



April 1, 2026

Elena Quiroz-Livanis
Interim Secretary of Higher Education
Maryland Higher Education Commission
217 E. Redwood St.
21st Floor
Baltimore, MD 21201

Dear Ms. Quiroz-Livanis:

Attached, please find Chesapeake College's revised Academic Program Proposal to substantially modify our existing Drafting Certificate due to changes outlined below:

- **Program name** changed from the current Drafting Certificate to Technical Design Build Certificate. This change will more accurately reflect the changes made to align this program with industry standards.
 - A Non-substantial Modification Cover Sheet and Letter of Notification has been submitted separately.
- **Change in CIP and HEGIS codes** to better reflect the program revisions.
 - A formal Non-substantial Modification Cover Sheet and Letter of Notification is being submitted separately after not properly submitting it initially.
- **Program content** has been updated in collaboration with our Program Advisory Committee. Many current courses have been terminated and replaced with new, updated courses that will cover topics such as scheduling, cost estimating, management principles, understanding codes, and understanding different types of software. Industry recognized credentials such as AutoCAD User, Revit User, and Solidworks User have also been added into the program. The revised program incorporates hands-on training for awareness of actual components instead of screen-based design only.
 - There is one course (CAD 100) from the current program that will run for the last time this fall for five students to complete the CTE Articulation Agreement Chesapeake has with their high school.

\$50 from check #389695 should be used for this transaction.

If you have any questions or require additional information, please contact Lyndy Galan, Director of Program Development, at lgalan@chesapeake.edu or at 410-827-5824.

Sincerely,

A handwritten signature in black ink that reads "David Harper, Jr." with a stylized flourish at the end.

David Harper, Jr., Ph.D.
Vice President for Workforce and Academic Programs



Office Use Only: PP#

Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program

Institution Submitting Proposal	
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Each action below requires a separate proposal and cover sheet.

- | | |
|---|---|
| <input type="radio"/> New Academic Program | <input type="radio"/> Substantial Change to a Degree Program |
| <input type="radio"/> New Area of Concentration | <input type="radio"/> Substantial Change to an Area of Concentration |
| <input type="radio"/> New Degree Level Approval | <input type="radio"/> Substantial Change to a Certificate Program |
| <input type="radio"/> New Stand-Alone Certificate | <input type="radio"/> Cooperative Degree Program |
| <input type="radio"/> Off Campus Program | <input type="radio"/> Offer Program at Regional Higher Education Center |

Payment <input type="radio"/> Yes	Payment <input type="radio"/> R*STARS #	Payment	Date
Submitted: <input type="radio"/> No	Type: <input type="radio"/> Check # 389695	Amount:	Submitted:

Department Proposing Program			
Degree Level and Degree Type			
Title of Proposed Program			
Total Number of Credits			
Suggested Codes	HEGIS:	CIP:	
Program Modality	<input type="radio"/> On-campus <input type="radio"/> Distance Education (fully online) <input type="radio"/> Both		
Program Resources	<input type="radio"/> Using Existing Resources <input type="radio"/> Requiring New Resources		
Projected Implementation Date <small>(must be 60 days from proposal submission as per COMAR 13B.02.03.03)</small>	<input type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer Year:		
Provide Link to Most Recent Academic Catalog	URL:		

Preferred Contact for this Proposal	Name:
	Title:
	Phone:
	Email:

President/Chief Executive	Type Name:
	Signature: Date: 4/1/26

	Date of Approval/Endorsement by Governing Board:
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Revised 4/2025



MARYLAND HIGHER EDUCATION COMMISSION

Substantial Change to a Certificate Program

Technical Design and Build Certificate

A. Centrality to Institutional Mission and Planning Priorities

1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.

Chesapeake College's core values of student-centeredness, quality, sustainability and responsibility, community, teamwork and shared governance, innovation, diversity and respect, and adaptability exemplify the vision and mission of the college to "empower students from diverse communities to excel in further education, employment, and participation in an interconnected world." This revised certificate program demonstrates the college's commitment to adapting to our changing community and industry needs to provide students a more meaningful and robust learning experience to better prepare them for the workforce.

The Chesapeake College Technical Design and Build program prepares students for employment as entry-level drafters in architectural, engineering, and manufacturing industries or for further study in the field by promoting technical competencies, professional knowledge and ethical responsibilities.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

The current Drafting program is too broad, with many students finding more value in transferring over to our Technical/Professional Studies AAS. More than 50% of our current program is changing, most notably the program name, removal of many existing courses and replacement of new and updated courses. The changes reflected in the proposed Technical Design & Build program align specifically to Objective 1.2 under the goal of educational leadership in the Chesapeake College 2025-2029 Strategic Plan, [*Transforming Lives, Empowering Futures*](#), to "elevate the quality of general and technical education programs through the assessment of student success, satisfaction, and learning outcomes."

While improvements have been made over the years to address some weaknesses of the program, the most recent Drafting Program Review that was presented in spring 2025¹ highlighted the remaining challenges that the program is still facing, including the lack of industry recognized credentials offered to students, an improved-but-still-low retention and completion rate, and lack of alignment with industry needs.

The action plan of the program review called for realigning the program with an industry-based skillset for construction and advanced manufacturing areas of employment,

¹ Davis, C. (2025) *Academic Program Review for Drafting and Design Certificate 742*. Chesapeake College.

specifically looking at the adjustment or termination of existing courses with input from industry leaders, the addition of industry certifications such as AutoCAD User, Revit User, and Solidworks User, incorporating hands-on training for awareness of actual components instead of screen-based design only, and new courses in estimating and projection management, with consideration of the development of an interconnected Drafting and Design AAS degree in the future.

These changes highlight Chesapeake's strong commitment to student success by addressing challenges and focusing on continuous improvement to better prepare students for job placement upon graduation.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation (Additional related information is required in section L).

The Technical Design and Build program will be overseen by our Director of Skilled Trades and our Advanced Manufacturing and Digital Fabrication Program Coordinator. New adjunct faculty members are currently being onboarded to teach the new courses. The structure and policies of Chesapeake College allow for the program coordinator to have input into the budget process and to make the case for program needs. Those requests are presented by the Skilled Trades Director into the overall budget process to ensure adequacy of financial resources.

4. Provide a description of the institution's commitment to:

- a) Ongoing administrative, financial, and technical support of the proposed program**
- b) Continuation of the program for a period of time sufficient to allow enrolled students to complete the program**

Chesapeake College is committed to providing sustained administrative, financial, and technical support for the Technical Design and Build program. Most new courses in the program have associated course fees for various supplies and testing and will be updated accordingly each budget cycle.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

1. Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general based on one or more of the following:

- a) The need for the advancement and evolution of knowledge**
- b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education**
- c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs**

The Technical Design and Build program has been thoughtfully redeveloped to ensure proper alignment with industry needs, particularly with architecture, construction and advanced manufacturing. Future plans include the development of an interconnected Drafting and Design AAS degree to align with four-year institutions through articulation agreements.

The revised program incorporates hands-on training for awareness of actual components instead of screen-based design only. New courses will cover topics such as scheduling, cost estimating, management principles, understanding codes, and understanding different types of software. Industry recognized credentials such as AutoCAD User, Revit User, and Solidworks User will also be available for students to obtain.

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.

The changes that warrant the new Technical Design and Build program aligns most closely with the goals of student access and student success in the [2022 Maryland State Plan for Postsecondary Education](#), as detailed below:

- Student Access, Priority 3: Analyze and improve systems that inform and evaluate a student’s academic readiness for postsecondary education.
- Student Success, Priority 5: Maintain the commitment to high-quality postsecondary education in Maryland.

The Technical Design and Build program has been updated in collaboration with our Program Advisory Committee to include practical knowledge of construction methods and processes. Chesapeake College has partnered with each public school system in our five-county service region to offer Career & Technology Articulation agreements. These agreements facilitate a smooth transition from high school to college, allowing students to earn college credits for certain high school courses in eligible Career & Technology Education (CTE) pathways. Drafting is a current CTE pathway and will be updated to Technical Design and Build.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

1. Describe potential industry or industries, employment opportunities, and expected level of entry (ex: *mid-level management*) for graduates of the proposed program.

The new program is most closely aligned with architecture, construction and advanced manufacturing industries for entry-level drafters, who will have opportunities to earn Industry Recognized Credentials throughout the program.

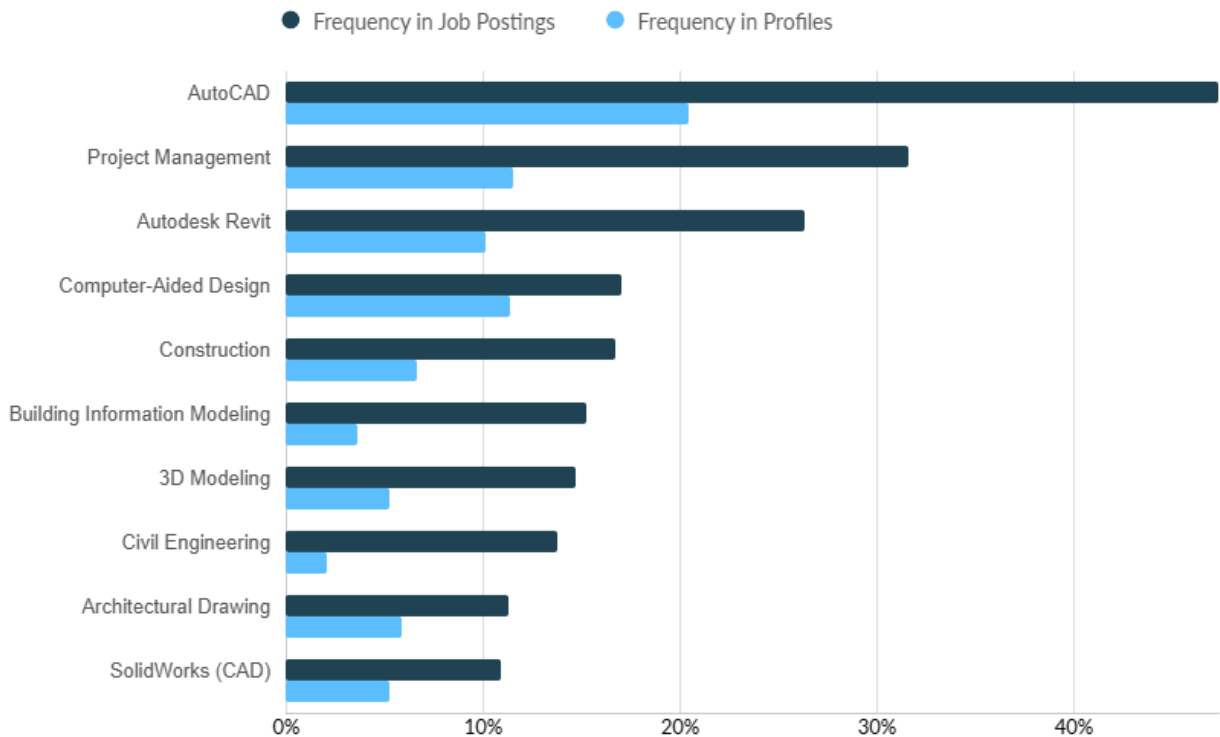
2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.

According to the Maryland Department of Labor 2023-2033 Industry Projections, the Architectural, Engineering, and related services industry group shows a 9.28% increase from 2023-2033 for the [Upper Shore](#). Across the state of [Maryland](#), there is a 7.4% increase from 2023-2033.

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

[Lightcast](#) data below highlights the top specialized skills that employers want to see in candidates. The Technical Design and Build program has been revised to specifically cover many of the skills seen below involving practical knowledge of construction methods and processes and include opportunity for students to earn Industry Recognized Credentials such as AutoCAD User, Revit User, and Solidworks User.

Top Specialized Skills



Skills	Postings	% of Total Postings	Profiles	% of Total Profiles	Projected Skill Growth	Skill Growth Relative to Market
AutoCAD	813	47%	1,063	20%	+16.9%	Growing
Project Management	543	32%	600	12%	+19.8%	Rapidly Growing
Autodesk Revit	452	26%	526	10%	+18.3%	Growing
Computer-Aided Design	293	17%	591	11%	+17.2%	Growing
Construction	288	17%	344	7%	+10.5%	Growing
Building Information Modeling	262	15%	190	4%	+23.7%	Rapidly Growing
3D Modeling	253	15%	274	5%	+19.1%	Growing
Civil Engineering	237	14%	110	2%	+26.2%	Rapidly Growing
Architectural Drawing	194	11%	305	6%	+19.0%	Growing
SolidWorks (CAD)	187	11%	273	5%	+24.1%	Rapidly Growing

4. Provide data showing the current and projected supply of prospective graduates.

Program completion from the current Drafting program has been minimal with only a total of seven completers in the past five fiscal years. As a result of building up our Skilled Trades Program Advisory Committee our relationships with LEAs and industry partners are more transparent, responsive, and outcomes-driven, ensuring that our program remains relevant, innovative, and aligned with the priorities of the communities we serve. This revised program will now better serve our community of both adult learners and dual enrollment students.

We estimate a conservative number of full time and part time students to start out, with steady growth in subsequent years. More information can be found Section L.

D. Reasonableness of Program Duplication

1. Identify similar programs in the State and/or same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.

There are many similar certificate programs that exist at other Maryland community colleges. The foundational learning in Chesapeake College’s certificate program aligns with the foundations of similar programs at other colleges and is now poised with the opportunity for students to earn Industry Recognized Credentials. AACC, BCCC, and Hagerstown are just a few community colleges in the state that also offer IRC’s in their programs. All of the institutions listed below are located outside of Chesapeake’s 5-county service region, making Chesapeake the primary provider to offer Technical Design and Build in the Mid-Shore region on the Eastern Shore for students who are seeking entry-level preparation in architecture, construction, manufacturing, and related fields.

<p>Anne Arundel Community College Architecture and Interior Design – Architectural CAD Certificate Training for employment as a computer-aided design (CAD) operator and architectural technician. Emphasizes computer delineation of building materials as they pertain to the detailing of residential and commercial buildings.</p>
<p>Baltimore City Community College Computer Aided Drafting and Design Certificate The CADD Engineering Technology certificate program prepares students with the skills necessary to become engineering and architectural drafters. Students are prepared to qualify for jobs where CADD associates work as the important CADD link in the modern design process with engineers and architects on one hand and detail drafters and manufacturers on the other hand. Emphasis is on engineering drawing, architectural drawing, engineering design, and realistic 3D modeling.</p>
<p>College of Southern Maryland Drafting Certificate Graduates will be prepared for positions requiring computer-aided drafting competencies. Typically, such positions support the work of architects, builders, mechanical and civil engineers, manufacturers and other technical professionals.</p>
<p>Community College of Baltimore County CAD Operator and Designer Certificate This certificate program prepares students to work as computer-aided drafters/designers in industry and to upgrade the skills of persons presently employed as drafters in a relatively short academic period by including only CADD and supporting courses. The CAD Operator Designer Certificate prepares students for entry-level positions as AutoCAD operators, technicians, and detailers.</p>
<p>Frederick Community College Architectural Computer Aided Design Certificate The Architectural Computer Aided Design (CAD) Certificate program is designed to help students develop skills and techniques used in drafting. CAD drafters prepare blueprints and technical drawings for use by engineers, architects, and construction companies. Students learn to identify and solve various types of drafting problems and develop the skills required for success in a career as an architectural CAD drafter, designer, operator, or technician.</p> <p>Computer Aided Design Operator Certificate The Computer Aided Design (CAD) Design Operator Certificate program is designed to help students develop skills and techniques used in drafting. Students learn to identify and solve various types of drafting problems and develop the skills required to obtain a position as a CAD technician.</p>
<p>Hagerstown Community College Computer-Aided Design Certificate The Computer-Aided Design Certificate program is for students who are preparing for a career in construction, architecture, geo-spatial technologies, manufacturing, and other industries requiring computer-aided drafting and design skills.</p>
<p>Harford Community College</p>

Computer-Aided Design and Drafting Certificate

This certificate program is designed to provide students with a solid foundation of Computer Aided Design and Drafting (CADD) through familiarization with the computer, peripheral devices and specialized software. This program prepares students to function as entry-level CADD technicians and operators who assist engineers and architects in all design and drawing preparation phases.

Howard Community College

Computer-Aided Design Technology Certificate

This certificate is available for students seeking entry in the field or desiring enhancement of a present position.

Prince Georges Community College

Computer-Aided Drafting Certificate

The Computer-Aided Drafting certificate program provides students with the background required to obtain entry-level employment in the computer-aided drafting (CAD) field. Students will learn to create complex mechanical and architectural drawings using industry-standard AutoCAD software.

2. Provide justification for the proposed program.

As stated previously, the Technical Design and Build program is replacing the current Drafting program. Chesapeake’s revised Technical Design and Build program prepares students for employment as entry-level drafters in architectural, engineering, and manufacturing industries to include practical knowledge of construction methods and processes. The closest institution offering a similar program is Anne Arundel Community College, with their Architectural CAD Certificate and is located outside of our 5-county service region.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

1. Discuss the program’s potential impact on the implementation or maintenance of high-demand programs at HBI’s.

There is no foreseeable impact, negatively or positively, on programs at HBIs since this program is not intended for transfer.

F. Relevance to the identity of Historically Black Institutions (HBIs)

1. Discuss the program’s potential impact on the uniqueness and institutional identities and missions of HBI’s.

There is no foreseeable impact, negatively or positively, on programs at HBIs since this program is not intended for transfer.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in COMAR 13B.02.03.10)

1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.

The Drafting Program first became active at Chesapeake College in 1991 with multiple pathways including an associate of applied science, certificate, and letter of recognition. While a longstanding program, it languished around 2009 due to local manufacturing collapse, which eliminated many traditional employers and therefore, interest in the program. In the last five years, we have seen a rapid regrowth of the architectural, engineering, and manufacturing industries in our service region. Now that Chesapeake has a fully-staffed Skilled Trades Department and active Skilled Trades Program Advisory Committee, we finally have the resources to make these program changes to better-align with industry standards and the priorities of our local community.

The program will be overseen by Frank Williams, Advanced Manufacturing and Digital Fabrication Program Coordinator, and courses will be taught by Frank and adjunct faculty members.

2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.

Program Goals:

1. Develop an understanding of various CAD systems and their use in architectural and mechanical fields
2. Understand and apply project management skills and tools used in industry
3. Identify construction codes and regulations
4. Create CAD designs that adhere to industry standards
5. Create physical projects (digital design to creation)

Student Learning Outcomes:

1. Apply appropriate industry terminology in the engineering technology setting
2. Describe current technologies available in areas such as architecture, drafting and design, electronics, manufacturing, and the building trades
3. Interpret and create drawings for various engineering disciplines
4. Understand and demonstrate the use of industry standards
5. Identify professional responsibilities concerning ethical issues that may be present in an engineering environment
6. Determine the proper use, care, maintenance, and safety aspects of various tools and equipment used in the many areas of engineering and manufacturing

3. Explain how the institution will:

- a) **Provide for of student achievement of learning outcomes in the program**
- b) **Document student achievement of learning outcomes in the program**

Chesapeake College maintains a comprehensive, outcomes-based assessment framework to ensure student achievement of learning outcomes. All courses at Chesapeake College have clearly defined and measurable student learning outcomes (SLOs), that are recorded in an Assessment Plan, along with assessment strategies or assignments, and an identified target for each outcome. For courses included in the General Education Limited Distribution Core, the Plan also includes the 4+1 program outcomes appropriate for the course category. Assessment results and action plans are reported electronically on the Nuventive Assessment Management System (AMS) in accordance with the college's course-level assessment process and tracked by the Office of Assessment and Planning.

Academic Program Review is a collaborative process designed to continuously measure and improve the quality of all transfer and career programs provided to the community. Reviews are conducted on a five-year cycle to evaluate the quality and vitality for each program of study (including Degree options, Certificates, Letter of Recognition programs, and Non-Credit programs).

The purpose of program review is to provide academic departments an opportunity to:

1. Perform an internal evaluation of the current programs and services offered.
 2. Assess program and student learning outcomes.
 3. Ensure course content and methodology are meeting current and future needs of both the students and community.
 4. Measure the alignment of the program with the college's mission.
- 4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements.**

Program requirements:

Fall Semester I

- FSC 101 – Freshman Seminar – 1 credit
- CAD 120 – Fundamentals of AEC Industry and Design – 3 credits
- CAD 111 Introduction to Design – 3 credits
- MFG 101 – Introduction to Manufacturing – 3 credits

Spring Semester I

- SKD 135 – Project Management Principles I – 3 credits
- CAD 112 – Design Level II – 3 credits
- SKD 131 – Construction Communication and Codes – 3 credits

Fall Semester II

- CAD 110 – Intermediate CAD – 3 credits

- CAD 114 – Design Studio – 3 credits
- SKD 130 – The Business of Design and Construction – 1 credit
- CAD 125 – Technical Design and Build Capstone – 3 credits

Minimum Required Credits: 29

Course Descriptions:

FSC 101 – Freshman Seminar Course

A course engaging students in key skill areas designed to increase success in college. This course asks students to: practice effective written and oral communication, both individually and in a collaborative presentation; examine and discuss strategies related to academic success; explore opportunities and services available at Chesapeake College; develop a basic understanding of policies affecting students; and to demonstrate and utilize basic technological competencies. FSC 101 must be taken within the first 12 load hours if required in the program of study. 1 credit [FALL/SPRING] One hour lecture per week.

Note: FSC 101 must be taken within the first 12 load hours if required in the program of study. Students who have completed 18 or more hours with a cumulative GPA of 2.0 from another institution may be exempted. Non-degree-seeking students are not required to take FSC 101 unless they move into a major requiring it.

CAD 120 – Fundamentals of ACE Industry and Design

This course is designed to familiarize students with industries of Architecture, Construction and Engineering (ACE). Introduction of world architectural styles, features and brief history of each. Learn about the “Built Environment” (BE) and associated costing models. Apply math skills in relation to construction and design. View various materials and tools employed. Recite common language and industry terms. Define the roles within the industry, design process, and methods of communication. Access to a PC with a keyboard and mouse and a Microsoft supported Windows Operating System is required. 3 credits [FALL] Two hours lecture, two hours lab per week.

CAD 111 – Introduction to Design

This course is designed to provide students with fundamental and basic technical drafting skills necessary to function in a CAD (Computer-Aided Design) drafting environment using AutoCAD. Basic understanding of various layout, view, and projection methods, as well as dimensioning and tolerancing. Students will construct multi-view drawings and prepare those files for printing and plotting. Access to a PC with a keyboard and mouse and a Microsoft supported Windows Operating System is required. 3 credits [FALL] Two hours lecture, two hours lab per week.

MFG 101 – Introduction to Manufacturing

Introduces entry level students to the core manufacturing industry related skills. The core competency areas are: (1) math and measurement, (2) manufacturing technology/Industry 4.0, and (3) technical training in several areas including safety, preventative maintenance, shop skills, hydraulics, pneumatics, machining, and print reading. 3 credits [FALL/SPRING] Two hours lecture, two hours lab per week.

SKD 135 – Project Management Principles I

This course provides an overview of basic project management principles tailored to the construction industry. Students will explore key components of successful project execution, including interpreting and utilizing construction documents, developing accurate estimates, implementing cost control strategies, creating and managing project schedules and ensuring quality control throughout the construction process. Through practical applications learners will gain the skills necessary to effectively plan construction projects on time and within budget. Access to a Windows based computer with a keyboard and mouse is highly recommended. 3 credits [SPRING] Three hours lecture.

Prerequisite(s): MFG 101

CAD 112 – Design Level II

This course starts with training on importing previous CAD files and building them into an AutoCAD Revit file. Learn to build Revit files from new. Understand the relationship between the two software platforms. Learn toolbars and properties in Revit. Navigate moving from 2D to 3D models and understand how they work and their relationships. Continued development of floorplans, elevations and detailed drawings with Revit title blocks. Provide testing for Auto User Certification. Access to a PC with a keyboard and mouse and a Microsoft supported Windows operating system is required. 3 credits [SPRING] Two hours lecture, two hours lab per week.

Prerequisite(s): CAD 111

SKD 131 – Construction Communication and Codes

This course equips students with essential communication and regulatory skills for success in the construction industry. Students will learn to effectively organize and deliver a technical presentation using industry-standard formats and visual aids, while developing confidence and clarity in oral communication tailored to professional construction audiences. The course emphasizes the integration of technical drawings, specifications, and cost estimates into persuasive written proposals. Students will also create professional correspondence – including emails, memos, and letters – using construction-specific vocabulary and appropriate tone. In addition, the course introduces key building codes and standards, guiding students in identifying, interpreting, and applying code requirements to real-world construction projects. Through analysis of code compliance, students will explore its impact on project design, safety, and cost, preparing them to navigate regulatory frameworks with competence and precision. Access to a Windows based computer with a

keyboard and mouse is highly recommended. 3 credits [SPRING] Two hours lecture, two hours lab per week.

Prerequisite(s): MFG 101

CAD 110 – Intermediate CAD

A continuation of CAD 112 covering such topics as using libraries of pre-drawn materials, producing 3D drawings, assigning data to graphic symbols, customizing AutoCAD software by creating special screen menus and graphics tablet overlays, and other more advanced applications. 3 credit [FALL] Three hours lecture per week.

Prerequisite(s): CAD 112

CAD 114 – Design Studio

This course provides an overview of basic MEP and structures using Revit. Students will explore, create, and configure basic 2D parametric families and annotations, collaborate and coordinate linked models, manage detail groups assigned and build materials. Access to a PC with a keyboard and mouse with a Microsoft supported Windows Operating System is required. 3 credits [FALL] Two hours lecture, two hours lab per week.

Prerequisite(s): CAD 111

SKD 130 – The Business of Design and Construction

This course introduces students to the foundational business principles that drive success in the design and construction industry. Students will explore how construction firms generate revenue. Emphasis is placed on the vital role entry-level employees play in a firm. Students will also examine Project Manager expectations and learn how to exceed them through professional conduct and proactive engagement. The course concludes with an overview of the construction project lifecycle and the responsibilities of various stakeholders throughout each phase. Access to a Windows based computer with a keyboard and mouse is highly recommended. 1 credit [FALL] One hour lecture per week.

Prerequisite(s): SKD 131

CAD 125 – Technical Design and Build Capstone

This self-study course presents a student with an opportunity to develop their own project in physical space and/or the completion of a design that can be given to a company or team to build or manufacture. Combines all of the facets of the design process through design, project management and presentation aspects. Instructor's primary role in the course is a reference to the student. Student is able to specialize in an area of professional interest, to learn more about and to hone relevant skills. Provide testing for AutoCAD Revit User Certification if desired. Access to a PC with a keyboard and mouse and a Microsoft supported Windows operating system is required. 3 credits [FALL] Two hours lecture, two hours laboratory per week.

Prerequisite(s): SKD 131

5. Discuss how general education requirements will be met, if applicable.

Not applicable.

6. Identify any specialized accreditation or graduate certification requirements for this program and its students.

Students will be able to earn the following Industry Recognized Credentials and Certifications in AutoDesk (<https://www.autodesk.com/certification/overview>):

- AutoCAD Certified User (ACU): Basic certification demonstrating familiarity with AutoCAD.
- Autodesk Certified Associate (ACA): Intermediate certification validating skills in using AutoCAD.
- Autodesk AutoCAD Certified Professional (ACP): Advanced certification demonstrating proficiency in AutoCAD.
- AutoCAD Certified Expert (ACE): The highest level of certification, showcasing expert-level skills in AutoCAD.
- Autodesk Certified Professional in Revit for Architectural Design.
 - Revit for architectural design.
 - Revit for structural design.
- Autodesk Certified User certification in Revit.
 - Specializations in Revit MEP, Revit Structure, or SketchUp fundamentals.

7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.

Not applicable.

8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.

Chesapeake College provides students with clear, comprehensive, and timely information regarding all academic programs, including curriculum requirements, degree completion pathways, and available support services. Program information, including curriculum structure, course requirements, academic policies, financial aid resources, tuition and fees,

and payment policies, is published through the College's official website and academic catalog. These resources are publicly accessible and updated regularly to ensure accuracy and transparency for current and prospective students.

Additional program information is communicated through the College's marketing materials, recruitment initiatives, and admissions processes. Prospective students receive guidance from admissions counselors and academic advisors who provide detailed explanations of program requirements, transfer opportunities, and career pathways associated with the program.

All curriculum updates and program changes are processed through the College's formal curriculum review and approval process and managed through the institution's integrated curriculum and catalog management system. This process is overseen by the Director of Program Development to ensure that updates are accurately reflected across the catalog, website, advising resources, and marketing materials. Relevant updates are also communicated to the College's marketing, recruitment, and admissions teams to ensure consistent messaging.

Students receive a detailed course syllabus at the beginning of each course that outlines course objectives, assignments, grading policies, and expectations for faculty and student interaction. For courses delivered fully or partially online, syllabi and course orientations include information regarding required technology competencies, technical equipment requirements, and use of the College's learning management system, Canvas.

Students are also informed of available academic and student support services, including advising, tutoring, library services, disability support services, and financial aid counseling. These resources are designed to support student success and ensure that students have access to the tools necessary to complete their academic program.

9. Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.

The Technical Design and Build program will be fully supported through the college's marketing, recruiting, and admissions initiatives. Marketing materials and all areas of publication, including relevant webpages and the catalog, will be updated to accurately and concisely represent the updates to the program.

The College's marketing and communications team works collaboratively with academic leadership to ensure that all published materials accurately reflect approved program requirements and institutional policies. Program descriptions will clearly outline degree requirements, program outcomes, and available student support services.

Admissions and recruitment staff will also be provided with updated program information to ensure prospective students receive accurate and consistent guidance during the admissions and advising process. This coordinated approach ensures transparency, consistency of information, and alignment across all institutional communications related to the program.

H. Adequacy of Articulation (as outlined in COMAR 13B.02.03.19)

- 1. If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements.**

Graduates from the Technical Design and Build program will be able to enter directly into the workforce. Future plans include the development of an interconnected Drafting and Design AAS degree to align with four-year institutions through articulation agreements.

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.11)

- 1. Provide a brief narrative demonstrating the quality of program faculty. Include a summary list of faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faculty member will teach in the proposed program.**

The program will be overseen by Frank Williams, who also developed and currently oversees Chesapeake's credit and noncredit Manufacturing programs. Along with Skilled Trades Director, Chuck Davis, full-time faculty in our Business and Communications departments are available to support development and instruction of the SKD courses.

- Frank Williams
 - Program Coordinator, full-time instructional staff
 - Technical and Professional Studies AAS, Chesapeake College
 - Project Management MS, UMGC
 - Course to be taught: MFG 101
- Chuck Davis
 - Director of Skilled Trades, full-time instructional staff
 - Business Management AAS, Chesapeake College
 - Courses to be taught: CAD 111, CAD 120
- Cathy Rust
 - Associate Professor of Business and Economics, full-time
 - Marketing B.S., Indiana University of Pennsylvania
 - International Business M.B.A, University of Pittsburgh
 - Courses that could be taught: SKD 130, SKD 135
- Gwen Buxbaum
 - Associate Professor of Business Management, full-time
 - B.S., Syracuse University

- M.B.A, Anderson Graduate School of Management at UCLA
- Courses that could be taught: SKD 130, SKD 135
- Amy Childs
 - Assistant Professor of Communications, full-time
 - Theatre Arts B.S., Towson University
 - M.Ed, Salisbury University
 - Course to be taught: SKD 131
- James Cook
 - Adjunct faculty, Drafting Technician with Rauch Inc. in Easton, MD.
 - Engineering Technology AAS, Chesapeake College
 - Course to be taught: CAD 110
- Rachael Whiting
 - Adjunct faculty
 - Architecture BA, University of Maryland College Park
 - Master's in Real Estate Development, Georgetown University
 - Courses to be taught: CAD 114, CAD 125
- Chris Schoenster
 - Adjunct faculty, Civil & Environmental Project Designer with Rauch Inc.
 - Master of Landscape Architecture, Morgan State University
 - Anthropology BA, The Catholic University of America
 - Course to be taught: CAD 112

- 2. Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidence-based best practices, including training in:**
- a) **Pedagogy that meets the needs of students**
 - b) **The learning management system**
 - c) **Evidence-based best practices for distance education, if distance education is offered**

Full-time and Adjunct Faculty have many opportunities for professional development. Chesapeake College's Teaching and Learning Center (TLC) provides training to faculty in the use of our learning management system, Canvas, and in the use of other technologies that enhance student engagement and success. The Director and staff of the TLC have expertise in instructional design and technology and are always ready to discuss pedagogical solutions and technical tools.

J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12)

- 1. Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program.**

The Learning Resource Center (LRC) provides students, faculty, and community members with various resources to meet their informational and research needs and supports the

programs that make up the current curriculum offerings. The LRC has a collection of 30,000 print titles, more than 300,000 e-books, 1,500 audiovisual materials, 50 print serial subscriptions, and over 100,000 electronic print serials. The LRC subscribes to over 50 databases providing full-text material, bibliographic citations, images, audio, and films.

In addition to the resources listed above, the LRC also houses the Academic Support Center, which provides tutoring services and writing assistance to students.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined in COMAR 13B.02.03.13)

- 1. Provide an assurance that physical facilities, infrastructure and instruction equipment are adequate to initiate the program particularly as related to spaces for classrooms, staff and faculty offices, and laboratories from studies in the technologies and sciences.**

The current program utilizes a classroom with 16 shared desktop computers with specifications (processing and memory) that meet the minimum requirements of the CAD programs used in the courses, and two lab spaces that house 2 large-format plotters for printing documents such as construction drawings, three 3D printers, and various types of 3D models used to provide detailed explanation of building systems, as well as modeling exercises/activities for students.

In addition to the classroom and lab spaces, students have the opportunity to utilize all of the College's resources, including the library, Academic Support Center, computer labs, small group conference areas, and student dining/lounge areas.

- 2. Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate access to:**
 - a) An institution electronic mailing system**

Chesapeake College provides students, full-time and adjunct faculty, and staff with a college email address. Students and faculty regularly use Canvas' internal messaging system to communicate.

- b) A learning management system that provides the necessary technological support for distance education**

Chesapeake College uses Canvas as its learning management system. New students are encouraged to enroll in the Chesapeake Online Student Orientation Canvas course to learn how to use Canvas. Computer support is available by calling the college's Help Desk. Canvas-related help and resources is available within Canvas.

L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14)

TABLE 1: PROGRAM RESOURCES AND NARRATIVE RATIONALE

1. **Reallocated funds:** This program will utilize existing faculty resources and administrative staff.
Tuition and Fee Revenue: We are projecting no more than a 2% tuition increase each year. Fees include Consolidated Fees² of \$37 per credit hour and Registration Fees³ of \$10 per registration transaction.
2. **Grants & Contracts:** While the tuition and course fees are designed to cover the immediate costs of the program, additional grants and private donations are anticipated to assist with site overhead and infrastructure needs, but not included below.
3. **Other sources:** Miscellaneous course fees, which subsidizes the cost of consumable supplies and materials used for instruction. There is a total of \$975 in course fees, spread out among the six CAD courses and MFG course. Special course delivery charges are not included.
4. **Total Year:** See below

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	\$0	\$0	\$0	\$0	\$0
2. Tuition/Fee Revenue (c + g below)	\$16,962.00	\$35,226.00	\$52,995.00	\$71,376.00	\$89,847.00
a. Number of F/T Students	3	6	9	12	15
b. Annual Tuition/Fee Rate	\$4,606.00	\$5,073.00	\$5,163.00	\$5,253.00	\$5,313.00
c. Total F/T Revenue (a x b)	\$13,818.00	\$30,438.00	\$46,467.00	\$63,036.00	\$79,695.00
d. Number of P/T Students	4	6	8	10	12
e. Credit Hour Rate	\$131.00	\$133.00	\$136.00	\$139.00	\$141.00
f. Annualized Credit Hour Rate	6	6	6	6	6
g. Total P/T Revenue (d x e x f)	\$3,144.00	\$4,788.00	\$6,528.00	\$8,340.00	\$10,152.00
3. Grants, Contracts & Other external sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$7,500.00	\$11,700.00	\$13,650.00	\$15,600.00	\$17,550.00
TOTAL (Add 1 – 4)	\$24,462.00	\$46,926.00	\$66,645.00	\$86,976.00	\$107,397.00

²Consolidated Fee: Helps cover the cost of the Academic Support Center, student activities, technology, and general expenses of the college. This fee also covers use of the physical education facilities and equipment which all students have access to.

³Registration Fee: Defrays cost of clerical support and supplies for registration processing.

TABLE 2: PROGRAM EXPENDITURES AND NARRATIVE RATIONALE

The program will be implemented with existing administrative staff and campus resources. One adjunct faculty member will teach 3 credits in the first year of the program and three adjunct faculty members will teach a collective 12 credits in the years thereafter. The Adjunct Rate is forecasted to increase 3% each year. Campus resources are funded through the College’s general operating budget each year.

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$2,541	\$11,100	\$11,436	\$11,772	\$12,132
a. Number of FTE	0.01	0.40	0.40	0.40	0.40
b. Total Salary	\$2,541	\$11,100	\$11,436	\$11,772	\$12,132
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
2. Admin. Staff (b + c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	\$0	\$0	\$0	\$0	\$0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
3. Support Staff (b + c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	\$0	\$0	\$0	\$0	\$0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
4. Technical Support & equipment	\$0	\$0	\$0	\$0	\$0
5. Library	\$0	\$0	\$0	\$0	\$0
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
7. Other Expenses	\$0	\$0	\$0	\$0	\$0
TOTAL (Add 1 – 7)	\$2,541	\$11,100	\$11,436	\$11,772	\$12,132

M. Adequacy of Provisions for Evaluation of Program (as outlined in COMAR 13B.02.03.15)

1. Discuss procedures for evaluating courses, faculty and student learning outcomes.

The college gains input on course quality and faculty evaluation from Student Response Surveys conducted for all credit classes offered each semester through an online survey issued via College email. The data is collected by the Office of the Vice President for Workforce and Academic Programs and provided electronically to the appropriate academic dean. Faculty members receive their survey reports by course section once the semester has ended.

Faculty up for promotion and faculty changing or renewing contract status will be evaluated by one peer evaluator (optional for contract renewal) and by the appropriate Dean once during the academic year. Faculty who are tenured or on a six-year contract, who are not up for promotion within the six-year period, will be reviewed every three years, by the Dean only, and annually, when professional improvement is needed.

Instruments for evaluation of teaching faculty for contract renewal or promotion include a professional portfolio of achievements (promotion only) or an electronic dossier (contract renewal only), a peer evaluation packet, student response surveys, a self-evaluation form, and a supervisor's evaluation form.

New adjuncts are evaluated during their second time teaching or second semester (whichever comes later). After a satisfactory initial evaluation, an adjunct will be evaluated after every 30 credits, unless an issue arises. In that case, the immediate supervisor would address the issue with the adjunct, and an evaluation would take place in the first instance thereafter.

The evaluation of SLOs is addressed above in section G3.

2. Explain how the institution will evaluate the proposed program's educational effectiveness, including assessment of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

The college uses a five-year internal program review process for all of its courses and programs. Additionally, all courses are reviewed annually with student opinion surveys. Faculty developed and approved assessment plans are implemented to monitor student mastery of all identified course and program goals and student learning outcomes. Programs also make use of Program Advisory Committees (PACs) with membership consisting of college faculty, administration and local leaders from the community.

N. Consistency with the State's Minority Student Achievement Goals (as outlined in COMAR 13B.02.03.05)

1. Discuss how the proposed program addresses minority student access & success, and the institution's cultural diversity goals and initiatives.

Chesapeake College will use its ongoing outreach strategies to feeder high schools and to communities with high concentrations of minority populations. College has a strong dual enrollment program which will be used to encourage early decisions about career goals and career exploration. Also, the college, working in cooperation with the local county schools, has initiatives such as grow your own programs, community mentors, and new financial incentives, to recruit and retain more minority students. The college has an aggressive "early alert" system as part of its student retention initiatives.

O. Relationship to Low Productivity Programs Identified by the Commission

1. If the proposed program is directly related to an identified low productivity program, discuss how the fiscal resources (including faculty, administration,



library resources and general operating expenses) may be redistributed to this program.

This program is not related to low productivity programs identified by the Commission.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

- 1. Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.**
- 2. Provide assurance and any appropriate evidence that the institution complies with the C.RAC guidelines, particularly as it relates to the proposed program.**

Chesapeake College follows C-RAC guidelines for distance education.