New Program Proposal

The following must be submitted to complete a new program request:

Submission Checklist:

☒ New Program Proposal
☐ Business Plan (https://www.ache.edu/index.php/forms/)
☐ Undergraduate or Graduate Curriculum Plan (https://www.ache.edu/index.php/forms/)

Primary Contact Information

Institution: Drake State Community & Technical College
Contact: Lydia Owens
Title: CIS Instructor / Division Chair
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Telephone: 256-551-3128

Program Information

Date of Proposal Submission: 8/12/2025
Award Level: Associate's Degree
Award Nomenclature (e.g., BS, MBA): AAS
Field of Study/Program Title: **Systems Engineering Technology (SET)**
CIP Code (6-digit): **14.2701**

Administration of the Program

Name of Dean: Dr. Carolyn Henderson
Name of College/School: Drake State Community & Technical College
Name of Chairperson: Lydia Owens
Name of Department/Division: Computer Information Systems

Implementation Information

Proposed Program Implementation Date: 8/13/2026
Anticipated Date of Approval from Institutional Governing Board: 12/12/2025
Anticipated Date of ACHE Meeting to Vote on Proposal: 12/12/2025
SACSCOC Sub Change Requirement (Notification, Approval, or NA): Notification
Other Considerations for Timing and Approval (e.g., upcoming SACSCOC review):

New Program Proposal

I. Program Description

~~A.~~ **Concise Program Summary (one paragraph)** to be included in ACHE Agenda: Systems Engineering Technology is a multidisciplinary program designed to prepare students to manage and engineer complex systems across their entire lifecycle. It integrates engineering principles, digital modeling, and project management to solve real-world challenges in industries such as aerospace, defense, healthcare, and manufacturing.

B. Specific Rationale (Strengths) for the Program

List three (3) to five (5) strengths of the proposed program as specific rationale for recommending approval of this proposal.

1. The program equips students with practical skills in systems integration, testing, and maintenance—ideal for technician-level roles that support engineers in industries like aerospace, defense, and manufacturing. This bridges the gap between Engineering Theory and Technical Application.

2. Huntsville, AL has a strong presence of engineering and defense contractors. This program aligns with workforce demands by producing graduates ready to contribute to systems development and support teams.

3. Computer science skills in data analytics, machine learning, and simulation empower students to analyze complex industrial systems. The combination fosters a mindset that blends practical engineering with computational thinking.

4. Graduates can pursue bachelor's degrees in systems engineering or related fields, or obtain certifications in systems modeling and analysis, expanding their career opportunities.

C. External Support (Recommended)

List external entities (more may be added) that may have supplied letters of support attesting to the program's strengths and attach letters with the proposal at the end of this document.

D. Student Learning Outcomes

List four (4) to seven (7) of the student learning outcomes of the program.

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply systems engineering design to develop solutions that meet specified needs, considering public health, safety, welfare, and global, cultural, social, environmental, and economic factors.
3. Function effectively on multidisciplinary teams, providing leadership, creating a collaborative environment, and achieving shared goals.
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments considering the broader impact of engineering solutions.
5. Develop and use systems engineering models to represent and analyze systems or products.

E. Similar Programs at Other Alabama Public Institutions

List programs at other Alabama public institutions of the same degree level and the same (or similar) CIP codes. If no similar programs exist within Alabama, list similar programs offered within the 16 SREB states. If the proposed program duplicates, closely resembles, or is similar to any other offerings in the state, provide justification for any potential duplication.

CIP Code	Degree Title	Institution with Similar Program	Justification for Duplication
11:0101	Computer Information Systems A.A.S. - Systems Engineering Technology Concentration	Calhoun CC	Not a 1:1 duplication --- CCC's program is an AAS in CIS with a SET concentration. This proposal is to create a SET AAS with CIS Electives.

F. Relationship to Existing Programs within the Institution

Nearly all new programs have some relationship to existing offerings through shared courses, faculty, facilities, etc. Is the proposed program associated with any existing offerings within the institution, including options within current degree programs? **Yes** ☒ **No** ☐

If ***yes***, please describe these relationships including whether or not the program will replace or compete with existing offerings: (***Note:*** If this is a graduate program, list any existing undergraduate programs which are directly or indirectly related. If this is a doctoral program, also list related master's programs.)

Related Degree Program Level	Related Degree Program Title	Explanation of the Relationship Between the Programs
A.A.S.	Computer Information Systems	Courses can be used as electives for each program
A.A.S.	Industrial Systems Engineering	Courses can be used as electives for each program

If ***not***, please describe how the institution plans to support a program unrelated to existing offerings.

G. Collaboration

Have any collaborations **within your institution** (i.e., research centers, across academic divisions, etc.) been explored? **Yes** ☐ **No** ☒

If ***yes***, provide a brief explanation of the proposed collaboration plan(s) for the program:

Have collaborations with **other institutions or external entities** (i.e., local business, industries, etc.) been explored? **Yes ☐ No ☒**

If ***yes***, provide a brief explanation of the proposed collaboration plan(s) for the program:

H. Programmatic Accreditation

Select the appropriate program accreditor from the drop-down menu below:

Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)

Provide a detailed timeline for gaining accreditation (i.e., when will full candidacy be reached?):Not Required

I. Professional Licensure

Will the program be considered a Professional Licensure Program based on the following definition: **Yes ☐ No ☒**

Professional Licensure Program: As defined in federal regulations, an instructional program that is designed to meet educational requirements for a specific professional license or certification that is required for employment in an occupation or is advertised as meeting such requirements.

If ***yes***, please explain:

Select the appropriate licensure body from the table below:

Choose an item.

Select the appropriate license from the table below:

Choose an item.

J. Professional Certification

Will students earn industry certifications while completing the degree or be prepared for industry certifications upon graduation? **Yes ☐ No ☒**

If ***yes***, please explain:

K. Admissions

Provide any additional admissions requirements beyond the institution's standard admissions process/policies for this degree level. Include prerequisites, prior degrees earned, etc. N/A

L. Mode of Delivery

Provide the planned delivery format(s) of the program as defined in policy (i.e., in-person, online, hybrid). Please also note whether any program requirements can be completed through competency-based assessment.

The planned delivery format for this program will be in-person, online (asynchronous / synchronous course offerings) via Zoom or Microsoft Teams, or similar platform and hybrid.

Can students complete the entire degree program through distance education (100% online) based on the following definition? **Yes** ☐ **No** ☒

Distance Education: An academic program for which required instructional activities can be completed entirely through distance education modalities. A distance education program may have in-person requirements that are non-instructional (e.g., orientation, practicum).

M. Instructional Site(s)

Provide the planned location(s) where the program will be delivered (i.e., main campus, satellite campus, off-campus site.) If the program will be offered at an off-campus site, provide the existing site name or submit an ***Off-Campus Site Request*** if new.

Will more than 50% of this program be offered at an off-campus site(s) **Yes** ☐ **No** ☒

If ***yes***, which sites?

N. Industry Need

Using the federal **Standard Occupational Code (SOC) System**, indicate the top three occupational codes related to post-graduation employment from the program. A full list of SOCs can be found at https://www.onetcodeconnector.org/find/family/title#17.

SOC 1 **(required):** Engineering Technologists and Technicians, Except Drafters, All Other - 17-3029.00

Briefly describe how the program fulfills a specific industry or employment need for the State of Alabama. As appropriate, discuss alignment with Alabama's Statewide or Regional Lists of In-Demand Occupations (https://www.ache.edu/index.php/policy-guidance/) or with emerging industries as identified by Innovate Alabama or the Economic Development Partnership of Alabama (EDPA).

O. Additional Education/Training

Please explain whether further education/training is required for graduates of the proposed program to gain entry-level employment in the SOC occupations selected above.

P. Student Demand

Please explain how you projected the student enrollment numbers in the **Business Plan, Lines 24-27** and provide evidence to substantiate student demand (i.e., surveys, enrollments in related courses, etc.).

Information Technology occupations are listed as high demand in the Alabama Department of Labor LMI Division, Region 1 occupations. Employer demand for trained and skilled technicians in the Model Based Systems Engineering (MBSE) technology field is increasing, as evidenced by the letters of support from employers (attached).

II. Program Resources and Expenses

A. All Proposed Program Personnel

Provide all personnel counts for the proposed program.

Employment Status of Program Personnel		Personnel Information		
		Count from Proposed Program Department	Count from Other Departments	Subtotal of Personnel
Current	Full-Time Faculty	2	0	2
	Part-Time Faculty	3	0	3
	Administration			
	Support Staff			
**New To Be Hired	Full-Time Faculty	N/A		
	Part-Time Faculty	1		1
	Administration	N/A		
	Support Staff	N/A		
		Personnel Total		**6**

Provide justification that the institution has proposed a sufficient number of faculty (full-time and part-time) for the proposed program to ensure curriculum and program quality, integrity, and review: N/A

Note: Include ***any new funds*** designated for compensation costs (faculty, administration, and/or support staff to be hired) in the **Business Plan, Line 7 - Personnel Salaries and Benefits**. Current personnel salary/benefits ***should not be included*** in the Business Plan.

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B. Proposed Faculty Roster*

Complete the following **Faculty Roster** to provide a brief summary and qualifications of current faculty and potential new hires specific to the program.

***Note**: Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.

Current Faculty			
1	**2**	**3**	**4**
CURRENT FACULTY NAME (FT, PT)	**COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**
Lydia Owens - FT	Fall 2024 - CIS 150 - Programming Logic – 3 CH	MS – MIS, Florida Institute of Technology	Project Management Institute PMP / CompTIA A+
Chad Gross - FT	Spring 2025 - CIS 202 – Python 3 CH Fall 2024 – CIS 171 Linux – 3 CH	MS – Information Assurance, Liberty University	
Nate Sullivan - PT	Summer 2025 –CIS 270 - CISCO – 3 CH, Fall 2025 Information Assurance – CIS 282, – 3 CH, Fall 2025 CIS 280 - Network Security– 3 CH	PhD – Information Assurance, University of Fairfax	CCNA / Security + / CEH, MCSA, Linux +
Anthony McGee	Summer 2025 – CIS 251 - C++ Spring 2025 - 3 CH	MS – Computer Science, Alabama A&M University	Programmer
Cedarric Collins	Fall 2024 – CIS 251 C++ 3 CH, Summer 2025 – CIS 207 - Web Development 3CH	MS – Computer Science, Alabama A&M University	Software Engineer
Additional Faculty (To Be Hired)			
1	**2**	**3**	**4**
FACULTY POSITION (FT, PT)	**COURSES TO BE TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**
PT	Fall 2025 – SYS 101 – Intro to Systems Engineering – 3 CH Future Courses SYS 221 - MBSE in Digital Environment – 3 CH, SYS 231 - Systems Modeling I – 3 CH, SYS 232 - Systems Modeling II – 3 CH, SYS 233 - Systems Modeling III – 3 CH, SYS 241 - Dynamic Data Visualization – 3 CH	Master's Degree with 18 hours Systems Engineering	

New Program Proposal

Abbreviations: (FT, PT): Full-Time, Part-Time; (D, UN, UT, G, DU): Developmental, Undergraduate Nontransferable, Undergraduate Transferable, Graduate, Dual: High School Dual Enrollment
Course Modality: (IP, OL, HY, OCIS): In-Person, Online, Hybrid, Off-Campus Instructional Site

C. Equipment

Will any special equipment be needed specifically for this program? **Yes ☐ No ☒**

If ***yes***, list the special equipment and include all special equipment costs in the ***Business Plan, Line 8***:

D. Facilities

Will new facilities or renovations to existing infrastructure be required specifically for the program? **Yes ☐ No ☒**

If ***yes***, describe the new facilities or renovations and include all *new* facilities and/or *renovation* costs in the ***Business Plan, Line 9***:

E. Assistantships/Fellowships

Will the institution offer any assistantships specifically for this program? **Yes ☐ No ☒**

If ***yes***, provide the number of assistantships to be offered and include all *new* costs for assistantships in the ***Business Plan, Line 10.***

Explain the function of the Assistantships (i.e., teaching, research, etc.)?:

F. Library

Will any **additional** library resources be purchased to support the program? **Yes ☒ No ☐**

If ***yes***, briefly describe new resources to be purchased and include the cost of new library resources in the ***Business Plan, Line 11***:

The library collection currently offers foundational resources that support the proposed collaborative Systems Engineering Technology program. The library provides a number of printed and electronic resources to meet the needs of students enrolled in the career tech programs. The faculty, staff, and students have access to electronic resources provided by the Alabama Virtual Library (AVL). Individuals are provided with a username and log in for access of these materials. AVL is collection of electronic databases available to citizens of the State of Alabama and provides online access to essential information resources. Electronic resources can be accessed in the library or through the library's website. Printed resources can be found using the library catalog.

G. Accreditation Expenses

If programmatic accreditation was indicated above, please include all accreditation costs in the ***Business Plan, Line 12*** and itemize and explain below:

H. Other Costs

Please include all other costs incurred with program implementation, such as marketing or recruitment, in the ***Business Plan, Line 13*** and explain below:

III. Program Revenue and Funding

A. Tuition Revenue: Please describe how you calculated the tuition revenue that appears in the ***Business Plan, Line 17***. Specifically, did you calculate using cost per credit hour or per term?Did you factor in differences between resident and non-resident tuition rates?
Note: Tuition Revenue should be proportional to total enrollment.

Tuition and fees as of now is $187 per credit hr., we just got approval to up the fees, so the total beginning spring 2026 will be $192 per credit hour.

B. We calculated full-time tuition based on 12 credit hours, and part time tuition based on 6 credit hours. We didn't include the out-of-state tuition, so the numbers don't inflate too much.

B. External Funding: Will the proposed program require external funding (*e.g.*, Perkins, Foundation, Federal Grants, Sponsored Research, etc.)? **Yes ☐ No ☒**

If ***yes***, please include all external funding in the ***Business Plan, Line 18*** and explain specific sources and funding below:

C. Reallocations: For each year will tuition revenue and/or external funding cover projected expenses? **Yes ☐ No ☒**

If ***not***, budget reallocation may be required. Please include all reallocations in the ***Business Plan, Line 19*** and describe below how your institution will cover any shortfalls in any given year.

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Drake State Community & Technical College

PROGRAM: Cybersecurity *Select Level: Associate*

ESTIMATED *NEW* EXPENSES TO IMPLEMENT PROPOSED PROGRAM

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**TOTAL**
FACULTY								0
STAFF								0
EQUIPMENT								0
FACILITIES								0
LIBRARY								0
ASSISTANTSHIPS								0
OTHER								0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

***NEW* REVENUES AVAILABLE FOR PROGRAM SUPPORT**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**TOTAL**
REALLOCATIONS								0
EXTRAMURAL								0
TUITION	27768	27768	27768	27768	32040	29904	32040	205056
TOTAL	**27768**	**27768**	**27768**	**27768**	**32040**	**29904**	**32040**	**205056**

ENROLLMENT PROJECTIONS

Note: "New Enrollment Headcount" is defined as unduplicated counts across years.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**AVERAGE**
FULL-TIME HEADCOUNT	Year 1 - No data reporting required	8	10	8	10	10	10	9.333333333
PART-TIME HEADCOUNT	Year 1 - No data reporting required	10	5	10	10	8	10	8.833333333
TOTAL HEADCOUNT	Year 1 - No data reporting required	18	15	18	20	18	20	18.16666667
NEW ENROLLMENT HEADCOUNT	Year 1 - No data reporting required	10	10	10	10	10	10	10

DEGREE COMPLETION PROJECTIONS

Note: Do not count Lead "0"s and Lead 0 years in computing the average annual degree completions.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**AVERAGE**
DEGREE COMPLETION PROJECTIONS	Year 1 - No data reporting required	2	7	8	8	10	10	7.5

Undergraduate Curriculum Plan

Undergraduate Curriculum Checklist:

1. Overview ☑
2. Components ☑
3. Options (as required) ☐

1. Undergraduate Overview

Enter the credit hour value for all applicable components (N/A if not applicable).
The credit hours MUST match the credit hours in the Curriculum Components table.

Curriculum Overview of Proposed Program	
Credit hours required in **General Education**	16
Credit hours required in **Program Courses & Required Electives**	27
Credit hours in **Program Options (concentrations/specializations/tracks)**	
Credit hours in **Free Electives**	18
Credit hours in required **Capstone/Internship/Practicum**	
Total Credit Hours Required for Completion:	

Maximum number of credits that can be transferred in from another institution and applied to the program:	12
Intended program duration in semesters for full-time students:	6
Intended program duration in semesters for part-time students:	12

	YES	NO
Does the program require students to demonstrate industry-validated skills, specifically through an embedded industry-recognized certification, structured work-based learning with an enployer partner, or alignment with nationally recognized industry standards?:	☐	☑

If **yes**, please explain (i.e., number of hours required, etc.):

	YES	NO
Does the program inlcude any concentrations/ tracks/ options?	☐	☑

If **yes**, please explain (i.e., define):

2. Undegraduate Components

Please provide all course information as indicated in the following table. Indicate new courses with "Y" in the associated column. If the course includes a required work-based learning component, such as an internship or practicum course, please indicate with a "Y" in the WBL column.

Insert Additional Rows as Needed				
Institution:	Drake State Community & Technical College			
Program Name:	System Engineering Technology (SET)			
Program Level:	UNDERGRADUATE (ASSOCIATE)			
Curriculum Components of Proposed Program				
Course Number	**Course Name**	**Credit Hours**	**New? (Y)**	**WBL? (Y)**
General Education Courses		**16**		
Area I	Written Composition	3		
Area II	Humanities and Fine Arts	3		
Area III	Natural Science and Mathematics	7		
Area IV	History, Social, and Behavioral Sciences	3		
Program Courses and Required Electives		**27**		
CIS 202	Python Programming	3		
CIS 222	Database Systems Management	3		
CIS 235	Data Analytics	3		
SYS 101	Intro to Systems Engineering	3		
SYS 221	MBSE in Digital Environment	3	Y	
SYS 231	Systems Modeling I	3	Y	
SYS 232	Systems Modeling II	3	Y	
SYS 233	Systems Modeling III	3	Y	
CIS 284	CIS Internship	3		
Program Options (enter total credit hours from all options below)				
Free Electives		**18**		
CIS 134	IT Fundamentals	3		
CIS 149	Digital Literacy	3		
CIS 171	Linux/Unix I	3		
CIS 172	Linux/Unix II	3		
CIS 199	Network Communications	3		
CIS 238	Cloud Computing	3		
CIS 249	Microcomputer Operating Systems	3		
CIS 270	CISCO CCNA I	3		
CIS 271	CISCO CCNA II	3		
CIS 272	CISCO CCNA III	3		
CIS 276	Server Administration	3		
CIS 277	Network Services Administration	3		
CIS 280	Network Security	3		
CIS 281	Systems Analysis and Design	3		
CIS 284	CIS Internship	3		
ORI 101	Orientation to College	1		
BSS 220	Professional Transition	1		

Capstone/Internship/Practicum				
Total Credit Hours Required for Completion:		**61**		