NEW PROGRAM PROPOSAL FORM

Name of Institution: **Winthrop University**

Name of Program (include degree designation and all concentrations, options, or tracks):

Bachelor of Science in Applied Software Development

Program Designation:

- ☐ Associate's Degree
- ☐ Master's Degree
- ☒ Bachelor's Degree: 4 Year
- ☐ Specialist
- ☐ Bachelor's Degree: 5 Year
- ☐ Doctoral Degree: Research/Scholarship (e.g., Ph.D. and DMA)
- ☐ Doctoral Degree: Professional Practice (e.g., Ed.D., D.N.P., J.D., Pharm.D., and M.D.)

Consider the program for supplemental Palmetto Fellows and LIFE Scholarship awards?

- ☒ Yes
- ☐ No

Proposed Date of Implementation: **August 2020**

CIP Code: **11.0701**

Delivery Site(s): **Winthrop Main Campus**

Delivery Mode:

- ☒ Traditional/face-to-face
  *select if less than 25% online
- ☐ Distance Education
  - ☐ 100% online
  - ☐ Blended/hybrid (50% or more online)
  - ☐ Blended/hybrid (25-49% online)
  - ☐ Other distance education (explain if selected)

Program Contact Information (name, title, telephone number, and email address):

Stephen Dannelly, PhD
Chair, Computer Science Department
803-323-4811
dannellys@winthrop.edu

Institutional Approvals and Dates of Approval (include department through Provost/Chief Academic Officer, President, and Board of Trustees approval):

Department of Computer Science and Quantitative Methods	- 2/15/2019
College of Business Administration Curriculum Committee	- 2/25/2019
College of Business Administration Faculty Conference	- 3/1/2019
University Committee on Undergraduate Curriculum	- 3/22/2019
University Academic Council	- 4/8/2019
University Faculty Conference	- 4/19/2019
Provost	January 15, 2020
President	January 28, 2020

Winthrop Board of Trustees pending approval at March 13, 2020 meeting

Background Information

State the nature and purpose of the proposed program, including target audience, centrality to institutional mission, and relation to the strategic plan.

Purpose:

The proposed Bachelor of Science in Applied Software Development degree program is designed to be completed in two years and is targeted at students that have completed the Associate in Applied Science in Computer Technology – Programming Specialization degree (AAS.CPT.PROG) from a South Carolina Technical College.

This new program will require Winthrop to add zero new courses, zero additional faculty or staff, and zero extra facilities. The new program would utilize existing course and facility capacities to enable Associate degree holders to earn a Bachelor's degree in two years.

Winthrop currently offers three computing-related degree programs:

- BS in Computer Science (Computer Accreditation Commission of ABET accredited)
- Computer Information Systems concentration of the BS in Business degree (AACSB accredited)
- BS in Digital Information Design, jointly administered by Computer Science, Marketing, Design, and Mass Communications departments

Those three programs share several computing courses. Thus, most of our Computer Science courses are designed to meet the needs of a variety of majors. Meanwhile, like most Computer Science programs, we have more under-classmen than upper-classmen. All of those factors result in some excess capacity in our upper-division computer science courses. We seek to fill those existing empty seats with Associate Degree holders who want to attain a Bachelor of Science degree from a high-quality program in a reasonable amount of time.

While the S.C. Tech Colleges' programming degree programs produce very good entry-level programmers that are in high demand and earn good salaries, employment projections for software development occupations in the US indicate that degrees requiring an Associate Degree could be increasingly outsourced. Meanwhile, software development occupations requiring Bachelor of Science degrees will significantly increase in demand. Thus, we believe the proposed program would strengthen the prospects for Associate Degree holders.

Program Content:

The first attachment to this proposal is Winthrop's catalog copy for the degree. The average AAS.CPT.PROG degree holder is expected to enter the program with 60 of the 120 credits needed for the proposed B.S. degree. Thus, the program could be completed in 4 semesters.

The proposed program would accept 30 credits of CPT and IST courses from the AAS.CPT.PROG degree. Those courses are a broad array of programming, hardware, and algorithm design courses that overlap the content of Winthrop's freshmen and sophomore computer science courses. Thus, those CPT and IST courses are sufficient to prepare students to take our upper-division CSCI courses. The math and general education credits of the AAS.CPT.PROG degree would partially satisfy Winthrop's general education program.

The Computer Science course requirements for the proposed degree are a close subset of the courses required for the existing BS in Computer Science degree. A significant difference between the proposed

degree and the existing degree is that the proposed degree requires less math and science. CAC/ABET accreditation standards require 30 credits of advanced math and science which this degree will not include.

Relation to the University's Strategic Plan:

Increasing enrollment in existing courses while offering a program whose graduates are in high demand by the South Carolina business community aligns well with Winthrop's Strategic Plan.

Goal 1 of Winthrop's Strategic Plan states,

> Support inclusive excellence by expanding our impact on students and our communities through enrollment growth and increases in retention and graduation rates.

Sub-goal 1.2 further states,

> Enrich our academic program mix by developing new and innovative programs (degree programs, certificate programs, continuing education programs) and by refining existing academic programs to meet the emerging needs and interests of diverse student populations and the community.

Assessment of Need

Provide an assessment of the need for the program for the institution, the state, the region, and beyond, if applicable.

Software developers are used by a wide variety of companies in South Carolina, from software development companies, to health care providers, manufacturers, insurance companies, state agencies, and many more. The proposed program will deliver graduates capable of beginning or furthering their careers with a variety of titles, including programmer, software developer, systems analyst, app developer, web designer, among others.

According to the US Bureau of Labor Statistics, there are approximately 3060 computer programmers in South Carolina, which make up 1.48 of every 1000 jobs in South Carolina with an average annual salary of $81,940. (For comparison purposes, that is nearly identical to the combined number of "special ed, kindergarten, and elementary school teachers" in South Carolina.) In the Charleston area that job density is 2.05; Columbia area is 1.69; and the Greenville area is 1.26.

Also according to the US BLS, "Job prospects will be best for programmers who have a **bachelor's degree** or higher and knowledge of a variety of programming languages. Keeping up to date with the newest programming tools will also improve job prospects."

Employment of software developers is projected to **grow 21%** from 2018 to 2028. In South Carolina, those jobs currently make up 2.22 out of every 1000 jobs with an average salary of $90,830. Also currently in South Carolina, 3.46 of every 1000 jobs is a computer systems analyst, earning an average of $80,200. Nationally, those jobs are expected to **grow 9%** from 2018 to 2028.

Transfer and Articulation

Identify any special articulation agreements for the proposed program. Provide the articulation agreement or Memorandum of Agreement/Understanding.

Existing articulation agreements already include all the math, English, History, etc. courses in the AAS.CPT.PROG degree. Winthrop will accept other IST and CPT courses as a block of credit. This program has been developed with close consultation with York Technical College. A complete transfer pathway is being developed for students planning to complete the program.

Employment Opportunities

Occupation	State		National		Data Type and Source
	Current Number of Jobs	10 year Employment Projection	Current Number of Jobs	10 year Employment Projection	
computer programmer (associate degree level)	3060	-7%	250,300	-7%	US Bureau of Labor Statistics *Occupational Outlook Handbook*
software developer / applications	4580	+21%	1,365,500	+21%	
web developers	1310	+13%	160,500	+13%	
database administrator	820	+9%	116,900	+9%	
computer systems analyst	7140	+9%	633,900	+9%	

Supporting Evidence of Anticipated Employment Opportunities
Provide supporting evidence of anticipated employment opportunities for graduates.

Using SCWorks.org on March 5, 2020, data for "computer programmer" positions indicated 333 job openings with only 60 candidates for those jobs. Most of the commonly required skills ("Advertised Detailed Technology") listed on SCWorks, such as Structured Query Language, C#, and JavaScript, are components of the proposed degree program.

As the table above indicates, the number of software development positions in South Carolina is expected to increase in most subcategories. SCWorks indicated that 57% of those jobs require a minimum of a bachelor's degree, while 26% require a minimum of an associate's degree. Federal data indicates that a few lower level positions, such as "computer programmer", are expected to decrease in the next 10 years, but those positions are usually filled by Associate Degree holders. Meanwhile, most software development positions, particularly those requiring a BS degree, are expected to increase significantly. Thus, the need for this program which encourages Associate Degree holders to move seamlessly into a BS degree program.

Description of the Program

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2020-2021	10	10	0
2021-2022	15	15	0
2022-2023	20	20	0
2023-2024	25	25	0
2024-2025	30	30	0

Explain how the enrollment projections were calculated.

York Technology College (YTC) is expected to be the primary feeder for this program. YTC currently graduates approximately 25 students each year from their AAS.CPT.PROG degree. YTC indicates that half to three-quarters of those graduates have expressed an interest in continuing their education, and YTC estimates about 10 students each year will follow through with enrolling in the proposed degree program.

We expect modest enrollment of around 10 new students in the first year, then increasing as the program becomes better known as an option to students who are beginning their Associate's degree work. Winthrop will work with York Tech (and any interested college) in developing a clear plan of study for students who start their AAS degree with the intention of enrolling in Winthrop's degree program.

Winthrop does not offer upper-division CSCI courses in the summer, other than CSCI 491 Internship. Some students in the proposed program may wish to complete university general education courses in their single summer at Winthrop. Thus, we expect summer enrollment to be near zero each year.

Since the program is designed to be completed in a two year period, the 10 students who start in Fall 2020 would be expected to graduate in May 2022. Considering our usual junior to senior year retention, we would expect 7 or 8 of the first 10 to graduate in May 2022.

Besides the general institutional admission requirements, are there any separate or additional admission requirements for the proposed program? If yes, explain.

☒Yes

☐No

Admission into the proposed program will require completion of the Associate in Applied Science in Computer Technology – Programming Specialization degree (AAS.CPT.PROG) from a South Carolina Technical College or an equivalent program.

Curriculum

New Courses

List and provide course descriptions for new courses.

No New Courses will be created for this program.
See first attachment for catalog copy of course requirements.

Total Credit Hours Required: 120

Curriculum by Year					
Course Name	**Credit Hours**	**Course Name**	**Credit Hours**	**Course Name**	**Credit Hours**
Year 1 (Junior year)					
Fall		**Spring**		**Summer**	
HMXP 102 Human Experience	3	CRTW 201 Critical Reading, Thinking, and Writing	3		
CSCI 355 Database	3	Humanities & Arts	3		
CSCI 4XX or 3XX elective	3	CSCI 365 Information Security	3		
Natural Science	4	CSCI 311 Computer Architecture	4		
Humanities & Arts	3	CSCI 327 Social Implications of Computing	3		
Total Semester Hours	16	Total Semester Hours	16	Total Hours	
Year 2 (Senior year)					
Fall		**Spring**		**Summer**	
CSCI 475 Software Engineering I (Sr capstone)	3	CSCI 476 Sw Eng II (Sr capstone)	3		
CSCI 466 Networking	3	CSCI 411 Operating Systems	3		
CSCI 3XX or 4XX elective	3	CSCI 3XX or 4XX elective	3		
Social Science	3	global general education	3		
general elective	3	general elective	3		
Physical Education	1				
Total Semester Hours	16	Total Semester Hours	15	Total Hours	

Similar Programs in South Carolina
offered by Public and Independent Institutions

Identify the similar programs offered and describe the similarities and differences for each program.

There are no similar programs in South Carolina that are specifically designed to build on the existing Associate of Applied Science degree program.

Faculty

Rank and Full- or Part-time	Courses Taught for the Program	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Relevant Professional Experience
Assistant Professor, full-time	CSCI 355 Database CSCI 365 Information Security	PhD Information Technology UNC - Charlotte 2013	6 years in higher ed; several years of part-time work in IT
Associate Professor & Dept Chair, full-time	CSCI 327 Social Implications of Computing CSCI 440 Computer Graphics CSCI 521 Software Project Management	PhD Computer Sci & Engineering Auburn University 1995	24 years in higher education
Associate Professor, full-time	CSCI 411 Operating Systems CSCI 466 Networking	PhD Computer Science UNC - Charlotte 2010	9 years in higher ed; 20 years at IBM
Instructor, full-time	CSCI 311 Computer Architecture	Master of Science, Electrical Engineering, Massachusetts Institute of Technology, 1980	16 years in higher education, plus 25 years in industry
Professor and Associate Dean, full-time	CSCI 475 Software Engineering I CSCI 476 Software Engineering II	PhD Computer & Info Tech Florida State University 1992	17 years in higher ed; 20 years at Dept. of Defense
Associate Professor, full-time	CSCI 432 Computer Science Theory CSCI 451 Mobile App Design	PhD Computer Science North Carolina State 2005	
Assistant Professor, DIFD Director full-time	CSCI 441 Web App Design	PhD Computing and Info Systems UNC - Charlotte PhD Education Administration Southern Illinois-Carbondale	17 years in higher education, plus multiple temporary positions as a researcher in industry

Total FTE needed to support the proposed program:
Faculty: 2.5
Staff: ..33
Administration: .33

Faculty, Staff, and Administrative Personnel
Discuss the Faculty, Staff, and Administrative Personnel needs of the program.

Faculty: The 7 computer science faculty teach and advise across three degree existing programs – the BS in Computer Science, the BS in Digital Information Design, the Computer Information Systems concentration in the BS in Business Administration – and this proposed BS in Applied Software Development. Each faculty will dedicate time to each program offered in the department; therefore, the portion of FTEs expected towards the program will be 2.5.

Staff: The University already supplies staff to support equipment and facilities for the other computing programs. Thus, only a portion of a staff person will be needed to support the additional students enrolled in the proposed program. The additional students are expected to fill existing capacity, not increase the need for staff or equipment. The department does not have dedicated IT staff. No additional support is needed. See "Facilities" section below.

Administration: The existing administration in the Department of Computer Science and Quantitative Methods, and the College of Business Administration will provide support to the proposed program.

Resources

Library and Learning Resources
Explain how current library/learning collections, databases, resources, and services specific to the discipline, including those provided by PASCAL, can support the proposed program. Identify additional library resources needed.

The Ida Jane Dacus Library is an integral part of the university's instructional program. The primary goal of the Winthrop University Library is to support the instructional and research activities of the Winthrop University academic community. The Winthrop Library is the primary provider on campus of scholarly information in all forms from print to electronic. In affirming its belief in the mission and goals of the university, the library is pledged to provide the information quickly, efficiently, and in sufficient depth to promote the excellence of all academic programs offered by the university.

In addition to the traditional reference assistance available in Dacus, material can be requested from other institutions through interlibrary loan. The Library is constantly reviewing and upgrading its resources, especially the electronic indexes and databases, which are upgraded frequently. New courses and programs, accreditation standards as well as courses dropped from the curriculum are reviewed.

A portion of the library's annual book budget is allocated to the Computer Science department for the purpose of purchasing books and instructional audio-visual materials. The department selects a person to serve in the capacity of departmental liaison. The liaison's responsibility is to monitor departmental expenditures and make sure the teaching and research needs of the university are being supported. Departmental faculty are encouraged to submit requests for needed material.

The library receives over 100 indexes and databases in paid electronic subscriptions. Relating to computing, the library maintains electronic subscriptions to the *ACM Portal: The ACM Digital Library*, *MathSciNet*, and *ScienceDirect*. The library has an institutional subscription to IEEE publications.

Student Support Services
Explain how current academic support services will support the proposed program. Identify new services needed and provide any estimated costs associated with these services.

All new students are required to participate in orientation. A primary topic of orientation is coursework, including general education and degree requirements. Before a computing student takes his/her first course at Winthrop, they have met with a CS faculty member about their first semester's coursework. All existing Winthrop students are assigned a faculty advisor. Students must meet with their faculty advisor before they are allowed to sign up for the next semester's classes. (The registration system locks out a student until their advisor lifts the student's advising flag.) Therefore, all students must meet with their faculty advisor at least once a semester. All faculty members have student advisees. Effectiveness of advising is a specific item on the faculty annual report and the annual faculty performance evaluation. If a student has a question about coursework at any time throughout the semester, they can go see their advisor, the department chair, or any CS faculty member. All faculty maintain at least 8 hours of Office Hours each week.

Students may also go to the college's Student Services Office to ask questions during regular working hours. That office has two full-time advisors with additional Graduate Assistant advisors. That system advises over 900 students in the college, so a few more students for the proposed program will not impact academic support effectiveness.

All Winthrop University students can utilize the resources of the Writing Center, the Math Tutorial Center, the Academic Success Center, and the Health and Counseling Center.

Physical Resources/Facilities
Identify the physical facilities needed to support the program and the institution’s plan for meeting the requirements.

Winthrop offers 31 computer labs. Of those, 16 are instructional labs and the rest are general access or mixed use. Five of the labs are entirely Mac while the other 26 are heavily PC. This represents a total of 475 PC’s and 75 Macs. While computing students may use any of the 15 general access computer labs on campus, Thurmond 114, Thurmond 115, and Carroll 215 are exclusively reserved for computing majors. These students use their university ID card to access these labs. No instruction is scheduled in these labs - they are for students to use when the students want to use them. These rooms contain 24 dual-boot PCs, a student-built 32-node Beowulf cluster, networking equipment (switches and a router), industrial 3D printers, and a large monitor for group work. Equipment is managed centrally by the Division of Computing and Information Technology, which has 23 FTE employees. Bulk ordering and servicing equipment results in substantial savings. The savings allow for higher specifications (more powerful computers) while staying within budget. An established rotation plan provides powerful equipment that is replaced on a predictable schedule. This assures that laboratory computers never become obsolete.

Equipment
Identify new instructional equipment needed for the proposed program.

No additional instructional equipment will be needed.

Impact on Existing Programs

Will the proposed program impact existing degree programs or services at the institution (e.g., course offerings or enrollment)? If yes, explain.

☐Yes

☒No

Financial Support

Sources of Financing for the Program by Year												
	1st		2nd		3rd		4th		5th		Grand Total	
Category	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**
Tuition Funding	153,060	153,060	229,590	229,590	306,120	306,120	382,650	382,650	459,180	459,180	1,530,600	1,530,600
Program-Specific Fees	1,500	1,500	2,250	2,250	3,000	3,000	3,750	3,750	4,500	4,500	15,000	15,000
Special State Appropriation												
Reallocation of Existing Funds												
Federal, Grant, or Other Funding												
Total	154,560	154,560	231,840	231,840	309,120	309,120	386,400	386,400	463,680	463,680	1,545,600	1,545,600
Estimated Costs Associated with Implementing the Program by Year												
	1st		2nd		3rd		4th		5th		Grand Total	
Category	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**
Program Administration and Faculty/Staff Salaries												
Facilities, Equipment, Supplies, and Materials	1,500	1,500	2,250	2,250	3,000	3,000	3,750	3,750	4,500	4,500	15,000	15,000
Library Resources												
Institutional Overhead	61,224	61,224	91,836	91,836	122,448	122,448	153,060	153,060	183,672	183,672	612,250	612,240
Total	62,724	62,724	94,086	94,086	125,448	125,448	156,810	156,810	188,172	188,172	627,240	627,240
Net Total (Sources of Financing Minus Estimated Costs)	91,836	91,836	137,754	137,754	183,672	183,672	229,590	229,590	275,508	275,508	918,360	918,360

Note: New costs - costs incurred solely as a result of implementing this program. Total costs - new costs; program's share of costs of existing resources used to support the program; and any other costs redirected to the program.

Budget Justification

Provide an explanation for all costs and sources of financing identified in the Financial Support table. Include an analysis of cost-effectiveness and return on investment and address any impacts to tuition, other programs, services, facilities, and the institution overall.

University revenue will increase via additional students paying tuition and course lab fees. Most upper-division CSCI courses have a $25 course lab fee. Annual in-state tuition is $15,306. Tuition Funding is calculated based on the enrollment projections and the annual in-state tuition cost.

Additional costs in equipment, faculty or staff are very unlikely.

The costs listed in the facilities, supplies, materials category reflect the lab fee revenue that is used for supplies and consumable materials in the computer labs.

The Institutional Overhead cost is calculated at 40% of the Tuition revenue and represents the amount allocated to the general operation of the University – utilities, maintenance, administration, etc.

Very little competition with other Winthrop degrees is expected. Most CS, CIFS, and DIFD students begin at Winthrop as freshmen. This degree is not open to that audience.

Existing computing facilities can accommodate the expected influx of students. Students in upper-division CSCI courses pay modest course fees to help maintain computing equipment.

Evaluation and Assessment

Program Objectives	Student Learning Outcomes Aligned to Program Objectives	Methods of Assessment
Graduates will communicate effectively in a variety of professional contexts. (Winthrop designates CSCI 327 as an "oral communication" and as a "writing intensive" course. CSCI 475/476 require presentations to external customers. Other courses require minor oral presentations.)	communicate in written forms	ethics writing assignment - CSCI327
	communicate orally	research presentation - CSCI327
Graduates will design, implement, and evaluate computing-based solutions to meet a given set of computing requirements. (The following core courses all require substantial design and development projects: CSCI 355 Database, CSCI 365 Security, CSCI 411 Operating Sys, CSCI 466 Networking, CSCI 475/476 Software Engineering I and II.	analysis of a significant problem for a real-world customer	Systems Requirement Specification - CSCI 475
	design of an efficient and effective solution	design document - CSCI 475
	implement a very large application	external customer satisfaction - CSCI 476
	work in team to develop a Systems Requirement Specification	evaluation of each individual's teamwork skills, by instructor - CSCI 475

Graduates will function effectively as a member or leader of a team. (All core courses require group work. Additionally, CSCI 475/476 is a senior capstone 9-month group development project.)	work in team to implement a large project	evaluation of each individual's teamwork skills, by peers - CSCI 476
Graduates will recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. (CSCI 327 is our existing ethics course for ABET accreditation. Most other CSCI courses include topics on professional conduct, such as ethical hacking in CSCI 365.)	apply general ethical principles to computing problems	group debate - CSCI 327
	understanding of US and international laws for intellectual property and personal privacy	exam questions - CSCI 327

Explain how the proposed program, including all program objectives, will be evaluated, along with plans to track employment. Describe how assessment data will be used.

Because the coursework for the proposed program will be shared with the existing ABET-accredited BS in Computer Science coursework, the assessment program will parallel the SLOs specified by ABET. In short, we have been gathering data and using employer feedback to improve our CSCI courses for many years.

Accreditation and Licensure/Certification

Will the institution seek program-specific accreditation (e.g., CAEP, ABET, NASM, etc.)? If yes, describe the institution's plans to seek accreditation, including the expected timeline.

☐Yes

☒No

Will the proposed program lead to licensure or certification? If yes, identify the licensure or certification.

☐Yes

☒No

Explain how the program will prepare students for this licensure or certification.

If the program is an Educator Preparation Program, does the proposed certification area require national recognition from a Specialized Professional Association (SPA)? If yes, describe the institution's plans to seek national recognition, including the expected timeline.

☐Yes

☒No

Bachelor of Science in Applied Software Development

General Education Courses	Semester Hours
ACAD 101 *(COL101)* Principles of the Learning Academy	1
Shared Skills and Proficiencies	
Writing and Critical Thinking (A grade of C- or better is required in these courses)	
WRIT 101 *(ENG101)* Composition: Introduction to Academic Discourse	3
HMXP 102 The Human Experience: Who Am I?	3
CRTW 201 Critical Reading, Thinking and Writing	3
Oral Communication Met in major (CSCI 327) or (*SPC205*)	0
Technology Met in major (CSCI 101/*CPT170*)	0
Intensive Writing Met in major (CSCI 327)	0
*__Constitution Requirement__ (course may also be used for another requirement)	0-3
Physical Activity (choose from approved list)	1
Thinking Critically Across Disciplines	
Global Perspectives (choose from approved list)	3
Historical Perspectives (choose from approved list)	3
Introducing Students to Broad Disciplinary Perspectives	
Social Science (choose from approved list) (2 designators) (*ECO210*)	6
Humanities & Arts (choose from approved list) (2 designators)	6
Quantitative Skills and Natural Sciences	
Quantitative Skills (met in major with *MAT110* and *MAT165*)	0
Natural Science	3-4
TOTAL	**32-36**

Computing Technology Transfer Coursework	**30**
200-level CPT and IST courses that count toward the degree of Associate in Applied Science in Computer Technology – Programming (CPT 212,230,231,232,236,244,264 and IST 220,226,272)	

Requirements for the Major	
CSCI 101 Intro to Computers and Info Processing (*CPT170*)	1.5
CSCI 101 Labs, any three from 101A, 101B, 101C, 101D, 101F, 101I, 101N, 101P (*CPT170*)	1.5
MATH 141 Finite Probability and Statistics (*MAT165*)	3
MATH 151 Applied College Algebra (*MAT110*)	3
CSCI 311 Computer Architecture and Organization	4
CSCI 327 Social Implications of Computing	3
CSCI 355 Database Processing (*CPT242*)	3
CSCI 365 Information Security	3
CSCI 411 Operating Systems	3
CSCI 466 Network Processing	3
CSCI 475 Software Engineering I	3
CSCI 476 Software Engineering II	3
CSCI over 299 (max 3 hours from combination of 471, 491, 492)	9
TOTAL	**43**

General Electives	**11-15**
should include at least 6 credits from courses numbered > 299	
TOTAL	**120**

Course numbers in italics represent the transfer course number from the SC Technical College System.

York Technical College
One College. Many Opportunities.

January 30, 2020

Dr. R. Stephen Dannelly
Department Chair and Associate Professor of Computer Science
Winthrop University

Dear Dr. Dannelly,

It is with great pleasure I share the following feedback from James M. Thomas, Associate Dean, Business and Information Technology, York Technical College, after he evaluated your proposal for the BS in Applied Software Development.

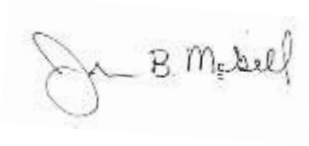
James Thomas states:

- "The Winthrop Bachelor of Science in Applied Software Development degree proposal represents a huge opportunity for the students completing the York Technical College two-year programming degree. The degree allows our students to continue their software development studies at Winthrop allowing them to become better software developers and increase their value to the workforce and marketability in the competitive IT industry, while simultaneously addressing the continued rising costs of higher education since all sixty-six credit hours earned at York Technical College are transferable.
- The proposed Winthrop Bachelor of Science in Applied Software Development degree provides a huge benefit to our two-year programming students here at York Technical College. All sixty-six credit hours of our current Associate of Applied Science in Computer Technology Programming Specialization degree can be transferred to Winthrop. With only sixty hours of additional study at Winthrop, students can continue to make themselves more marketable and valuable in the IT industry.
- The proposed Winthrop Bachelor of Science in Applied Software Development degree is a common-sense approach to the rising cost of higher education that allows students to receive a two-year programming degree at York Technical College and at that point students then have the option of entering the workforce or continuing their studies at Winthrop, without having to redo any of the work they have done York Technical College. All sixty-six hours of the current York Technical College two-year programming degree transfers seamlessly to Winthrop, requiring that students only need to complete

sixty more hours of study to obtain their four-year Bachelor of Science in Applied Software Development degree. This is a win-win situation for our students, both institutions, our community, and the IT workforce."

We enjoyed collaborating with you on this worthwhile endeavor to benefit the students and community we serve and look forward to working with you and your Winthrop University Colleagues on more opportunities in the future.

Sincerely,



John B. McGill
Associate Dean, Educational Partnerships
York Technical College