces the graphic tools, techniques, and conventions used to communicate architectural ideas. Tools, techniques, and conventions include freehand drawing, architectural drawing systems, paraline drawing, multi view drawing, perspective drawing, rendering of tonal values, model making, and architectural presentations. Covers the fundamental principles and application of two- and three-dimensional architectural design.

Course Content

Lecture

1. Introduction and instrument use
2. Symbols

- a. landscaping
 - b. foregrounds
 - c. backgrounds
 - d. building materials
 3. Site Plans
 4. Floor Plans
 5. Sections
 6. Elevations
 7. Perspective; one-point
 8. Axonometric; isometric
 9. Axonometric; dimetric
 10. Perspective; two-point
 11. Perspective; three-point
 12. Shadows; elevation, plan, perspective
 13. Photographic projection, perspective
-

Course Objectives

At the end of the course, the student will be able to:

1. produce hand lettering that has good form, consistency, alignment and legibility
 2. utilize a range of media, tools, techniques and pictorial systems to represent existing and imagined objects and environments on two dimensional surfaces and in three-dimensional models.
 3. incorporate people and landscape into orthographic, paraline and perspective drawings to animate, give scale and enhance the illusion of form and depth
 4. apply basic organizational, spatial, structural, and constructional principles to the conception and development of interior and exterior spaces, building elements, and components.
 5. speak and write effectively on basic architectural design principles and other course topics.
-

Methods of Instruction

- Lab
 - Lecture
 - **Methods of Instruction Description:**
Critiques of student work, student presentations.
-

Assignments

- **Outside Assignments**
1) Define in words and illustrate with images the principles of design. 2) Read the handout provided by the instructor (or from the textbook) and take the attached quiz. 3) Use the internet to research architectural principles. 4) Produce drawings based on various architectural themes.
 - **Sample Assignment(s)**
Use a marker to create a positive/negative drawing.
-

Methods of Evaluation

- 1) Regular textbook and/or handout quizzes graded on content and accuracy.
 - 2) Written assignments graded on content, accuracy and applied technique.
 - 3) Problem solving demonstrations such as creating a simple architectural design, graded on fidelity to program and applied technique.
 - 4) Oral demonstrations such as presenting designs to the class and professional visitors, graded on content, accuracy and applied technique.
 - 5) Skills demonstration such as a freehand drawing exercise graded on accuracy, content and applied technique. Sample Essay Question: Define and illustrate the architectural design principle of asymmetry.
-

Texts and Other Instructional Materials

Adopted Textbook

1. Ching, Francis, D.K. *Architectural Graphics* 2009

Supplemental Texts

1. Lockard, William K. Design Drawing. Van Nostrand. Reinhold
2. Kuckein, H.E. Architectural Illustration & Presentation
3. Walker. T.D. Perspective Sketches

Instructional Materials

1. pencils, erasers, architect's scale, Ames lettering guide, circle template, brush, leads, adjustable triangle, T-square, parallel ruler.
-

Student Learning Outcomes

1. ARCH111 SLO1 - Design and draw using free hand and hard line drafting techniques.
 2. ARCH111 SLO2 - Build physical models as a way to understand, describe and explore and built environment.
 3. ARCH111 SLO3 - Draw two dimensional plans sections and elevations that describe architectural design.
 4. ARCH111 SLO4 - Draw paraline and perspective drawings to study and represent the volumetric shape of built form.
 5. ARCH111 SLO5 - Participate in a positive co-operative group learning environment.
 6. ARCH111 SLO6 - Use computer aided design software to study and represent the volumetric shape of built form.
-

Distance Education

Delivery Methods

- ERT
- Other
Emergency remote teaching (ERT) for lectures combined with in-class labs.

Instructor Initiated Contact Hours Per Week: 6.000

Contact Types

1. Other (please specify)
Emergency Remote Teaching (ERT) in synchronous class meetings

Adjustments to Assignments

Instructors may employ a variety of online tools to make the necessary adjustments in an ERT/ DE setting for this course.

- Assignments will be submitted primarily through the district Course Management System(CMS).
- Students can submit multiple files types, type in a textbox to submit their assignments, or submit links to their work in the cloud or other web related service such as Google Docs.
- Students can also submit assignments through district email or the messaging service in the district CMS.
- The district CMS contains many tools instructors can use to facilitate different assignment types.
- Instructors may use the assignments tool and / or discussion tool to facilitate student to student interaction.
- Instructors may use the feedback features of the district CMS to facilitate instructor - initiated contact.
- When appropriate, instructors may use group assignments.

Possible tools employed to adjust for ERT / DE course may include, but not limited to:

- District CMS assignments
- Threaded discussion forums
- District Email
- District CMS messaging service
- Announcements in the district CMS
- Feedback of student work through use of Speed Grader or other tools

- Synchronous audio / videoconferencing(Zoom, Cranium Café)
- Interactive mobile technologies
- Chat, text, Twitter
- Telephone
- Virtual offices hours
- Other: None

Adjustments to Evaluation Tools

- ERT/DE courses allow for multiple evaluation tools with online technology.
- This course will be able to use interactive quizzes which allow for automated assessment performance for certain question types and the use of the mastery gradebook.
- If the assessment requires necessary student authentication, the instructor can employ machine automated proctoring services available through the current district CMS.
- Use of these features (quizzes, discussions, and assignments) provide the necessary tools to evaluate student progress toward the objectives of the course.

Strategies to Make Course Accessible to Disabled Students

All courses must meet the WCAG 2.0 level AA standards including but not limited to the items listed below:

1. Images, graphs, charts or animation. A text equivalent or alt text is provided for every non-text element, including all types of images and animated objects. This will enable a screen reader to read the text equivalent to a blind student.
2. Multimedia. Equivalent alternatives for any multimedia presentation are synchronized with the presentation. Videos and live audio must be closed captioned. For archived audio, a transcript maybe sufficient.
3. Documents and other learning materials. PDFs, Microsoft Word documents, PowerPoint presentations, Adobe Flash and other content must be as accessible as possible. If it cannot be made accessible, consider using HTML or, if no other option is available, provide an accessible alternative. PDF documents must be properly tagged for accessibility.
4. Timed quizzes/exams. Extended time on quizzes and exams is one of the most common accommodations. Instructions for extending time in Canvas.
5. Outside webpages and links
6. Ensure that all webpages meet 508 standards by testing through Cynthia Says. Follow the Accessibility Guidelines WCAG 2.0 Level AA
7. Ensure links make sense out of context. Every link should make sense if the link text is read by itself. Screen reader users may choose to read only the links on a web page. Certain phrases like "click here" and "more" must be avoided.
8. Applications, software, and outside learning systems. All required outside applications and/or learning systems (e.g MyMathLab, Aleks, etc.) are accessible OR an alternative is provided. Test with WebAIM WAVE toolbar.
9. Avoid text images. Images of text are avoided, OR an alternative is provided. (Examples of images of text are PDFs made from scanned pages, and word art.)
10. Color contrast. Text and background color have sufficient contrast on all documents, PowerPoints, and webpages both inside and outside of the LMS.
11. Text objects. If the shape, color, or styling of any text object conveys information, that information is conveyed in plain text as well.
12. Disability statement. The course syllabus contains the college's suggested Disability Statement as well as current information on the location and contact information for the Learning Assistance Program (LAP).

Inform Students

Email, discussion boards, Zoom, and ConnexED.

Additional Comments

None

Generated on: 3/21/2022 1:11:49 PM

Board Approval: 10/16/2012
PCA Established: 10/16/2012
DL Conversion:
Date Reviewed: Fall 2020
Catalog Year: 2020 - 2021

Allan Hancock College

Course Outline

Discipline Placement: Architecture
Department: Industrial Technology
Prefix and Number: ARCH 112
Catalog Course Title: Architectural Graphics & Design II
Banner Course Title: Architectural Grap/Design II

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	2.000	32.0 - 36.0	
Lab	4.000	64.0 - 72.0	
Outside-of-Class Hours	4.000	64.0 - 72.0	
Total Student Learning Hours	10.0	160.0 - 180.0	3.0
Total Contact Hours	6.0	96.0 - 108.0	

Number of Times Course may be Repeated
None

Grading Method
Letter Grade or Pass/No Pass

Requisites

Prerequisite
ARCH 111 Architectural Graphics & Design I

Entrance Skills

Upon entering this course, the student should be able to:

ARCH 111 - Architectural Graphics & Design I

- produce hand lettering that has good form, consistency, alignment and legibility
 - utilize a range of media, tools, techniques and pictorial systems to represent existing and imagined objects and environments on two dimensional surfaces and in three-dimensional models.
 - incorporate people and landscape into orthographic, paraline and perspective drawings to animate, give scale and enhance the illusion of form and depth
 - apply basic organizational, spatial, structural, and constructional principles to the conception and development of interior and exterior spaces, building elements, and components.
 - speak and write effectively on basic architectural design principles and other course topics.
-

Catalog Description

Continuation of ARCH 111 plus the issues, concepts, processes and skills pertaining to research methods, building form analysis, color theory, and the design and visual communication of architectural space. Projects of increasing complexity are assigned and developed using various presentation techniques and media.

Course Content

Lecture

1. Survey of Influential Architects & Research Methods
 2. Various Presentation Media
 3. Color Theory
 4. Analysis of an Architect
 5. Design Methods and Processes
 6. Site Planning and Interior Design
 7. Presentation Techniques
 8. Model Making
-

Course Objectives

At the end of the course, the student will be able to:

1. meet the objectives of ARCH 111 with increased competency and understanding.
 2. employ a variety of graphic and/or digital media to represent and communicate ideas and concepts.
 3. analyze a published work of architecture and identify and present its formal qualities through drawings, photos and words.
 4. analyze a simple/intermediate building program and represent its spatial and relational requirements with diagrams, sketches and/or digitally.
 5. construct 3-D digital models and/or physical models from sketches to explore and develop the three dimensional implications of design alternatives.
-

Methods of Instruction

- Lab
 - Lecture
 - **Methods of Instruction Description:**
Critiques of student work, student presentations
-

Assignments

- **Outside Assignments**
1) Analyze the design vocabulary of a famous architect. 2) Prepare an illustrated essay about an influential architect's philosophy. 3) Use the internet to research architectural themes. 4) Produce drawings based on an various architectural themes.
 - **Sample Assignment(s)**
Produce a drawing of a work of architecture that you admire.
-

Methods of Evaluation

1) Regular textbook and/or handout quizzes graded on content and accuracy. 2) Written assignments graded on content, accuracy and applied technique. 3) Problem solving demonstrations such as creating a simple/intermediate architectural design, graded on fidelity to program and applied technique. 4) Oral demonstrations such as presenting designs to the class and to professional visitors, graded on content, accuracy and applied technique. 5) Skills demonstration such as building digital and/or physical models, graded on accuracy and applied technique. Sample Essay Question: Provide analysis of the architectural vocabulary of the selected architect.

Texts and Other Instructional Materials

Adopted Textbook

1. Ching, Francis, D.K. *Form, Space and Order* 2007

Supplemental Texts

1. Doyle, E., *Color Drawing*, John Wiley & Sons, 2006.

Instructional Materials

1. Colored markers and pencils.

Student Learning Outcomes

1. ARCH112 SLO1 - Use various rendering techniques by employing different media.
2. ARCH112 SLO2 - Design a project of intermediate complexity using the design vocabulary of the chosen architect.
3. ARCH112 SLO3 - Analyze the built environment using certain identifiable characteristics.
4. ARCH112 SLO4 - Research and study an architect's work in a systematic way.
5. ARCH112 SLO5 - Participate in a positive co-operative group learning environment.
6. ARCH112 SLO6 - Use computer-aided design software to study and represent the volumetric shape of built form.

Distance Education

Delivery Methods

- ERT

Instructor Initiated Contact Hours Per Week: 6.000

Contact Types

1. Other (please specify)

Emergency Remote Teaching (ERT) in synchronous class meetings using audiovisual conferencing platform. (weekly)

Adjustments to Assignments

Instructors may employ a variety of online tools to make the necessary adjustments in an ERT/ DE setting for this course.

- Assignments will be submitted primarily through the district Course Management System(CMS).
- Students can submit multiple files types, type in a textbox to submit their assignments, or submit links to their work in the cloud or other web related service such as Google Docs.
- Students can also submit assignments through district email or the messaging service in the district CMS.
- The district CMS contains many tools instructors can use to facilitate different assignment types.
- Instructors may use the assignments tool and / or discussion tool to facilitate student to student interaction.
- Instructors may use the feedback features of the district CMS to facilitate instructor - initiated contact.
- When appropriate, instructors may use group assignments.

Possible tools employed to adjust for ERT / DE course may include, but not limited to:

- District CMS assignments
- Threaded discussion forums
- District Email
- District CMS messaging service
- Announcements in the district CMS

- Feedback of student work through use of Speed Grader or other tools
- Synchronous audio / videoconferencing(Zoom, Cranium Café)
- Interactive mobile technologies
- Chat, text, Twitter
- Telephone
- Virtual offices hours
- Other: None

Adjustments to Evaluation Tools

- ERT/DE courses allow for multiple evaluation tools with online technology.
- This course will be able to use interactive quizzes which allow for automated assessment performance for certain question types and the use of the mastery gradebook.
- If the assessment requires necessary student authentication, the instructor can employ machine automated proctoring services available through the current district CMS.
- Use of these features (quizzes, discussions, and assignments) provide the necessary tools to evaluate student progress toward the objectives of the course.

Strategies to Make Course Accessible to Disabled Students

All courses must meet the WCAG 2.0 level AA standards including but not limited to the items listed below:

1. Images, graphs, charts or animation. A text equivalent or alt text is provided for every non-text element, including all types of images and animated objects. This will enable a screen reader to read the text equivalent to a blind student.
2. Multimedia. Equivalent alternatives for any multimedia presentation are synchronized with the presentation. Videos and live audio must be closed captioned. For archived audio, a transcript maybe sufficient.
3. Documents and other learning materials. PDFs, Microsoft Word documents, PowerPoint presentations, Adobe Flash and other content must be as accessible as possible. If it cannot be made accessible, consider using HTML or, if no other option is available, provide an accessible alternative. PDF documents must be properly tagged for accessibility.
4. Timed quizzes/exams. Extended time on quizzes and exams is one of the most common accommodations. Instructions for extending time in Canvas.
5. Outside webpages and links
6. Ensure that all webpages meet 508 standards by testing through Cynthia Says. Follow the Accessibility Guidelines WCAG 2.0 Level AA
7. Ensure links make sense out of context. Every link should make sense if the link text is read by itself. Screen reader users may choose to read only the links on a web page. Certain phrases like "click here" and "more" must be avoided.
8. Applications, software, and outside learning systems. All required outside applications and/or learning systems (e.g MyMathLab, Aleks, etc.) are accessible OR an alternative is provided. Test with WebAIM WAVE toolbar.
9. Avoid text images. Images of text are avoided, OR an alternative is provided. (Examples of images of text are PDFs made from scanned pages, and word art.)
10. Color contrast. Text and background color have sufficient contrast on all documents, PowerPoints, and webpages both inside and outside of the LMS.
11. Text objects. If the shape, color, or styling of any text object conveys information, that information is conveyed in plain text as well.
12. Disability statement. The course syllabus contains the college's suggested Disability Statement as well as current information on the location and contact information for the Learning Assistance Program (LAP).

Inform Students

Email, ConnexEd, Zoom.

Additional Comments

N/A

Generated on: 3/21/2022 1:12:52 PM

Board Approval: 02/29/1968

PCA Established:

DL Conversion:

Date Reviewed: Spring 2021

Catalog Year: 2022 - 2023

Allan Hancock College

Course Outline

Discipline Placement: Drafting

Department: Industrial Technology

Prefix and Number: ARCH 121

Catalog Course Title: Architectural Practice 1

Banner Course Title: Architectural Practice 1

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	2.000	32.0 - 36.0	
Lab	6.000	96.0 - 108.0	
Outside-of-Class Hours	4.000	64.0 - 72.0	
Total Student Learning Hours	12.0	192.0 - 216.0	4.0
Total Contact Hours	8.0	128.0 - 144.0	

Number of Times Course may be Repeated

None

Grading Method

Letter Grade or Pass/No Pass

Requisites

None

Entrance Skills

None

Catalog Description

A continuation of construction materials and methods with an emphasis on the selection of appropriate structural systems and the application of relevant codes and regulations including life-safety and accessibility standards. Covered also is the production of technically clear drawings utilizing Building Information Modeling (BIM) software; Revit Architecture, and drafting software; AutoCAD.

Course Content

Lecture

- Introduction to Revit and AutoCAD
- Site Planning
- Foundation Systems
- Floor Plans
- Framing Methods and Plans
- Roof Plans
- Wall Sections and Details
- Roof Framing
- General Sections
- Elevations
- Room Finish Schedule
- Door and Window Schedules
- Specification Brief

Lab

- Site Planning
- Foundation Systems
- Floor Plans
- Framing Methods and Plans
- Roof Plans
- Wall Sections and Details
- Roof Framing
- General Sections
- Elevations
- Room Finish Schedule
- Door and Window Schedules
- Specification Brief

Course Objectives

At the end of the course, the student will be able to:

1. make technically clear digital drawings, prepare outline specifications, and construct digital and/or physical models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
2. select and apply the appropriate structural system to a specific project of low complexity.
3. design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards.
4. understand the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, and durability.

Methods of Instruction

- **Demonstration**
The course covers the application of building information modeling (BIM) to the design and construction of a small scale building.
- **Lab**
Students will practice the application of (BIM) in generating construction documents for a residential and/or a small scale commercial project.
- **Lecture**
Lectures will cover various topics in the design and construction process.

Assignments

- **Other Assignments**
 1. Visit the website of your local building department, and obtain a copy of the required nailing schedule for common roof, wall, and floor connections.
- **Outside Assignments**

1. Visit a lumberyard (not a big box store) in your area and get the price of 2x6 through 2x14 lumber per foot based on standard framing lumber species for your area. 2. Contact a steel framing company, and get enough information to write a report about the benefits and problems in framing a home with steel framing members in your area.

- **Sample Assignment(s)**

1. Describe three ways architectural design functions are improved with a CADD and BIM system.

Methods of Evaluation

- Exams/Tests
- Projects
- Group Projects
- Lab Activities
- Other

1. Laboratory drawing assignments
2. Project notebook and specification brief
3. Midterm test
4. Final examination
5. Design integration

Texts and Other Instructional Materials

Adopted Textbook

1. Jefferis, Allan., D. Madsen *Architectural Drafting & Design* Edition: 7th 2016
2. Ching, F *Building Construction Illustrated* Edition: 6th 2020
3. Stine, D *Residential Design Using Autodesk Revit Architecture 2021* Edition: N/A 2020

Supplemental Texts

None

Instructional Materials

None

Student Learning Outcomes

1. ARCH121 SLO1 - Understand and apply the principles of architectural drafting and design to a specific project of low complexity.
 2. ARCH121 SLO2 - Understand and document the process involved in the design and development of construction documents.
 3. ARCH121 SLO3 - Generate architectural details both in sketch and drafted format.
 4. ARCH121 SLO4 - Apply building code requirements to a simple architectural project.
 5. ARCH121 SLO5 - Demonstrate proficiency in developing architectural plans.
-

Distance Education

Delivery Methods

- ERT

Instructor Initiated Contact Hours Per Week: 8.000

Contact Types

1. Email Communication (group and/or individual communications)
As needed.
2. Other (please specify)
Emergency Remote Teaching (ERT) in synchronous class meetings.

Adjustments to Assignments

Instructors may employ a variety of online tools to make the necessary adjustments in an ERT/ DE setting for

this course.

- Assignments will be submitted primarily through the district Course Management System(CMS).
- Students can submit multiple files types, type in a textbox to submit their assignments, or submit links to their work in the cloud or other web related service such as Google Docs.
- Students can also submit assignments through district email or the messaging service in the district CMS.
- The district CMS contains many tools instructors can use to facilitate different assignment types.
- Instructors may use the assignments tool and / or discussion tool to facilitate student to student interaction.
- Instructors may use the feedback features of the district CMS to facilitate instructor - initiated contact.
- When appropriate, instructors may use group assignments.

Possible tools employed to adjust for ERT / DE course may include, but not limited to:

- District CMS assignments
- Threaded discussion forums
- District Email
- District CMS messaging service
- Announcements in the district CMS
- Feedback of student work through use of Speed Grader or other tools
- Synchronous audio / videoconferencing(Zoom, Cranium Café)
- Interactive mobile technologies
- Chat, text, Twitter
- Telephone
- Virtual offices hours
- Other: None

Adjustments to Evaluation Tools

- ERT/DE courses allow for multiple evaluation tools with online technology.
- This course will be able to use interactive quizzes which allow for automated assessment performance for certain question types and the use of the mastery gradebook.
- If the assessment requires necessary student authentication, the instructor can employ machine automated proctoring services available through the current district CMS.
- Use of these features (quizzes, discussions, and assignments) provide the necessary tools to evaluate student progress toward the objectives of the course.

Strategies to Make Course Accessible to Disabled Students

All courses must meet the WCAG 2.0 level AA standards including but not limited to the items listed below:

1. Images, graphs, charts or animation. A text equivalent or alt text is provided for every non-text element, including all types of images and animated objects. This will enable a screen reader to read the text equivalent to a blind student.
2. Multimedia. Equivalent alternatives for any multimedia presentation are synchronized with the presentation. Videos and live audio must be closed captioned. For archived audio, a transcript maybe sufficient.
3. Documents and other learning materials. PDFs, Microsoft Word documents, PowerPoint presentations, Adobe Flash and other content must be as accessible as possible. If it cannot be made accessible, consider using HTML or, if no other option is available, provide an accessible alternative. PDF documents must be properly tagged for accessibility.
4. Timed quizzes/exams. Extended time on quizzes and exams is one of the most common accommodations. Instructions for extending time in Canvas.
5. Outside webpages and links
6. Ensure that all webpages meet 508 standards by testing through Cynthia Says. Follow the Accessibility Guidelines WCAG 2.0 Level AA
7. Ensure links make sense out of context. Every link should make sense if the link text is read by itself. Screen reader users may choose to read only the links on a web page. Certain phrases like "click here" and "more" must be avoided.
8. Applications, software, and outside learning systems. All required outside applications and/or learning systems (e.g MyMathLab, Aleks, etc.) are accessible OR an alternative is provided. Test with WebAIM WAVE toolbar.
9. Avoid text images. Images of text are avoided, OR an alternative is provided. (Examples of images of text are PDFs made from scanned pages, and word art.)
10. Color contrast. Text and background color have sufficient contrast on all documents, PowerPoints, and webpages both inside and outside of the LMS.

11. Text objects. If the shape, color, or styling of any text object conveys information, that information is conveyed in plain text as well.
12. Disability statement. The course syllabus contains the college's suggested Disability Statement as well as current information on the location and contact information for the Learning Assistance Program (LAP).

Inform Students

Canvas, email, and Zoom contact

Additional Comments

N/A

Generated on: 1/21/2022 11:13:51 AM

Board Approval: 02/29/1968
 PCA Established:
 DL Conversion:
 Date Reviewed: Fall 2020
 Catalog Year: 2020 - 2021

Allan Hancock College Course Outline

Discipline Placement: Architecture
Department: Industrial Technology
Prefix and Number: ARCH 122
Catalog Course Title: Architectural Drawing 2
Banner Course Title: Architectural Drawing 2

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	2.000	32.0 - 36.0	
Lab	6.000	96.0 - 108.0	
Outside-of-Class Hours	4.000	64.0 - 72.0	
Total Student Learning Hours	12.0	192.0 - 216.0	4.0
Total Contact Hours	8.0	128.0 - 144.0	

Number of Times Course may be Repeated
 None

Grading Method
 Letter Grade or Pass/No Pass

Requisites

None

Entrance Skills

None

Catalog Description

The second course in a two-semester sequence that prepares the student to enter the construction field as a drafter. Emphasizes the planning and development of a set of residential plans that may be submitted for plan check approval. The second semester covers structural details, energy, and mechanical requirements, and a study of fire resistive materials and finishes.

Course Content

Lecture

1. Foundation Details
2. Floor Framing Details

3. Roof Framing Details
 4. Masonry Wall Details
 5. Steel Framing Details
 6. Roof Details
 7. General Wall Section
 8. Base Details
 9. Stair and Ramp Details
 10. Bathroom Details
 11. Kitchen Details
 12. Cabinet Schedule and Details
 13. Fastener Schedule
 14. Specification Brief
-

Course Objectives

At the end of the course, the student will be able to:

1. identify potential or active hazards that may be in the building environment, and detail buildings in a way that will eliminate these barriers to the handicapped.
 2. identify the areas that require architectural detailing.
 3. draw the necessary details that will inform constructors the proper way to join materials.
 4. draw the necessary structural details that will result in a seismic resistant structure.
 5. identify fire hazards and draw details that will result in fire resistant structures.
-

Methods of Instruction

- Lab
 - Lecture
-

Assignments

- **Outside Assignments**
 1. Draw a thicken slab detailed section.
 2. Draw a tee footing detailed section.
 3. Draw a grade beam detailed section.
 4. From a given floor plan, identify and draw the detailed sections required to show how a timber framed floor is constructed.
 5. From a given roof plan, identify and draw the detailed sections required to show how a timber framed roof would be built to resist seismic, wind, and gravity forces.
 6. Write a specification brief that will identify and direct the correct installation of ceramic tile.
-

Methods of Evaluation

1. Graded laboratory drawing assignments (50%)
 2. A complete project notebook and specification (20%) brief of materials used.
 3. A midterm test (5%)
 4. A final examination (25%)
-

Texts and Other Instructional Materials

Adopted Textbook

None

Supplemental Texts

1. The Uniform Building Code Standards.
2. Architectural Graphic Standards.
3. Ellison & Mickadeit. Building Construction.
4. Luno & Wakita. Architectural Detailing.
5. The Uniform Building Code
6. Drafting materials - pencils, erasers, adjustable triangle, parallel rule, brush, paper, templates, calculators.

Instructional Materials

None

Student Learning Outcomes

1. ARCH122 SLO1 - Understand and apply the principles of architectural drafting and design to a specific project of low complexity.
2. ARCH122 SLO2 - Understand and document the process involved in the design and development of construction documents.
3. ARCH122 SLO3 - Generate architectural details both in sketch and drafted format.
4. ARCH122 SLO4 - Apply building code requirements to a simple architectural project.
5. ARCH122 SLO5 - Demonstrate proficiency in developing architectural plans.

Distance Education

Delivery Methods

- ERT
- Other
Emergency remote teaching (ERT) using ConexEd and Zoom.

Instructor Initiated Contact Hours Per Week: 8.000

Contact Types

1. Other (please specify)
Emergency Remote Teaching (ERT) in synchronous class meetings using audiovisual conferencing platform. Interactive mobile technologies (Chat, text, twitter, etc.)
2. Labs
3. Email Communication (group and/or individual communications)
4. Discussion Board

Adjustments to Assignments

Instructors may employ a variety of online tools to make the necessary adjustments in an ERT/ DE setting for this course.

- Assignments will be submitted primarily through the district Course Management System(CMS).
- Students can submit multiple files types, type in a textbox to submit their assignments, or submit links to their work in the cloud or other web related service such as Google Docs.
- Students can also submit assignments through district email or the messaging service in the district CMS.
- The district CMS contains many tools instructors can use to facilitate different assignment types.
- Instructors may use the assignments tool and / or discussion tool to facilitate student to student interaction.
- Instructors may use the feedback features of the district CMS to facilitate instructor - initiated contact.
- When appropriate, instructors may use group assignments.

Possible tools employed to adjust for ERT / DE course may include, but not limited to:

- District CMS assignments
- Threaded discussion forums
- District Email
- District CMS messaging service
- Announcements in the district CMS
- Feedback of student work through use of Speed Grader or other tools
- Synchronous audio / videoconferencing(Zoom, Cranium Café)
- Interactive mobile technologies
- Chat, text, Twitter
- Telephone
- Virtual offices hours
- Other: None

Adjustments to Evaluation Tools

- ERT/DE courses allow for multiple evaluation tools with online technology.
- This course will be able to use interactive quizzes which allow for automated assessment performance for certain question types and the use of the mastery gradebook.

- If the assessment requires necessary student authentication, the instructor can employ machine automated proctoring services available through the current district CMS.
- Use of these features (quizzes, discussions, and assignments) provide the necessary tools to evaluate student progress toward the objectives of the course.

Strategies to Make Course Accessible to Disabled Students

All courses must meet the WCAG 2.0 level AA standards including but not limited to the items listed below:

1. Images, graphs, charts or animation. A text equivalent or alt text is provided for every non-text element, including all types of images and animated objects. This will enable a screen reader to read the text equivalent to a blind student.
2. Multimedia. Equivalent alternatives for any multimedia presentation are synchronized with the presentation. Videos and live audio must be closed captioned. For archived audio, a transcript maybe sufficient.
3. Documents and other learning materials. PDFs, Microsoft Word documents, PowerPoint presentations, Adobe Flash and other content must be as accessible as possible. If it cannot be made accessible, consider using HTML or, if no other option is available, provide an accessible alternative. PDF documents must be properly tagged for accessibility.
4. Timed quizzes/exams. Extended time on quizzes and exams is one of the most common accommodations. Instructions for extending time in Canvas.
5. Outside webpages and links
6. Ensure that all webpages meet 508 standards by testing through Cynthia Says. Follow the Accessibility Guidelines WCAG 2.0 Level AA
7. Ensure links make sense out of context. Every link should make sense if the link text is read by itself. Screen reader users may choose to read only the links on a web page. Certain phrases like "click here" and "more" must be avoided.
8. Applications, software, and outside learning systems. All required outside applications and/or learning systems (e.g MyMathLab, Aleks, etc.) are accessible OR an alternative is provided. Test with WebAIM WAVE toolbar.
9. Avoid text images. Images of text are avoided, OR an alternative is provided. (Examples of images of text are PDFs made from scanned pages, and word art.)
10. Color contrast. Text and background color have sufficient contrast on all documents, PowerPoints, and webpages both inside and outside of the LMS.
11. Text objects. If the shape, color, or styling of any text object conveys information, that information is conveyed in plain text as well.
12. Disability statement. The course syllabus contains the college's suggested Disability Statement as well as current information on the location and contact information for the Learning Assistance Program (LAP).

Inform Students

Email, phone, text, and direct contact during ERT class sessions.

Additional Comments

None

Generated on: 3/21/2022 1:08:48 PM

Board Approval: 03/21/1989
PCA Established: 03/21/1989
DL Conversion:
Date Reviewed: Spring 2016
Catalog Year: -

Allan Hancock College Course Outline

Discipline Placement: Architecture
Department: Industrial Technology
Prefix and Number: ARCH 131
Catalog Course Title: Building Construction Materials & Methods
Banner Course Title: Bldg Constr Materials/Methods

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	3.000	48.0 - 54.0	
Lab	0.000	0.0 - 0.0	
Outside-of-Class Hours	-	-	
Total Student Learning Hours	3.0	48.0 - 54.0	3.0
Total Contact Hours	3.0	48.0 - 54.0	

Number of Times Course may be Repeated
None

Grading Method
Letter Grade or Pass/No Pass

Requisites

None

Entrance Skills

Entrance Skills Other (Legacy)

None

Catalog Description

An introduction to building construction materials and systems plus the basic principles utilized in the appropriate selection of materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.

Course Content

Lecture

- An Overview of the Building Delivery Process
 - Construction Regulations and Standards
 - Soils and Excavations
 - Foundation Systems
 - Floor Systems
 - Wall Systems
 - Roof Systems
 - Moisture and Thermal Protection
 - Doors and Windows
 - Finish Work
-

Course Objectives

At the end of the course, the student will be able to:

1. Identify the basic principles utilized in the appropriate selection of materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.
 2. Gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
 3. Examine and comprehend the materials and construction methods present in relevant precedents and make choices regarding the incorporation of such principles into architecture design projects.
 4. Integrate appropriate construction materials and systems into a design project.
 5. Participate in a positive co-operative group learning environment.
-

Methods of Instruction

- Discussion
 - Field Trips
 - Lab
 - Lecture
-

Assignments

- **Other Assignments**
Using a sketch, show the typical detail of anchorage of a sill plate to the foundation.
 - **Outside Assignments**
Contact a steel framing company, and get enough information to write a report about the benefits and problems in framing a home with steel framing members in your area.
 - **Sample Assignment(s)**
Sketch in elevation the typical arrangement of studs around a wall opening. Name all the important framing members.
-

Methods of Evaluation

- Exams/Tests
 - Quizzes
 - Research Projects
 - Portfolios
 - Class Participation
 - Lab Activities
-

Texts and Other Instructional Materials

Adopted Textbook

1. Metha, M., W. Scarborough, D. Armpriest *Building Construction:Principles, Materials, and Systems* Edition: 3 2017
2. Ching, F *Building Construction Illustrated* Edition: 5 2014

Supplemental Texts

1. Notebook

Instructional Materials

None

Student Learning Outcomes

1. ARCH131 SLO1 - Recognize various components, materials, types and methods of building construction.
 2. ARCH131 SLO2 - Converse using construction language and vocabulary in an articulate manner.
 3. ARCH131 SLO3 - Recognize, identify and compare various building systems of concrete, masonry, steel and wood.
 4. ARCH 131 SLO4 - Organize classroom lectures into a notebook/sketchbook.
 5. ARCH131 SLO5 - Participate in a positive co-operative group learning environment.
 6. ARCH131 SLO6 - Produce wall sections and other details of concrete, masonry, steel and wood building systems.
 7. ARCH131 SLO7 - Recognize how a building's envelop, interior and mechanical systems are integrated into the structural framework.
-

Distance Education

This course is not Distance Learning.

Generated on: 1/21/2022 11:10:44 AM

Board Approval: 12/11/2012
 PCA Established:
 DL Conversion:
 Date Reviewed: Spring 2016
 Catalog Year: -

Allan Hancock College Course Outline

Discipline Placement: Architecture
Department: Industrial Technology
Prefix and Number: ARCH 151
Catalog Course Title: Architectural Design Studio I
Banner Course Title: Architectural Design Studio I

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	3.000	48.0 - 54.0	
Lab	6.000	96.0 - 108.0	
Outside-of-Class Hours	-	-	
Total Student Learning Hours	9.0	144.0 - 162.0	5.0
Total Contact Hours	9.0	144.0 - 162.0	

Number of Times Course may be Repeated
 None

Grading Method
 Letter Grade or Pass/No Pass

Requisites

Prerequisite
 ARCH 111 Architectural Graphics & Design I

Advisories
 ARCH 112 Architectural Graphics & Design II

Entrance Skills

Upon entering this course, the student should be able to:

ARCH 111 - Architectural Graphics & Design I

- produce hand lettering that has good form, consistency, alignment and legibility
- utilize a range of media, tools, techniques and pictorial systems to represent existing and imagined objects and environments on two dimensional surfaces and in three-dimensional models.
- incorporate people and landscape into orthographic, paraline and perspective drawings to animate, give scale and enhance the illusion of form and depth
- apply basic organizational, spatial, structural, and constructional principles to the conception and development of interior and exterior spaces, building elements, and components.

- speak and write effectively on basic architectural design principles and other course topics.

ARCH 112 - Architectural Graphics & Design II

- meet the objectives of ARCH 111 with increased competency and understanding.
- employ a variety of graphic and/or digital media to represent and communicate ideas and concepts.
- analyze a published work of architecture and identify and present its formal qualities through drawings, photos and words.
- analyze a simple/intermediate building program and represent its spatial and relational requirements with diagrams, sketches and/or digitally.

Entrance Skills Other (Legacy)

1. produce hand lettering that has good form, consistency, alignment, and legibility.
2. utilize a range of media, tools, techniques, and pictorial systems to represent existing and imagined objects and environments on two-dimensional surfaces and in three-dimensional models.
3. incorporate people and landscape into orthographic, paraline, and perspective drawings to animate, give scale, and enhance the illusion of form and depth.
4. apply basic organizational, spatial, structural, and constructional principles to the conception and development of interior and exterior spaces, building elements, and components.
5. speak and write effectively on basic architectural design principles and other course topics.

Catalog Description

A continued and refined study begun in ARCH 111 & 112 of design principles and processes. Environmental and visual phenomena such as architectural form, function, context, and daylighting are studied through intermediate level design problems.

Course Content

Lecture

1. Site Planning and System Selection & Integration
2. Building Type Case Studies
3. Intermediate Level Schematic Design Techniques
4. Intermediate Level Design Development Techniques
5. Intermediate Level Final Presentation Techniques
6. Intermediate Level Model Making Techniques
7. Jury Critiques of Projects and Re-submittals

Course Objectives

At the end of the course, the student will be able to:

1. develop a functional plan layout for an intermediate level architectural program.
2. develop a design solution that uses appropriate materials and structural systems.
3. analyze and document a significant work of architecture (precedent) through the case study process.
4. produce accurate and complete presentation drawings to depict an intermediate level architectural design.
5. perform site analysis and propose solutions in relation to site characteristics.

Methods of Instruction

- Critique
- Lab
- Lecture
- **Methods of Instruction Description:**
Drawing and model making Student Presentations



Assignments

- **Other Assignments**

1) Prepare a building type case study for the building assigned. 2) Read the handout provided by the instructor (or from the textbook) and take the attached quiz. Sample Written Assignment: Research the building assigned to you by the instructor. Analyze the building in terms of the criteria given to you by the instructor. Illustrate your presentation with photos and plans that clarify and support your text.

Methods of Evaluation

- **Quizzes**
- **Oral Presentation**
- **Writing Requirements**
- **Other**

1) Regular textbook and/or handout quizzes graded on content and accuracy. 2) Written assignments graded on content, accuracy, and applied technique. 3) Problem solving demonstrations such as designing an intermediate level architectural design, graded on fidelity to program. 4) Oral demonstrations such as presenting designs to a jury, graded on content, accuracy and applied technique.

Texts and Other Instructional Materials

Adopted Textbook

1. Ramsey, Charles, George *ARCHITECTURAL GRAPHICS STANDARDS, STUDENT EDITION 2008*

Supplemental Texts

1. De Chiara, Joseph, *TIME SAVER STANDARDS FOR BUILDING TYPES*, McGraw – Hill, 2001.

Instructional Materials

None

Student Learning Outcomes

1. ARCH151 SLO1 - Research, analyze and identify basic concepts from architectural precedent.
 2. ARCH151 SLO2 - Solve intermediate level architectural design problems using a systematic method.
 3. ARCH151 SLO3 - Develop architectural design concepts based on pre-existing site context.
 4. ARCH151 SLO4 - Apply spatial, structural and constructional principles when designing architectural space, elements and components.
 5. ARCH151 SLO5 - Participate in a positive, co-operative group learning environment.
 6. ARCH151 SLO6 - Function as a junior designer in an architectural office..
-

Distance Education

This course is not Distance Learning.

Generated on: 2/14/2022 5:25:38 PM



Board Approval: 12/11/2012
 PCA Established:
 DL Conversion:
 Date Reviewed: Spring 2016
 Catalog Year: -

Allan Hancock College Course Outline

Discipline Placement: Architecture
Department: Industrial Technology
Prefix and Number: ARCH 152
Catalog Course Title: Architectural Design Studio II
Banner Course Title: Architectural Design Studio II

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	3.000	48.0 - 54.0	
Lab	6.000	96.0 - 108.0	
Outside-of-Class Hours	-	-	
Total Student Learning Hours	9.0	144.0 - 162.0	5.0
Total Contact Hours	9.0	144.0 - 162.0	

Number of Times Course may be Repeated

None

Grading Method

Letter Grade or Pass/No Pass

Requisites

Prerequisite

ARCH 151 Architectural Design Studio I

Entrance Skills

Upon entering this course, the student should be able to:

ARCH 151 - Architectural Design Studio I

- develop a functional plan layout for an intermediate level architectural program.
- develop a design solution that uses appropriate materials and structural systems.
- analyze and document a significant work of architecture (precedent) through the case study process.
- produce accurate and complete presentation drawings to depict an intermediate level architectural design.
- perform site analysis and propose solutions in relation to site characteristics.

Entrance Skills Other (Legacy)

1. develop a functional plan layout for an intermediate level architectural program.
2. develop a design solution that uses appropriate materials and structural systems.

3. analyze and document a significant work of architecture (precedent) through the case study process.
 4. produce accurate and complete presentation drawings to depict an intermediate level architectural design.
 5. perform site analysis and propose solutions in relationship to site characteristics.
-

Catalog Description

A continuation of the study of design principles and processes. Projects of an advanced level are assigned in which students have the opportunity to design complex, multi-use, multi-story buildings. Case studies are performed of specific building types before the design process begins.

Course Content

Lecture

1. Urban Site Planning & Advanced System Selection & Integration
 2. Building Type Case Studies
 3. Advanced Level Schematic Design Techniques
 4. Advanced Level Design Development Techniques
 5. Advanced Level Final Presentation Techniques
 6. Advanced Level Model Making Techniques
 7. Jury Critiques of Projects and Re-submittals
-

Course Objectives

At the end of the course, the student will be able to:

1. develop a functional plan/section layout for an advanced level architectural program.
 2. develop a design solution that uses appropriate, integrated, architectural systems for a multi-use, multi-story building.
 3. research an existing, complex building and produce a detailed, digital, 3-d model or physical model of that building.
 4. produce accurate and complete presentation drawings to depict an advanced level architectural design.
 5. perform site analysis and propose solutions in relation to site characteristics for a complex urban area.
-

Methods of Instruction

- Critique
 - Lab
 - Lecture
 - **Methods of Instruction Description:**
Drawings and model making, Student presentations
-

Assignments

- **Other Assignments**
 - 1) Prepare a building type case study for an advanced building design. 2) Read the handout provided by the instructor (or from the textbook) and take the attached quiz. Sample Written Assignment: Research the advanced building assigned to you by the instructor. Analyze the building in terms of the criteria given to you by the instructor. Illustrate your presentation with photos and plans that clarify and support your text.
-

Methods of Evaluation

- **Oral Presentation**
- **Other**
 - 1) Model making demonstration such as a detailed digital and/or physical models graded on accuracy and applied technique. 2) Problem solving demonstrations, such as designing an advanced level architectural design, graded on fidelity to program. 3) Oral demonstrations such as presenting designs to a jury, graded on content, accuracy and applied technique.

Texts and Other Instructional Materials

Adopted Textbook

1. Ramsey, Charles, George *ARCHITECTURAL GRAPHIC STANDARDS, STUDENT EDITION* 2008

Supplemental Texts

1. De Chiara, Joseph, *TIME SAVER STANDARDS FOR BUILDING TYPES*, Mc-Graw-Hill, 2001.

Instructional Materials

None

Student Learning Outcomes

1. ARCH152 SLO1 - Research, analyze and identify advanced concepts from architectural precedent.
 2. ARCH152 SLO2 - Solve advanced level architectural design problems using a systematic method.
 3. ARCH152 SLO3 - Develop architectural design concepts based on complex, pre-existing site context.
 4. ARCH152 SLO4 - Apply spatial, structural and constructional principles when designing complex architectural spaces, elements and components.
 5. ARCH152 SLO5 - Participate in a positive co-operative group learning environment.
-

Distance Education

This course is not Distance Learning.

Generated on: 2/14/2022 5:23:23 PM



Board Approval: 04/20/1999

PCA Established:

DL Conversion:

Date Reviewed: Spring 2021

Catalog Year: 2022 - 2023

Allan Hancock College

Course Outline

Discipline Placement: Architecture
Department: Industrial Technology**Prefix and Number:** ARCH 321**Catalog Course Title:** California Building Code**Banner Course Title:** California Building Code

Units and Hours

	Hours per Week	Total Hours per Term (Based on 16-18 Weeks)	Total Units
Lecture	3.000	48.0 - 54.0	
Lab	0.000	0.0 - 0.0	
Outside-of-Class Hours	6.000	96.0 - 108.0	
Total Student Learning Hours	9.0	144.0 - 162.0	3.0
Total Contact Hours	3.0	48.0 - 54.0	

Number of Times Course may be Repeated

None

Grading Method

Letter Grade or Pass/No Pass

Requisites

None

Entrance Skills

None

Catalog Description

Introduces the student to the purpose and use of the California Building Code (CBC), and prepares the student to make design and job site judgments based on the Code.

Course Content

Lecture

1. Administrative
 - a. title, purpose, scope and general
 - b. organization and enforcement

- c. permits and inspections
 - 2. Definitions and Abbreviations
 - 3. Requirements Based on Occupancy
 - a. classification of all buildings by use or occupancy and general requirements for all occupancies
 - b. group A occupancies
 - c. group B occupancies
 - d. group E occupancies
 - e. group H occupancies
 - f. group I occupancies
 - g. group M occupancies
 - h. group R occupancies
 - 4. Requirement Based on Types of Construction
 - a. classification of all buildings by types of construction and general requirements
 - b. type I fire-resistive buildings
 - c. type II buildings
 - d. type III buildings
 - e. type IV buildings
 - f. type V buildings
 - 5. Engineering Regulations - Quality and Design of Materials of Construction
 - a. general design requirements
 - b. masonry
 - c. wood
 - d. concrete
 - e. steel
 - f. aluminum
 - 6. Detailed Regulations
 - a. excavations, foundations and retaining walls
 - b. veneer
 - c. roof construction and covering
 - d. exits
 - e. skylights
 - f. sounds transmission control
 - g. penthouses and roof structures
 - h. masonry of concrete chimneys, fireplaces and barbecues
 - i. fire-extinguishing systems
 - j. stages and platforms
 - k. motion picture projection rooms
 - 7. Fire-Resistive Standards for Fire Protection
 - a. interior wall and ceiling finish
 - b. fire-resistive standards
 - 8. Regulations for use of Public Streets and Projections Over Public Property
 - a. protection of pedestrians during construction or demolition
 - b. permanent occupancy of public property
 - 9. Wall and Ceiling Coverings/Installation of Wall and Ceiling Coverings
 - 10. Special Subjects
 - a. cellulose nitrate
 - b. prefabricated
 - c. elevators, dumbwaiters, escalators and moving walks
 - d. light-transmitting plastic
 - e. glass and glazing
 - 11. International Building Code Standards
 - 12. International Building Code Appendixes
-

Course Objectives

At the end of the course, the student will be able to:

1. Administer the CBC.
2. Determine design and construction requirements based on occupancy, use, location on property, allowable floor areas, allowable area increases, maximum height of buildings, fire-resistive substitution, sanitation and handicap access.
3. Interpret the terms of the CBC.

4. Use the CBC to identify specific occupancy classifications.
 5. Identify the basic types of construction.
 6. Find and apply, exiting, fire-resistive standards, CBC standards and the appendixes to various occupancies and types of construction.
-

Methods of Instruction

- **Lecture**
-

Assignments

- **Outside Assignments**

Directed outside reading and study from the California Building Code and Study Companion. Weekly homework.

Methods of Evaluation

- **Exams/Tests**
- **Class Participation**
- **Home Work**
- **Other**

Evaluation is based on weekly homework and final exam. Sample Question: Cite the code section(s) that pertain to the nailing schedule and discuss why the edge spacing of nails differs from the field spacing.

Texts and Other Instructional Materials

Adopted Textbook

1. International Code Council (ICC) *2019 California Building Code, Title 24, Part 2 (Volumes 1 & 2) 2018*

Supplemental Texts

None

Instructional Materials

1. Notebook, calculator, etc.
-

Student Learning Outcomes

1. ARCH321 SLO1 - Become familiar with the latest California building code requirements and be able to make job site judgments based on the code.
 2. ARCH321 SLO2 - Be able to navigate the CBC.
 3. ARCH321 SLO3 - Apply selective CBC provisions to a specific project.
 4. ARCH321 SLO4 - Apply the prescriptive method of the CBC to a specific project
-

Distance Education

Delivery Methods

- ERT

Instructor Initiated Contact Hours Per Week: 3.000

Contact Types

1. Other (please specify)

Emergency Remote Teaching (ERT) in synchronous class meetings

Adjustments to Assignments

Instructors may employ a variety of online tools to make the necessary adjustments in an ERT/ DE setting for this course.

- Assignments will be submitted primarily through the district Course Management System(CMS).
- Students can submit multiple files types, type in a textbox to submit their assignments, or submit links to their work in the cloud or other web related service such as Google Docs.
- Students can also submit assignments through district email or the messaging service in the district CMS.
- The district CMS contains many tools instructors can use to facilitate different assignment types.
- Instructors may use the assignments tool and / or discussion tool to facilitate student to student interaction.
- Instructors may use the feedback features of the district CMS to facilitate instructor - initiated contact.
- When appropriate, instructors may use group assignments.

Possible tools employed to adjust for ERT / DE course may include, but not limited to:

- District CMS assignments
- Threaded discussion forums
- District Email
- District CMS messaging service
- Announcements in the district CMS
- Feedback of student work through use of Speed Grader or other tools
- Synchronous audio / videoconferencing(Zoom, Cranium Café)
- Interactive mobile technologies
- Chat, text, Twitter
- Telephone
- Virtual offices hours
- Other: None

Adjustments to Evaluation Tools

- ERT/DE courses allow for multiple evaluation tools with online technology.
- This course will be able to use interactive quizzes which allow for automated assessment performance for certain question types and the use of the mastery gradebook.
- If the assessment requires necessary student authentication, the instructor can employ machine automated proctoring services available through the current district CMS.
- Use of these features (quizzes, discussions, and assignments) provide the necessary tools to evaluate student progress toward the objectives of the course.

Strategies to Make Course Accessible to Disabled Students

All courses must meet the WCAG 2.0 level AA standards including but not limited to the items listed below:

1. Images, graphs, charts or animation. A text equivalent or alt text is provided for every non-text element, including all types of images and animated objects. This will enable a screen reader to read the text equivalent to a blind student.
2. Multimedia. Equivalent alternatives for any multimedia presentation are synchronized with the presentation. Videos and live audio must be closed captioned. For archived audio, a transcript maybe sufficient.
3. Documents and other learning materials. PDFs, Microsoft Word documents, PowerPoint presentations, Adobe Flash and other content must be as accessible as possible. If it cannot be made accessible, consider using HTML or, if no other option is available, provide an accessible alternative. PDF documents must be properly tagged for accessibility.
4. Timed quizzes/exams. Extended time on quizzes and exams is one of the most common accommodations. Instructions for extending time in Canvas.
5. Outside webpages and links
6. Ensure that all webpages meet 508 standards by testing through Cynthia Says. Follow the Accessibility Guidelines WCAG 2.0 Level AA

7. Ensure links make sense out of context. Every link should make sense if the link text is read by itself. Screen reader users may choose to read only the links on a web page. Certain phrases like "click here" and "more" must be avoided.
8. Applications, software, and outside learning systems. All required outside applications and/or learning systems (e.g MyMathLab, Aleks, etc.) are accessible OR an alternative is provided. Test with WebAIM WAVE toolbar.
9. Avoid text images. Images of text are avoided, OR an alternative is provided. (Examples of images of text are PDFs made from scanned pages, and word art.)
10. Color contrast. Text and background color have sufficient contrast on all documents, PowerPoints, and webpages both inside and outside of the LMS.
11. Text objects. If the shape, color, or styling of any text object conveys information, that information is conveyed in plain text as well.
12. Disability statement. The course syllabus contains the college's suggested Disability Statement as well as current information on the location and contact information for the Learning Assistance Program (LAP).

Inform Students

Email, ConnexEd, Zoom, Virtual Office Hours.

Additional Comments

N/A

Generated on: 3/21/2022 1:05:33 PM

Occupational Outlook, Drafters (U.S. Bureau of Labor Statistics)

Quick Facts: Drafters	
2020 Median Pay ?	\$57,960 per year \$27.87 per hour
Typical Entry-Level Education ?	Associate's degree
Work Experience in a Related Occupation ?	None
On-the-job Training ?	None
Number of Jobs, 2020 ?	191,800
Job Outlook, 2020-30 ?	-2% (Decline)
Employment Change, 2020-30 ?	-3,600

The table above shows a few facts about drafters. Overall employment of drafters is projected to decline 2 percent from 2020 to 2030. Despite declining employment, about 17,500 openings for drafters are projected each year (see table below), on average, over the decade. All those openings are expected to result from the need to replace workers who transfer to other occupations or exit the labor force, such as to retire.

Source: <https://www.bls.gov/ooh/architecture-and-engineering/drafters.htm#:~:text=in%20May%202020,-.Job%20Outlook,on%20average%2C%20over%20the%20decade>.

Employment projections data for drafters, 2020-30

Occupational Title	SOC Code	Employment, 2020	Projected Employment, 2030	Change, 2020-30	
				Percent	Numeric
Drafters	17-3010	191,800	188,200	-2	-3,600
Architectural and civil drafters	17-3011	99,900	99,000	-1	-900
Electrical and electronics drafters	17-3012	24,000	24,500	2	600
Mechanical drafters	17-3013	53,600	51,000	-5	-2,500
Drafters, all other	17-3019	14,400	13,600	-5	-800

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Summary Report for Architectural Drafters (O*NET OnLine)

In California

On average earn	\$62,350.
10% of workers earn	\$41,290 or less.
10% of workers earn	\$87,460 or more.

In the United States:

On average earn	\$57,500.
10% of workers earn	\$36,590 or less.
10% of workers earn	\$83,740 or more.

Wage information in Santa Maria-Santa Barbara, CA

Annual Low (10%)	Annual QL (25%)	Annual Median (50%)	Annual QU (75%)	Annual High (90%)
\$41,770	\$57,380	\$70,000	\$85,420	\$96,600

Source: Bureau of Labor Statistics 2020 wage data external site.

See: <https://www.onetonline.org/link/localwages/17-3011.00?st=CA&g=Go>

2018-2028 Occupational Employment Projections

Santa Maria-Santa Barbara Metropolitan Statistical Area

(Santa Barbara County)

SOC Level ^[1]	SOC Code ^[2]	Occupational Title	Base Year Employment Estimate 2018 ^{[3][4]}	Projected Year Employment Estimate 2028	Numeric Change 2018-2028 ^[5]	Percentage Change 2018-2028	Exits ^[6]	Transfers ^[7]	Total Job Openings ^[8]	Median Hourly Wages ^[9]	Median Annual Wages ^[9]	Entry Level Education ^{[10][11]}	Work Experience ^{[10][11]}	On-the-Job Training ^{[10][11]}
3	17-3000	Drafters, Engineering Technicians, and Mapping Technicians	1,100	1,220	120	10.9%	380	780	1,280	\$0.00	\$0	N/A	N/A	N/A
4	17-3011	Architectural and Civil Drafters	80	90	10	12.5%	30	60	100	\$30.62	\$63,687	Associate's degree	None	None
4	17-3022	Civil Engineering Technicians	60	70	10	16.7%	20	40	70	\$34.82	\$72,421	Associate's degree	None	None

Source: <https://www.labormarketinfo.edd.ca.gov/data/employment-projections.html>