

STATE BOARD FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION

TOPIC: Bachelor of Applied Science in Integrated Building Design (IBD)

PRESENTED BY: Colleen Simpson, EdD, President for Front Range Community College

RELATIONSHIP TO

THE STRATEGIC PLAN: Transform the student experience; create education without barriers through transformational partnerships; and refine our value proposition through accessibility, affordability, quality, accountability, resource development, and operational excellence.

EXPLANATION:

Pursuant to CCCS's role and mission (§23-60-201, C.R.S.), CCCS may offer technical, career, and workforce development Bachelor of Applied Science (BAS) degree programs. Authority for the Colorado Community College System to offer BAS degrees was made possible by SB14-004 (Community College Four-year Programs), signed by the Governor on February 27, 2014.

This proposal seeks approval from the State Board for Community Colleges and Occupational Education (SBCCOE) for a BAS degree in Integrated Building Design (BAS IBD) for Front Range Community College (FRCC). The legislative criteria for approval of a BAS degree are set forth below, with a summary of the supporting data demonstrating that the criteria have been met. Additional information is provided in the appendices.

1. Data demonstrate workforce and student demand for the degree program.

In the technical field of building design and construction, employers prefer a bachelor's degree. For example, LightCast national data indicates that 58.5% of employers require a bachelor's degree for Interior Designers. The community college system offers several AAS degrees within these fields yet only a handful of credits will transfer to 4-year partners. FRCC has developed a BAS in Integrated Building Design and has conducted extensive research to determine viability.

A student survey was sent to current students and alumni and 93 responses were collected. The responses revealed a positive outlook for student interest, motives for pursuing a BAS, training and skills desired from this degree and how they prefer to take classes, see [Appendix A](#). The IBD BAS Degree will serve four disciplines, Architectural Engineering Technician (AEC,) Computer Aided Drafting and Design (CAD,) Construction Technologies (CON,) and Interior Architecture and Design (IND.) Based on the responses from an Industry Survey and Advisory Board Letters of Support listed in [Appendix B](#), this new interdisciplinary BAS will prepare our design students for a competitive job market that demands a workforce willing to cross standard discipline lines. Attainment of this BAS will allow our graduates to qualify for positions that require a bachelor's degree, plan for progressive advancements in employment and earning potential, and gain equitable access to the profession through an affordable and relevant education.

An industry survey was sent to professionals and results indicate 73% of respondents prefer hiring someone with a bachelor's degree, 67% agreed that a bachelor's degree would be preferred for advancement in their company, 67% agreed on a differentiated earning potential, and 100% of the respondents supported our efforts to develop the degree. An IDB advisory board was convened with industry representatives from AEC, CAD, CON and IND. The representatives' feedback reinforced the need for this new, all-inclusive BAS and it was strongly supported by all. Letters of Support from many of these participants are found in [Appendix B](#).

Labor market data gathered from O*Net Online indicates bright forecasts for technical design fields. Wages range from \$62,400–\$67,350 depending on field of interest. LightCast data were gathered for five primary industries: AEC, CAD, CON, and IND. All fields project a positive projection for employment (6.2%-14.9% increases), livable wage data, and current educational attainment data indicating the need for a bachelor's degree. Data is summarized in the tables below and full reports are available in [Appendix C](#).

Table 1. LightCast 10-Year Employment Projections by SOC codes (2023 – 2033) – Combined SOC codes

	Colorado	FRCC 6 Counties	Denver Metro	National Average
AEC	13.2%	14.9%	13.8%	10.6%
CAD	5.9%	6.2%	5.5%	5.4%
CON	7.6%	9.1%	8.4%	9.2%
GIS	11.3%	13.0%	12.4%	13.2%
IND	6.6%	7.5%	7.6%	9%

Table 2. LightCast Educational Attainment of Current Workers – National Data

	High School	Some College	Associates Degree	Bachelor's Degree	Master's Degree
Architectural and Civil Drafters	9.8%	24.3%	34%	24.1%	5.1%
First-Line Supervisors of Construction Trades	44%	21.9%	7.1%	8.3%	1.4%
Carpenters	42.5%	19.4%	5.6%	6.4%	.9%
Electricians	38%	30.3%	15.7%	6.6%	1%
Painters, Construction and Maintenance	39.3%	15.3%	4.6%	5.8%	1.2%
Surveying and Mapping Technicians	28.5%	32.9%	22.3%	9%	1.9%
Interior Design	6.3%%	11.8%	11.1%	58.5%	9.2%

Table 3. LightCast Colorado Wage Percentiles 2022 Wages FRCC 6 County Area- Combined SOC codes

	25 th Percentile	Median	75 th Percentile
AEC	\$26.62	\$32.28	\$38.38
CAD	\$23.91	\$32.56	\$41.72
CON	\$22.29	\$28.76	\$37.30
IND	\$22.06	\$39.37	\$39.24

2. The regional and professional accreditation requirements for the degree program, if applicable, have been met.

Regional accreditation. This program will require approval and/or notification by the Higher Learning Commission (HLC). FRCC will submit a New Degree Program Screening Form upon receiving all appropriate SBCCOE and state approvals of the program. Because FRCC already has four programs at this credential level, notification is the most likely outcome. This process will likely take one to three weeks and will not require a site visit. FRCC is not pursuing professional accreditation at this time for the BAS in Integrated Building Design.

3. Providing the degree program within the Community College System is cost-effective for the students and the Community College System.

The IBD pathway at FRCC was created based on a series of stackable options to provide a cost-effective program for students. Students can start the process by working towards a certificate, which will stack with the Associates of Applied Science in AEC, CAD, IND, or other design and construction fields. The proposed Bachelor of Applied Science in Integrated Building Design will extend the pathway further by stacking on top of several AAS degrees. The first 60 credits of the 120 credits required to complete the BAS come directly from the AAS degree requirements. Students will be required to have completed the AAS or an equivalent degree with similar required competencies and credits before starting the BAS degree track.

Tuition for the 3000- and 4000-level courses in the BAS will be charged at a differential tuition rate aligned with CCCS online tuition rate (before applying the Colorado Opportunity Fund COF). This rate of tuition supports the necessary expenses of offering courses remotely and online while using existing campus-based labs and resources to maintain a cost-effective education. Even with the higher online tuition rate, the BAS in Integrated Building Design will be a more affordable option for students compared to other comparable degree programs available in Colorado and neighboring states.

4. Providing the degree program's projected facility and equipment costs are considered.

Cost projections for faculty, instructors, and administrative costs are included in [Appendix D](#). As the projections show, FRCC projects that the BAS IBD will begin to cover yearly costs in year two. The BAS program is expected to start in fall 2025 with junior level coursework. A cohort of 18 junior-level students is projected for the first year. FRCC has three strong AAS degrees to feed into the IBD degree. AY24 graduates in these programs numbered 35 total, demonstrating a solid pipeline for the first cohort of 18 students. Because most students pursuing a bachelor's degree in these fields are working full time, the pro-forma analysis is based on students taking a part time course load. Historically, new programs experience slight attrition, so a small decrease in enrollment is expected in the second year. Enrollment is expected to increase again to 18 students per semester by the third year, after the program has established a strong foundation. Enrollment is estimated on the number of AAS students currently expressing an interest in the BAS, and students who have completed certificates and AAS degrees.

Because this BAS will be taught using remote and online modalities mixed with intensive full-day bootcamps, students from other CCCS institutions may add to the number of students pursuing this degree.

Revenue projections are based on the 3000- to 4000-level IBD courses, Business for Creative Industries (BCI) courses, and the general education courses at the 1000 and 2000 level that

are needed to complete the degree. The BAS degree requires 60 credits from an AAS, 15 additional credit hours of general education courses, and 45 credits of IBD and BCI credits for a total of 120 credits, see [Appendix E](#).

Faculty and Staffing Analysis. An existing FRCC academic dean will oversee administration of the BAS pathway including course scheduling, student advising, and instructor support. One full-time faculty member will provide instructional oversight. Additional part-time instructors will be hired to teach 3000- and 4000-level courses. All part-time instructors currently teaching in the design programs at FRCC are employed as professionals in varying fields. As active members of the design communities, they have strong contacts which will help the program recruit additional instructors, faculty, and students.

Student Support Services Analysis. All services integral to the success of students will continue to be supported through FRCC's pathways advising model. Students will have one assigned academic advisor, as well as the support of the program lead and instructors in the IBD program. Additionally, FRCC has robust student support services including the Writing Center, Online Math Tutoring, 24/7 tutoring in a variety of subjects through TutorMe, 24/7 technology helpdesk through CCCS, and a student union with information on campus events available to all students. Additionally, a series of databases are available for students through centralized library services, including EBSCO, JSTOR, ProQuest, etc., to provide IBD students with the necessary resources.

5. The proposed program addresses the effect on existing programs in terms of finances, enrollment, and staff.

The new IBD BAS degree would not have any negative financial nor enrollment effects on existing programs. The new degree could create additional interest in the FRCC technical design fields of Architectural Tech, Computer Aided Design, and Interior Design increasing enrollment for these programs. For example, student interest in Interior Design may increase because the BAS pathway is in place. Faculty teaching in these program areas may be interested in teaching some of the IBD courses and therefore the AAS programs could potentially need additional part time instructors to fulfill course delivery in these degrees.

Appendices:

Appendix A: Student Survey

Appendix B: Employer Survey or Minutes

Appendix C: LightCast Labor Market Data

Appendix D: Financial Analysis

Appendix E: BAS Integrated Building Design Course List