BACCALAUREATE PROPOSAL
APPLICATION Form No. BAAC-02

Section 1007.33(5)(d), Florida Statutes, and Rule 6A-14.095, F.A.C., outline the requirements for a Florida College System baccalaureate program proposal. The completed Proposal form shall by submitted by the college president to the Chancellor of the Florida College System at ChancellorFCS@fldoe.org. In addition, a printed version shall be mailed to the Division of Florida Colleges at 325 West Gaines Street, Suite 1544, Tallahassee, Florida 32399-0400.

The proposal requires completion of the following components:

- Program summary
- Program description
- Workforce demand and unmet need
- Planning process
- Enrollment projections and funding requirements
- Student costs: tuition and fees

- Program implementation timeline
- Facilities and equipment specific to program area
- Library and media specific to program area
- Academic content
- Program termination
- Appendix tables
- Supplemental materials

Florida College System Institution Name: Miami Dade College (MDC)
Florida College System Institution President: Dr. Rolando Montoya

PROGRAM SUMMARY	
1.1 Program Name:	Cybersecurity
1.2 Degree type:	☒ Bachelor of Science ☐ Bachelor of Applied Science
1.3 How will the program be delivered (check all that apply):	☒ Face-to-face ☒ Hybrid ☐ Online only
1.4 List the counties in the college's service district:	Miami Dade County, Workforce District 23
1.5 Degree CIP code (4 or 6 digit):	11.1003
1.6 Anticipated program implementation date:	Spring 2021
1.7 What is the primary associate degree pathway for admission to the program?	Associate in Science in Cybersecurity
1.8 Is the degree a STEM focus area?	☒ Yes ☐ No
1.9 List program concentration(s) (if applicable):	N/A
1.10 Will the program be designated such that an eligible student will be able to complete the program for a total cost of no more than $10,000 in tuition and fees?	☒ Yes ☐ No

Incorporated in Rule 6A-14.095, Site Determined Baccalaureate Access Effective August, 2015

PROGRAM DESCRIPTION

2.1   Describe the program.

The Bachelor of Science (BS) degree in Cybersecurity is built on the National Initiative for Cybersecurity Education (NICE) Framework and the Center of Academic Excellence in Cyber Defense Education (CAE-CDE) program for post-secondary education, which is sponsored by the National Security Agency (NSA) and the Department of Homeland Security (DHS). These two pillars provide an inventory of knowledge units in cybersecurity, used as tools to gauge the breadth and strength of the program's cybersecurity curriculum.

Students in this program will gain detailed understanding and hands-on skills regarding the tools and protocols needed to use and manage cybersecurity infrastructure, risks, and vulnerabilities in real-world situations. The program curriculum totaling 120 credits will include upper level courses in information security management, ethical hacking, network defense, penetration testing, computer forensics, data analysis, virtualization, risk management and ethics in cybersecurity. This compilation of courses coupled with general education courses provides the critical thinking, and analytical and technical skills to execute security measures to protect an organization from the growing threats of infiltrations and cyberattacks. According to RiskBased Security, these growing threats led to 3,813 breaches that exposed 4.1 billion records from the start of 2019 to June 30th. This was a 54% increase compared to the same time period for 2018.[1]

Miami-Dade County had 100,321 employment establishments in 2018, representing 14.3% of Florida's industries.[2] Building an infrastructure to reduce cybersecurity risks across the County's diverse industries starts—among other initiatives—with the creation of an educational pipeline. To this end, Miami Dade College (MDC) has engaged in collaborations with Miami-Dade County Public Schools by offering summer camps to its students, training its teachers to integrate cybersecurity in their curriculum, and offering security courses for dual-enrollment. During the past two years, the College additionally created a College Credit Certificate in Network Security and an Associate in Science in Cybersecurity. To support these offerings, the College launched the Cybersecurity Center of the Americas, a state-of-the-art facility where students face real-time cyberattacks in a simulated Security Operations Center. Through the submission of this baccalaureate, the College aims to expand its pipeline, allowing its students to advance their education in cybersecurity and contribute to the creation of a hub to counter the risks the County's establishments face. Students with the Associate in Science in Cybersecurity will have a seamless pathway to the baccalaureate, needing to complete 60 additional credits. Admissions requirements consists of completing an MDC admissions application and having a minimum letter grade of "C" in pre-requisite coursework consisting of four technology courses. The program is also able to accommodate students with an Associate in Arts degree or similar Associate in Science programs from regional accredited institutions (see section 10.1 - Academic Content for details).

A foundation to build enrollment for this proposed baccalaureate is already in place, not only because of the aforementioned academic programs and Cybersecurity Center, but also due to the College's technology faculty striving to contribute to its success. It is expected that during

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[1] Risk Based Security, Inc. (2019, August). *2019 MidYear QuickView Data Breach Report*. Retrieved from https://pages.riskbasedsecurity.com/2019-midyear-data-breach-quickview-report

[2] Florida Legislature, Office of Economic and Demographic Research. (2020). *County Profiles Miami-Dade County.* [Employment by Industry, 2018]. Retrieved from http://edr.state.fl.us/Content/area-profiles/county/miamidade.pdf

the first year of the program, enrollment is projected to consist of 60 students. For year 2 and 3, enrollment is expected to increase to 90 and 120, respectively. The student to teacher ratio for both courses and laboratories is projected at 30:1 for all three years. Affordability is a benefit to increase access to this degree and contribute to the realization of projected enrollment with its estimated cost of $14,746.56 for the total 120 credits in tuition and fees (based on 2019-2020 academic year). The B.S. in Cybersecurity is structured such that first-time in college students who are eligible for the College's American Dream Scholarship (ADS) can continue to their baccalaureate degree upon completion of the Associate degree. Since there is no tuition cost to the ADS recipient for the associate degree, those who go on to the B.S. in Cybersecurity will only have to cover costs for the upper division portion of their B.S. degree thereby making the total cost to the student under $10,000.

The employability of graduates in the field of cybersecurity is directly linked to the breadth and depth of their knowledge using tools and technologies relevant to the field, their hands-on experience in a real-world setting, as well as the industry certifications they hold. The proposed program in Cybersecurity will give students all the theoretical and practical knowledge they need as well as the opportunity to earn several industry standard certifications. The program will prepare students for multiple industry certifications such as Certified Information Security Manager, Certified Ethical Hacker and GIAC Network Forensic Analyst. These certifications coupled with the baccalaureate will open doors for graduates in the growing job market of cybersecurity, which for Region 23, CIP code 11.1003, it is expected to grow by 9.3% from 2019 to 2027 (summation of tables A.1.1 and A.1.1.2). Moreover, salaries for graduates are higher than the average with an estimated annual income of $82,144. Occupations within this CIP code include Computer and Information Systems Managers, Database Administrators, Network and Computer Systems Administrators, Computer Network Architects, and Computer Network Support Specialists, and Information Security Analysts.

MDC is prepared to meet the demand for graduates with the skills needed to enter occupations in cybersecurity and respectively build a desirable educational infrastructure to safeguard Miami-Dade County's strong economy. With 812 annual projected job openings and the average annual supply of 251 graduates by regional institutions, the workforce unmet need adds to 560. This number may indeed be deemed greater as out of the 251 graduates, only one graduates with a directly related degree under CIP 11.1003 (table A.1.3).

WORKFORCE DEMAND AND UNMET NEED

3.1   Describe the career path and potential employment opportunities for graduates of the program.

The Bachelor of Science (BS) in Cybersecurity program offers a pathway for students in the Associate in Science degree in Cybersecurity offered at Miami Dade College (MDC) and other Florida state colleges. An additional credential that students have an opportunity to incorporate as a stacked credential is MDC's College Credit Certificate in Network Security. These degree programs, coupled with industry certifications embedded in the baccalaureate, will broaden students' subject matter knowledge and skills needed for the cybersecurity job market. Graduates of the proposed program will be prepared for careers as Information Security Analysts ,Computer and Information Systems Managers, Database Administrators, Network and Computer Systems

Administrators, Computer Network Architects, and Computer Network Support Specialists. A compilation of Florida Department of Economic Opportunity (DEO) (table A.1.1) and EMSI labor market analytics (A.1.1.2), demonstrates these jobs have an average projected growth of 9.3% in Workforce Development Area 23 from 2019 to 2027.

Information Security Analysts, Security Operations Center (SOC) Analyst, Law Enforcement Agent Cyber Division, Vulnerability Analyst, Penetration Tester, Cyber Threat Intelligence Analyst, Cyber Security Incident Response Specialist, and Security System Administrators, are additional occupations common to graduates of cybersecurity programs that are in high demand. Research by Burning Glass Technologies shows that the need for cybersecurity talent in the United States is far outstripping supply, with high demand in businesses that are prevalent in South Florida—finance, health care, retail, and professional services. The same research revealed that the number of cybersecurity job postings has grown by 94% since 2013, compared to 30% for IT positions overall.[3] According to the U.S. Bureau of Labor Statistics, Information Security Analysts, an occupation primarily associated with cybersecurity, have a job outlook projection rate of 32% growth between 2018 and 2028, which is much faster than the national average of 5% for all occupations. Aside from job growth, annual income for this occupation also brings financial potential to future graduates, with a median income projected at $98,350.[4]

3.2   Describe the workforce demand, supply and unmet need for graduates of the program that incorporates, at a minimum, the shaded information from appendix tables A.1.1 to A.1.3.

Commensurate to the nation, the Florida Department of Economic Opportunity (DEO) reports the state's information technology industry cluster has maintained a healthy workforce with 31,428 establishments and employment of 286,214 in 2018. This cluster's employment increased by 14,697 jobs (+5.4 percent) over the prior year and it has a projection to grow 14.1% by 2026.[5] The DEO employment projections for period 2019 to 2027 for CIP 11.1003 (table A.1.1) estimates 679 job openings in Workforce Development Area 23 with an average annualized salary of $82,076. Occupations within this CIP code include Computer and Information Systems Managers, estimated to grow in employment by an average 11 percent for the same period, Database Administrators by 11.4 percent, Network and Computer Systems Administrators by 7.6 percent, Computer Network Architects by 8 percent, and Computer Network Support Specialists by 8.4 percent.

Among technology occupations requiring a Bachelor's degree or higher and in CIP 11.1003, but not listed by DEO in Workforce Development Area 23 is Information Security Analysts, which has a job growth of 6,738 (26.9 percent) for the state of Florida between 2019 and 2027. At the local level, cybersecurity occupations in Workforce Development Area 23 are in

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[3] The State of Cybersecurity Hiring. (2019). Retrieved from www.burning-glass.com/research-project/cybersecurity

[4] United States Bureau of Labor Statistics. (2019). *Occupational Outlook Handbook* [Information Security Analysts Quick Facts, 2018]. Available from www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm

[5] Florida Department of Economic Opportunity. (2019). *Labor Market Industry Profile*. Available from www.floridajobs.org/workforce-statistics/data-center/statistical-programs/employment-projections

similar demand. According to DEO's 2019-2020 Regional Demand Occupations List, Information Security Analysts is listed as a high skill, high wage occupation with the highest growth (3.2% annual growth) among information technology occupations in Miami-Dade and Monroe Counties.[6] EMSI, a provider of labor market data, recorded 535 Information Security Analyst unique job postings in 2019 for Workforce Development Area 23 (table A.1.1.2). Over 60% of these postings required a minimum of Bachelor's degree or higher. EMSI report also shows an increase to 623 unique postings by 2027, which represents a 16.4 percent increase compared to 2019.

The summation of job openings from tables A.1.1 and A.1.1.2 for Workforce Development Area 23 demonstrates the total number of available jobs for future graduates is 812 (table A.1.3). When comparing the number of graduates from the region's institutions, which include Barry University, Florida International University, St. Thomas University, and the University of Miami, the workforce unmet need for these occupations is 535. The 5-year historical average unmet need for these occupations is even greater at 560.

Several occupations in cybersecurity are relatively new or emerging, such as Vulnerability Analyst, Penetration Tester, or Cyber Security Incident Response Specialist, to name a few. These occupations are not yet tracked with unique Standard Occupational Classification System (SOC) codes. However, with the ever-evolving responsibilities of IT professionals and the growing threats of cyberattacks to industry, including government, nonprofits, and academia, cybersecurity job openings are expected to increase exponentially.

An applicant for any of the aforementioned occupations, who has completed Miami Dade College's proposed Bachelor of Science in Cybersecurity will be more competitive due to training provided by the highly qualified Miami Dade College faculty and preparation acquired towards earning in-demand industry certifications.

3.3   Describe any other evidence of workforce demand and unmet need for graduates as selected by the institution, which may include qualitative or quantitative data information, such as local economic development initiatives, emerging industries in the area or evidence of rapid growth, not reflected in the data presented in appendix tables A.1.1 to A.1.3. For proposed programs without a listed SOC linkage, provide a rationale for the identified SOC code(s).

The 2017 Global Information Security Workforce Study estimated the worldwide cybersecurity workforce shortage to be 1.8 million by 2022. This is a 20% increase from their forecast made in 2015. The trend is similar in the United States with a projected shortage of 265K for the same year. Most pronounced in the United States is the current threat professionals believe to face with 68% believing that there are too few cybersecurity workers in their department. One of the reasons for this shortage, the report concludes, is that qualified personnel is difficult to find [7]. Fortunately, the skilled gap for cybersecurity workforce is now a nationally recognized problem that was addressed as an executive order from the White House[8]. It

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[6] Florida Department of Economic Opportunity. (2019). *Regional Demand Occupation List*. Available from www.floridajobs.org/workforce-statistics/data-center/statistical-programs/employment-projections

[7] Frost & Sullivan. (2017). *Global Information Security Workforce Study – Benchmarking Workforce Capacity and Response to Cyber Risk*, 2-4. Retrieved from www.isc2.org/-/media/B7E003F79E1D4043A0E74A57D5B6F33E.ashx

[8] Exec. Order No. 13870, 84 FR 20523. page 20523-20527 (2019)

recognizes the importance of supporting the growth of a diverse cybersecurity workforce to promote prosperity and preserve peace. It also calls to action various government agencies, including the U.S. Department of Education to mitigate this need.

According to The State of Cybersecurity in Florida report by the Florida Center for Cybersecurity at the University of South Florida, security is a primary challenge for organizations of all sizes across the state, with security and risk management leaders struggling to attract and retain qualified personnel. This trend is predicted to continue to increase due to the state's robust economic landscape coupled with the abundance use of data-driven systems across industries and the long-term lack of security investment[9]. With the state of Florida hitting a record GDP of $1 trillion in 2018, it is considered the 17th largest global economy, ahead of Saudi Arabia, Switzerland and Argentina[10]. As the state continues to drive the economy by attracting businesses, success in this effort includes providing a workforce that secures the assets of existing and new industries.

Furthermore, CyberSeek, a nonprofit provider of cybersecurity workforce data reports a robust number of job openings for cybersecurity in the state of Florida and the South Florida region, recording 24,618 and 6,080 job listings, respectively, from October 2018 through September 2019[11]. With the Miami area being home to a growing array of companies that includes financial services, health care, and IT companies, as well as a growing presence of the Department of Homeland Security and the Department of Defense, it is imperative to prepare a skilled cybersecurity workforce. Miami Dade College, with its large annual enrollment of diverse students is well positioned to educate a generation of students that will be well equipped to meet the demands of the state and the local region.

On April 23, 2019, the college convened an advisory board of 15 local cybersecurity leaders in diverse roles, such as CISO, Security Engineer, Security Architect, Security Manager and Security Officer (Appendix A). This selected group confirmed the need for local talent in cybersecurity with at least a baccalaureate degree. The group also helped MDC faculty define the knowledge, skills and abilities required in a baccalaureate degree for cybersecurity professionals in South Florida, using the country's National Initiative for Cybersecurity Education Cybersecurity Workforce Framework (NICE Framework) as the guiding standard.

3.4   If the education level for the occupation identified by the Florida Department of Economic Opportunity presented in appendix table A.1.1 is below a bachelor's degree, provide justification for the inclusion of that occupation in the analysis.

Although the DEO specifies the educational requirement for Computer Systems Analyst and Network and Computer Systems Administrators as an Associate degree, the U.S. Bureau of Labor Statistics (BLS) indicates that a bachelor's degree is the entry-level education required. This requirement was further validated by a scan of "cybersecurity" listings posted in ZipRecruiter for

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[9] The Florida Center for Cybersecurity at the University of South Florida & Gartner Incorporated (2018). *The State of Cybersecurity in Florida*. Retrieved from https://cyberflorida.org/2018/06/19/the-state-of-cybersecurity-in-florida

[10] Zimmerman, B. (2018, July 13). Florida's GDP hits $1 trillion mark: a country, it'd rank 17th in world. *Orlando Sentinel*. Retrieved from www.orlandosentinel.com/business/os-bz-florida-gdp-1-trillion-20180713-story.html

[11] Cyberseek. (2018). [Graph illustration for the state of Florida November, 2019]. *Cybersecurity Supply/Demand Heat Map*. Retrieved from www.cyberseek.org/heatmap.html

Miami, FL. Of the 23 listings posted from October 19 to November 13, 2019, 78.3% required a Bachelor's degree (17 postings) or higher (1 posting). While this search represents a marginal fraction of cybersecurity job openings, it will likely continue along this trajectory as the demand rises.

PLANNING PROCESS

4.1   Summarize the internal planning process.

Spring 2017
In-house initial research and feasibility study was conducted by the School of Engineering, Technology and Design (SETD) faculty to develop Cybersecurity programs.

August 2017
The Dean of SETD attended the Community College Cyber Summit (3CS) in Washington, D.C. to learn about best practices, curricula and products that other colleges are implementing in Cybersecurity.

Fall 2017
Cybersecurity Discipline Committee was officially formed.

Fall 2017
SETD faculty started developing lower and upper level courses following the FL State framework, National Initiative for Cybersecurity Education Cybersecurity Workforce Framework (NICE Framework), industry feedback and standards from the National Center of Academic Excellence in Cyber Defense Education, the National Security Agency and the Department of Homeland Security.

Fall 2017
SETD applied for three cybersecurity grants.

July 2018
To address the immediate educational needs of students and begin the curriculum approval process, SETD faculty presented a new Network Security track under the A.S. in Networking Services Technology and a new Cybersecurity concentration under the B.S. in Information Systems Technology to Miami Dade College (MDC) Academic Leadership Council.

Summer 2018
SETD faculty attended training and obtained certifications in CCNA Security, Checkpoint, Ethical Hacker, Cybersecurity Analyst (CySA+) and Security Fundamentals (Security+).

August 2018
SETD faculty attended the Community College Cyber Summit (3CS) in Oregon to learn about best practices, curricula and products that other colleges are implementing in Cybersecurity.

August 2018
MDC opens Cybersecurity Center of the Americas, a state-of-the-art facility that combines a Cyber Range with certification training to provide cybersecurity hands-on skills to students.

October 2018
A.S. track in Network Security and concentration in Cybersecurity inside existing B.S. in Information Systems Technology were approved by the College for implementation in Spring 2019.

December 2018
SETD faculty presented a new Associate in Science in Cybersecurity and a new College Credit Certificate in Network Security at MDC's Academic Leadership Council to start the curriculum approval process.

Spring 2019
Around 150 students enrolled in lower and upper level cybersecurity courses from the existing A.S. track in Network Security and B.S. in Information Systems Technology concentration in Cybersecurity.

January 2019
SETD hosted Miami-Dade County Public Schools (MDCPS) High Schools interested in opening Cybersecurity programs to support them with teacher training, student certifications and dual enrollment courses.

February 2019
Cybersecurity Discipline Committee confirmed the intention to apply for a Bachelor of Cybersecurity degree and provided a letter of intent (Appendix B).

April 2019
SETD officially launches an Advisory Board for Cybersecurity with 15 local industry leaders and two national advisors from CyberWatch and the National Science Foundation (NSF). The advisory board members defined the knowledge, skills and abilities required in a baccalaureate degree for cybersecurity professionals, using the country's National Initiative for Cybersecurity Education Cybersecurity Workforce Framework (NICE Framework) as the guiding standard (Appendix A).

May 2019
SETD met with the Director of FIU's Cybersecurity Masters programs to develop the transferability pathway from MDC's Bachelor in Cybersecurity to FIU's Master of Science in Cybersecurity.

Fall Term 2019
Approximately 200 students enrolled in lower and upper level cybersecurity courses from the existing A.S. track in Network Security and Bachelor of Science in Information Systems Technology concentration in Cybersecurity.

September 2019
The Associate in Science in Cybersecurity and the College Credit Certificate in Network Security were approved by SACSCOC for implementation at MDC.

November 2019
The Cybersecurity Discipline Committee voted on the baccalaureate curriculum, finalized the Program Sheet, and submitted them to its industry partners for feedback (Appendix B).

January 2020
The application for the baccalaureate was submitted to MDC's Academic Leadership Council for approval.

February 2020
The application for the baccalaureate was submitted to MDC's Campus Academic and Student Support Council (CASSC) and MDC's College-wide Academic and Student Support Council (CASSC) for review.

March 2020
The application for the baccalaureate was submitted to the Board of Trustees for final approval then will be submitted to the Florida Department of Education.

May 2020
The FLDOE Division of Florida Colleges reviews proposal and provides feedback.

July 2020
The State Board of Education will consider the proposal for approval.

Fall 2020
Marketing and recruitment planned.

4.2   Summarize the external planning process.

Summer 2017
Industry leaders and local partners were consulted about the critical shortage of cybersecurity professionals. They gave its support of developing a degree program to address this shortage in Miami-Dade County and offered its assistance in developing the curriculum and applying for grants.

August 2017
Miami Dade College joins National CyberWatch Center, a consortium of higher education institutions, businesses, and government agencies focused on collaborative efforts to advance Information Security education and strengthen the national cybersecurity workforce.

January 2018
On January 11, Dr. Julie Alexander, Vice Provost for Academic Affairs at MDC, submitted the APPRiSe notification.

March 2018
SETD received a one-year grant to build a cybersecurity center that will prepare the cybersecurity workforce of the future.

April 2018
SETD received a two-year grant from NSF to build cybersecurity capacity among faculty and develop new programs in cybersecurity.

November 2018
SETD faculty attended the NICE conference and workshops hosted by Florida International University (FIU).

March 2019
On March 29, Dr. Lenore Rodicio, Executive Vice President and Provost at MDC, contacted Dr. Elizabeth M. Bejar, Senior Vice President for Academic and Student Affairs at Florida International University. Dr. Bejar confirmed the institution's support to MDC's Bachelor of Science in Cybersecurity with a letter of support dated April 15, 2019 (Appendix E).

April 2019
On April 8, Dean Delgado contacted the academic deans at Florida International University, University of Miami, St. Thomas University and Barry University, notifying them about MDC's intention to submit a proposal for a cybersecurity baccalaureate degree (Appendix F).

May 2019
On May 24, Dr. Eduardo Padron, President at MDC, submitted the Notice of Intent (NOI) to FLDOE. FLDOE shared the NOI with state and private universities for their feedback.

May to August 2019
SETD faculty attended cybersecurity conferences, including: 3CS, Hi-Tech and Hacker Halted, to learn about new trends in cybersecurity education and network with industry leaders and educators.

September 2019
SETD faculty helped Miami-Dade County Public Schools (MDCPS) teachers define the Cybersecurity curriculum to be implemented at local high schools. The new curriculum will serve as a pathway to MDC Cybersecurity programs.

October 2019
Miami Dade College was awarded with the "2019 Academic Best Newcomer Award" by EC-Council for SETD's strong focus on building cyber pathways from secondary to post-secondary education, implementing stackable credential pathways for existing students enrolled in cybersecurity

degree programs, and offering open enrollment cybersecurity classes to Miami-based organizations.

November 2019
SETD faculty attended the NICE conference. MDC's Cybersecurity Center sponsored the conference to highlight MDC's Cybersecurity programs.

4.3   List engagement activities; this list shall include APPRiSe, meetings, and other   forms of communication among institutional leadership regarding evidence of   need, demand, and economic impact.

	Date(s)	Institution	Description of Activity
APPRiSe	January 11, 2018		Miami Dade College (MDC) submitted electronic APPRiSe notification.
Public universities in college's service District	March 29, 2019	Florida International University (FIU)	Dr. Rodicio contacted FIU's Senior Vice President for Academic and Student Affairs by email. FIU provided letter of support for the program on April 15, 2019 (Appendix E).
Public universities in college's service district	April 8, 2019	Florida International University (FIU)	Dean Delgado contacted the dean of Engineering and Computer Science at FIU by email to notify him about MDC's intention to submit a proposal for a cybersecurity baccalaureate (Appendix F). No objections were communicated.
Regionally accredited institutions in the college's service district	April 8, 2019	University of Miami (UM)	Dean Delgado contacted the dean of Engineering at UM by email to notify him about MDC's intention to submit a proposal for a cybersecurity baccalaureate (Appendix F). No objections were communicated.
Regionally accredited institutions in the college's service district	April 8, 2019	St. Thomas University (STU)	Dean Delgado contacted the dean of Computer Science at St. Thomas University by email to notify him about MDC's intention to submit a proposal for a cybersecurity baccalaureate (Appendix F). No objections were communicated.

Regionally accredited institutions in the college's service district	April 8, 2019	Barry University	Dean Delgado contacted the dean of Computer Science at Barry University by email to notify him about MDC's intention to submit a proposal for a cybersecurity baccalaureate (Appendix F). No objections were communicated.

ENROLLMENT PROJECTIONS AND FUNDING REQUIREMENTS

5.1   Provide a brief explanation of the sources and amounts of revenue that will be used to start the program.

      The main source of revenue for starting the BS in Cybersecurity will be Fund 1 operating budget. The program will be part of the School of Engineering, Technology and Design, which has fully equipped facilities to support the new program, without incurring any costs associated with facilities or equipment. Beyond the college's educational centers and classrooms, students will have the opportunity to optimize their learning by having access to the Cyber Range at the existing state-of-the-art Cybersecurity Center of the Americas. The college also has the necessary faculty to launch the program.

      The college will additionally support the promotion of the program at no additional costs. MDC has a marketing and communications department that facilitates the college community to market new projects. They provide guidance on the design and message of all materials, web design and advertising efforts. The College additionally has a Social Media Department that offers consultation and training to individual departments. This free resource will also be used to promote the program.

      As shown in Appendix Table A.2, student tuition and fees estimates are calculated according to enrollment projections. During the first year, revenue is projected to be $252,689. By year four, revenue is expected to incrementally increase to $467,604. During the first two years of the program, expenses will exceed revenue. The college has created a plan to allocate operational funds to offset the deficit. The program is expected to become self-supporting on year three, as enrollment increases.

5.2   Provide a narrative justifying the estimated and projected program enrollments, outcomes, revenues and expenditures as they appear in Appendix Table A.2.

      Enrollment projections consists of 60 students (40 FTE's) beginning Spring 2021. This projection is based on Spring 2020 enrollment of MDC's Cybersecurity concentration offered within the Bachelor of Science in Information Systems Technology. Enrollment projections for end of academic year 2023-2024 is 150 students (90 FTEs).

      Outcomes consist of the following: 15 graduates by year two, 30 by year three and 36 by year four. The projected number of graduates employed for year two is 12 with an average starting salary of $70,000. Year three consists of 23 employed graduates starting at $72,000 and

for year three, 28 employed graduates starting at $75,000. These outcomes are based of the projected enrollment numbers, historical graduation data, and employment projections for the region.

Revenue from student fees and other sources is projected to be $1,392,995 for the 4-year start-up period. The revenue will be primarily produced from tuition and fees. The projected expenditures for academic years 2020 through 2024 averages $333,212. The majority of expenses stem from faculty salaries and benefits, with a small portion going to materials and supplies, library support and minor equipment. The proposed program builds on the existing MDC departmental infrastructure for information systems technology; thus, no additional costs are projected. Based on these projections, the program will be self-sustained by the third year.

STUDENT COSTS: TUITION AND FEES

6.1   Anticipated cost for a baccalaureate degree (tuition and fees for lower and upper division credit hours) at the proposing FCS institution (tuition and fees x credit hours).

Institution Name: Miami Dade College

	Cost per credit hour			Number of credit hours		Total cost
Tuition & Fees for lower division:	$118.22	X	Credit hours	72	=	$8,511.84
Tuition & Fees for upper division:	$129.89	X	Credit hours	48	=	$6,234.72
Tuition & Fees (Total):	$	X	Credit hours	120	=	$14,746.56

The $10,000 baccalaureate degree at Miami Dade College is scholarship-based, and therefore has eligibility criteria. The B.S. in Cybersecurity is structured such that first-time in college students who are eligible for our American Dream Scholarship (ADS) can continue to their baccalaureate degree upon completion of the Associate degree. Since there is no tuition cost to the ADS recipient for the associate degree, those who go on to the B.S. in Cybersecurity will only have to cover costs for the upper division portion of their B.S. degree thereby making the total cost to the student under $10,000.

6.2   Estimated cost for a baccalaureate degree (tuition and fees) at each state university in the college's service district.

Institution Name: Florida International University

Tuition & Fees:	$ 205.57	X	Credit hours	120	=	$24,668.40

6.3   Estimated cost for a baccalaureate degree (tuition and fees) at each nonpublic institution in the

college's service district (if available)*
Institution Name: Barry University

Tuition & Fees:	$1,237.50	X	Credit hours	120	=	$148,500

Institution Name: St. Thomas University

Tuition & Fees:	$1,287.50	X	Credit hours	120	=	$154,500

Institution Name: University of Miami

Tuition & Fees:	$1,731	X	Credit hours	120	=	$207,720

Note. *If the institution does not provide the tuition cost per credit hour, please provide the cost information provided on the institution's website.

PROGRAM IMPLEMENTATION TIMELINE

7.1	APPRiSe notice:	January 11, 2018
7.2	Board of Trustees approval:	March 17, 2020
7.3	Notice of Intent:	May 24, 2019
7.4	Completed proposal submission:	April 2020
7.5	Targeted State Board of Education consideration:	July 2020
7.6	Targeted SACSCOC approval (if applicable):	N/A
7.7	Targeted initial teacher preparation program approval (if applicable):	N/A
7.8	Targeted date upper division courses are to begin:	January 2021

FACILIITES AND EQUIPMENT SPECIFIC TO PROGRAM AREA

8.1   Describe the existing facilities and equipment that will be utilized for the program.

The proposed program will take full advantage of current facilities available throughout MDC. There are 24 technology equipped classrooms and a total of 1,412 technology workstations available across MDC's three major campuses (Kendall, North, Wolfson). The Wolfson campus additionally hosts the Cybersecurity Center of the Americas, a cutting-edge security operations training center with virtual capacity and available to students college-wide.

8.2   Describe the new facilities and equipment that will be needed for the program (if applicable).

N/A

LIBRARY AND MEDIA SPECIFIC TO PROGRAM AREA

9.1   Describe the existing library and media resources that will be utilized for the program.

Currently, learning resources at MDC are adequate to support the proposed courses. At the moment, there are 401 resources consisting of printed books (102), electronic books (232), streaming videos (64), and databases (3) to support learning. Students can additionally borrow materials from any state college or university through MDC's Learning Resources department. No cost is included for library renovations since the majority of resources are electronic/digital in

nature and will be "housed" virtually and be available college-wide.

A budget of $4000 per year for the first three start up years is being allotted to cover the costs of supplementing the library's electronic book holdings and maintaining subscriptions to additional electronic platforms to support students with preparing for examinations that lead to industry certifications. The ladder includes Total Tester, Kaplan IT, Linux Academy, and uCertify. Additionally, baccalaureate students will have access to MDC's Cybersecurity Center of the Americas at no cost to them. Here, they will be able to optimize their learning, enhance teamwork, and have access to the Center's Cyber Range where cyberattacks are simulated.

9.2   Describe the new library and media resources that will be needed for the program (if applicable).

N/A

ACADEMIC CONTENT

10.1   List the admission requirements for the program.

The BS in Cybersecurity degree program is designed to provide a seamless articulation for graduates of an Associate in Science in Cybersecurity. Associate in Science students entering with other technology majors (networking services technology, computer programming and analysis, database administration, business intelligence, computer information technology) may be required to enroll in common prerequisite courses. The program also accommodates students entering with an Associate in Arts (AA) degree and students from regionally accredited institutions.

Admission requirements include:
- A completed Miami Dade College Admissions
- A minimum letter grade of "C" or higher in the following common prerequisite courses:
  - CTS 1120 Cybersecurity Fundamentals
  - CTS 1134 Networking Fundamentals
  - CTS 1111 Linux+

  And one of the following three courses:
  - CIS 1531 Introduction to Secure Scripting, or
  - COP 1334 Introduction to C++ Programming, or
  - COP1047C Introduction to Python Programming

Note: *Common prerequisites courses should be earned within five years prior to admission to the baccalaureate program. If the prerequisite course credits are more than five years old, students must consult an academic advisor.*

- An earned Associate in Science (AS) in Cybersecurity degree, a technology-related AS degree, or an Associate in Arts degree from a regionally accredited institution, with a minimum GPA of 2.5 or higher on a 4.0 scale.

  ---OR---

- A minimum of 60 credit hours from a regionally accredited institution, including:
  - Completion of the approved common prerequisite courses applicable to the program

- ENC 1101-English Composition I, or its equivalent
- A minimum cumulative GPA of 2.5 or higher on a 4.0 scale

10.2   What is the estimated percentage of upper division courses in the program that will be taught by faculty with a terminal degree?

In accordance with the Principles of Accreditation 3.5.4 by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), at least 25% of the upper division coursework in the proposed program will be taught by faculty with a terminal degree.

MDC technology faculty consists of 35 full-time of which 7 have terminal degrees. Part-time faculty consists of 147, of which 4 have terminal degrees. The college supports the educational pursuit of terminal degrees and will continue to do so for faculty interested in or in the process of completing their coursework towards the doctorate. As of current, 3 full-time technology faculty are expected to complete their degrees by the end of the year and 5 additional within the next 3 years. There are 3 additional positions opened for technology faculty to teach upper division coursework. Applicants with a terminal degree are preferred to fill these roles. After the aforementioned faculty complete their degrees and the new faculty are hired, it is expected that well over 25% of upper division coursework is taught by faculty with a terminal degree. Planned scheduling is another effective tool that will be used to manage the 25% objective as soon as the baccalaureate in Cybersecurity is approved and launched.

10.3   What is the anticipated average student/teacher ratio for each of the first three years based on enrollment projections?

In the first year of the program, enrollment is projected to be 60 students. For lecture and laboratory courses, a maximum student to teacher ratio will be 30:1. For year 2 and 3, enrollment is projected to increase to 90 and 120, respectively. The student to teacher ratio will be maintained in the latter years.

10.4   What is the anticipated SACSCOC accreditation date, if applicable?

N/A

10.5   What is the anticipated Florida Department of Education initial teacher preparation approval date, if applicable?

N/A

10.6   What specialized program accreditation will be sought, if applicable?

N/A

10.7   What is the anticipated specialized program accreditation date, if applicable?

N/A

10.8	Are there similar programs listed in the Common Prerequisites Manual for the CIP code (and track, if any) proposed for this program?	☒Yes	☐ No

10.9 List the established common prerequisites for this CIP code (and track, if any) as listed in the Common Prerequisites Manual proposed for this program:

There are currently three tracks for Cybersecurity programs with varying common prerequisites. They include:

Cybersecurity; CIP: 11.1003; offered at: Pensacola State College
- CTSX650, or CTSX651, or CETX610, or CETX614C
- CTSX314, or CTSX317, or CTSX318, or CETX691, or CETX830C
- COPX510, or COPX224, or COPX332, or COPX800
- CTSX149, or CGSX103, or CTSX142
- CTSX120
- CTSX390
- CTSX300

Cybersecurity; CIP: 11.1003; offered at University of West Florida
- MACX311
- MACX312
- PHYX048C, or PHYX048/X048L
- STAX023
- Three semester hours of certain science course. These 3 hours are in addition to the courses required above.
- COPX334, or COPX253, or COPX210, or COPX272C, or COPX512, or COPX006, or COPX500, or COPX220, or COPX360, or COPX800

Cybersecurity; CIP: 11.1003; offered at University of South Florida
- PSYX012
- ECOX013
- STAX023, or STAX122
- MACX147, or MACX140 and MACX114
- PHYXXXX (any Physics course)
- MADX104
- CGSX540, or CGSX540C, or CGSX545, or COPX710
- COPX512, or COPX210, or COPX270, or COPX006, or COPX272C, or COPX500, or COPX220, or COPX360, or COPX800
- COPX513, or COPX551C, or COPX000, or COPX224, or COPX250

10.10 Describe any proposed revisions to the established common prerequisites for this CIP (and track, if any).

The proposed program is built on the Center of Academic Excellence in Cyber Defense Education (CAE-CDE) program for post-secondary education and the National Initiative for Cybersecurity Education (NICE) Framework based on an Executive Order encouraging its widespread adoption, including by academic entities. This new baccalaureate degree is a specialized program. A new set of common prerequisite courses are being proposed to best prepare and facilitate admissions to the program. All program prerequisites are major course requirements in MDC's AS degree in Cybersecurity and will be completed by students entering the BS in Cybersecurity. Additionally, several Florida colleges offer the AS in Cybersecurity and share similar coursework. All prerequisites listed below are offered at other institutions (for details, please see appendix C), except for CIS1531-Introduction to Secure Scripting. However, students interested in pursuing the proposed program may replace this class with COP1047C, or COP1334, which is offered at most institutions.

Prerequisite coursework proposed on the Common Prerequisite Application for (**Appendix C**) form is as follows:
- CTS 1120 Cybersecurity Fundamentals
- CTS 1134 Networking Fundamentals
- CTS 1111 Linux+

And one of the following three courses:
- CIS 1531 Introduction to Secure Scripting, or
- COP 1334 Introduction to C++ Programming, or
- COP1047C Introduction to Python Programming

10.11 List all courses required once admitted to the baccalaureate program by term, in sequence. For degree programs with concentrations, list courses for each concentration area. Include credit hours per term, and total credits for the program:

	COURSE DESCRIPTION	CREDIT HOURS
First term – Fall: 14 credit hours		
CIS 3360	Principles of Information Security	4
CIS 3215	Ethics in Cybersecurity	4
ENC 1102	English Composition II	3
	General Education Course	3
Second term – Spring: 12 credit hours		
CIS 3361	Information Security Management	4
CIS 4204	Ethical Hacking I	4
CIS 4366	Computer Forensics	4
Third term – Summer: 6 credit hours		
	General Education Course	3
	General Education Course	3
Fourth term – Fall: 14 credit hours		
CIS 4378	Ethical Hacking II	4
CIS 4388	Advanced Computer Forensics	4
	General Education Course	3

	Program Elective	3
Fifth term – Spring: 14 credit hours		
CIS 4364	Intrusion Detection and Incident Response	4
CIS 4891	Capstone Project	4
	General Education Course	3
	General Education Course	3
	Total Credit Hours	**60**

10.12 Is the program being proposed as a limited access program? (If yes, identify admission requirements and indicate enrollment capacity): ☐ Yes ☒ No

PROGRAM TERMINATION

11.1 Plan of action if program must be terminated, including teach-out alternatives for students.

As mandated by SACSCOC, Miami Dade College will demonstrate diligence to individual needs in the event of program termination. To begin this plan of action, the program will go through an internal approval process culminating at the Board of Trustee level. After decision to terminate a program is acquired, the college will contact SACSCOC regarding the decision and the development of a written teach-out plan containing all applicable standards. An approved degree completion plan will be executed to allow students options that include at minimum, enabling eligible students to complete the appropriate BS in Cybersecurity degree program coursework, or offer student a teach out option with reasonably similar MDC programs or provide transitional services to support students complete with other area institutions.

Appendix Table A.1.

INSTRUCTIONS FOR COMPLETING THE DEMAND SECTION OF APPENDIX TABLE A.1.1 and A.1.1.2: To complete the following table, use the CIP to Standard Occupational Classification (SOC) crosswalk of the U.S. Department of Education to identify the SOC codes for occupations associated with the proposed program's CIP code. Fill in Table A.1.1 using the employment projections data produced by the Florida Department of Economic Opportunity (DEO), pursuant to Section 445.07, F.S., for the workforce region aligned with the college's service district for each SOC code associated with the proposed program's CIP code. The employment projections data may be accessed at http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections. For proposed programs without a listed SOC linkage, identify the appropriate SOC codes for which the program prepares graduates. Insert additional rows as needed. The total job openings column value shall be divided by eight to reflect total annual job openings. The annualized salary shall be calculated by multiplying the average hourly wage times 40, and then multiplying that value times 52. Complete table A.1.1.2 in the same manner as A.1.1 for any additional sources of employment projections. Duplicate Table A.1.1.2 for additional sources as needed.

DEMAND: FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY (DEO) EMPLOYMENT PROJECTIONS

A.1.1

Occupation			Number of jobs				Salary		Education Level
Name/Title	SOC Code	County/ Region	Base Year (2019)	Projected Year (2027)	Level Change	Total Job Openings (divided by 8)	Avg. Hourly Wage	Annualized Salary	
Computer and Information Systems Managers	11-3021	23	1,556	1,727	11.0	140	$56.89	$118,331	Bachelors
Database Administrators	15-1141	23	941	1,048	11.4	76	$37.92	$78,873	Associates
Network and Computer Systems Administrators	15-1142	23	2,825	3,041	7.6	206	$35.96	$74,797	Associates
Computer Network Architects	15-1143	23	1,921	2,074	8.0	146	$37.10	$77,168	Postsecondary
Computer Network Support Specialists	15-1152	23	1,295	1,404	8.4	111	$29.43	$61,214	Postsecondary
					Total	679	$39.46	$82,076	

Note: SOC code 15-1122 is not included in table A.1.1 as the Florida Department of Economic Opportunity did not include its projections for region 23. This SOC code is addressed in table A.1.1.2 using EMSI labor market analytics.

DEMAND: OTHER ENTITY INDEPENDENT OF THE COLLEGE – (EMSI. 409 S. Jackson St. Moscow, ID 83843)										
A.1.1.2	Occupation			Number of Jobs				Salary		Education Level
	Name/Title	SOC Code	County/ Region	Base Year (2019)	Projected Year (2027)	Level Change	Total Job Openings (divided by 8)	Avg. Hourly Wage	Annualized Salary	
	Information Security Analysts	15-1122	23	535	623	16.4	133	$39,65	$82,481	Bachelors
								$--,---	$--,---	
								$--,---	$--,---	
								$--,---	$--,---	
								$--,---	$--,---	
							Total	133	$39,65	$82,481

INSTRUCTIONS FOR COMPLETING THE SUPPLY SECTION OF APPENDIX TABLE A.1.2: To complete the following table, use the Integrated Postsecondary Education Data System of the National Center for Education Statistics to identify the number of degrees awarded by other regionally accredited postsecondary institutions in the college's service district under the same or related CIP code(s) as the proposed program. The data center is located at http://nces.ed.gov/ipeds/datacenter/. Include degrees awarded for the most recent year available and for the four prior years for each program. If the program has not had degrees awarded for five years or more, add the degrees awarded for the years available, and divide by that number of years, for the average.

SUPPLY: NATIONAL CENTER FOR EDUCATION STATISTICS, INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM								
A.1.2	Program		Number of Degrees Awarded					5-year average or average of years available if less than 5 years
	Institution Name	CIP Code	2013-14	2014-15	2015-16	2016-17	2017-18	
	Barry University	11.0103	45	47	50	29	29	40
	Florida International University	11.0103	138	195	218	243	238	206.40
	St. Thomas University	11.0701	2	3	6	2	7	4
	University of Miami	11.1003	0	2	1	0	3	1.2
							Total	277	251.60

INSTRUCTIONS FOR COMPLETING THE ESTIMATES OF UNMET NEED SECTION OF APPENDIX TABLE A.1.3: To complete the following table, column A should be derived from Tables A.1.1 and A.1.1.2 and the totals in columns B and C should be derived from Table A.1.2. Input the figures in the "Total" row in Table A.1.1 and A.1.1.2 for total job openings and Table A.1.2 for most recent year and 5-year average (these figures should be same for all sources). The range of estimated unmet need should be derived from 1) subtracting the figure in column B from the figure in column A and 2) subtracting the figure in column C from the figure in column A. Add rows for additional sources as needed.

ESTIMATES OF UNMET NEED					
A.1.3	DEMAND	SUPPLY		RANGE OF ESTIMATED UNMENT NEED	
	(A)	(B)	(C)	(A-B)	(A-C)
	Total Job Openings (divided by 8)	Most Recent Year 2017-2018	5-year average or average of years available if less than 5 years	Difference	Difference
Total	812	277	251.60	535	560.4

Appendix Table A.2

INSTRUCTIONS FOR COMPLETING THE PROJECTED BACCALAUREATE PROGRAM ENROLLMENT SECTION OF APPENDIX TABLE A.2:
To complete the following table, enter the projected enrollment information for the first four years of program implementation. Unduplicated headcount enrollment refers to the actual number of students enrolled. Full-time equivalent (FTE) refers to the full- time equivalent of student enrollment.

PROJECTED BACCALAUREATE PROGRAM ENROLLMENT

		Year 1	Year 2	Year 3	Year 4
A.2.1	Unduplicated headcount enrollment:				
A.2.1.1	Admitted Student Enrollment (First-time)	60	90	120	150
A.2.1.2	Total Admitted Student Enrollment	60	150	270	420
A.2.2	FTE Enrollment:				
A.2.2.1	Program Student Credit Hours (Resident)	1200	1800	2250	2700
A.2.2.2	Program Student Credit Hours (Non-resident)	0	0	0	0
A.2.2.3	Total Program Student Credit Hours	1200	1800	2250	2700
A.2.2.4	Program FTE (30 credits) - (Resident)	40	60	75	90
A.2.2.5	Program FTE (30 credits) - (Non-resident)	0	0	0	0
A.2.2.6	Total Program FTE	40	60	75	90

INSTRUCTIONS FOR COMPLETING THE PROJECTED DEGREES AND WORKFORCE OUTCOMES SECTION OF APPENDIX TABLE A.2: To complete the following table, enter the projected number of degrees awarded, the projected number of graduates employed and the projected average starting salary for program graduates for the first four years of program implementation.

PROJECTED DEGREES AND WORKFORCE OUTCOMES

		Year 1	Year 2	Year 3	Year 4
A.2.3	Degrees	0	15	30	36
A.2.4	Number Employed	0	12	23	28
A.2.5	Average Starting Salary	$0	$70,000	$72,000	$75,000

INSTRUCTIONS FOR COMPLETING THE REVENUES AND EXPENDITURES SECTION OF APPENDIX TABLE A.2: To complete the following table, enter the projected program expenditures and revenue sources for the first four years of program implementation.

REVENUES AND EXPENDITURES				
I. PROJECTED PROGRAM EXPENDITURES	Year 1	Year 2	Year 3	Year 4
INSTRUCTIONAL				
1. Faculty Full-Time FTE	2.0	2.0	3.0	3.0
2. Faculty Part-Time FTE	2.0	4.0	3.0	5.0
1. Faculty Full-Time Salaries/Benefits	197,223	197,223	295,835	295,835
2. Faculty Part-Time Salaries/Benefits	35,466	72,350	54,262	90,438
3. Faculty Support: Lab Assistants	6,000	9,000	12,500	13,500
OPERATING EXPENSES				
1. Academic Administration	0	0	0	0
2. Materials/Supplies	5,000	5,100	5,202	5,306
3. Travel	0	0	0	0
4. Communication/Technology	0	0	0	0
5. Library Support	4,000	4,000	4,000	0
6. Student Services Support	0	0	0	0
7. Professional Services	0	0	0	0
8. Accreditation	0	0	0	0
9. Support Services	0	0	0	0

CAPITAL OUTLAY				
1. Library Resources	0	0	0	0
2. Information Technology Equipment	0	0	0	0
3. Other Equipment	5,000	5,100	5,202	5,306
4. Facilities/Renovation		-	-	-
TOTAL PROJECTED PROGRAM EXPENDITURES	**252,689**	**292,773**	**377,001**	**410,385**
II. NATURE OF EXPENDITURES				
1. Recurring	247,689	287,673	371,799	405,079
2. Nonrecurring	5,000	5,100	5,202	5,306
TOTAL	**252,689**	**292,773**	**377,001**	**410,385**
III. SOURCES OF FUNDS				
A. REVENUE				
1. Special State Nonrecurring				
2. Upper Level - Resident Student Tuition Only	137,685	206,528	268,486	330,444
Upper Level - Nonresident Student Fees Only	-	-	-	-
Upper Level - Other Student Fees	57,150	85,725	111,443	137,160
3. Contributions or Matching Grants				
4. Other Grants or Revenues				
5. Florida College System Program Funds	57,854	520	0	0
6. Unrestricted Fund Balance				
7. Interest Earnings				
8. Auxiliary Services				
9. Federal Funds – Other				
B. CARRY FORWARD	0	0	0	0
TOTAL FUNDS AVAILABLE	**252,689**	**292,773**	**379,929**	**467,604**
TOTAL UNEXPENDED FUNDS (CARRY FORWARD)	**0**	**0**	**2,928**	**57,219**

Supplemental Materials B.1

SUPPLEMENTAL MATERIALS

B.1   Summarize any supporting documents included with the proposal, such as meeting minutes, survey results, letters of support, and other supporting artifacts.

Appendix A……….……MDC Business and Industry Leadership Team Agenda and Meeting Notes
Appendix B…….……………………………………. Cybersecurity Discipline Committee Meeting Minutes
Appendix C……………………Proposed Common Pre-Requisite Manual Application (Track 4 of 4)
Appendix D……………………………………………………………………………………………..Program Sheet
Appendix E……………………………………………………………………………………….Letters of Support
Appendix F…………………………………………………………………………Notification to Local Institutions

B.2   List any objections or alternative proposal received from other postsecondary institutions for this program.

No objections have been received. The proposed program has been endorsed by Florida International University (Appendix E).

APPENDIX TABLE OF CONTENTS

Appendix A - MDC Business and Industry Leadership Team Agenda and Meeting Notes

MDC's Cybersecurity
Business and Industry Leadership Team ("BILT")

April 23, 2019

Miami Dade College – Wolfson Campus
300 NE 2ⁿᵈ Avenue, Miami, Florida. 33132
Cybersecurity Center of the Americas, Room 2103-06

Topic: *Knowledge, Skills, and Abilities ("KSAs") analysis for a Bachelor in Cybersecurity*

AGENDA

8:15 am – 8:30 am	Networking Breakfast
8:30 am – 8:40 am	Introductions
8:40 am – 9:00 am	Status of Cybersecurity education in MDC *Antonio Delgado, Dean Engineering and Technology* *Jorge Ortega, Director Cybersecurity Center*
9:00 am – 11:20 am	KSAs analysis for a Bachelor in Cybersecurity *Ann Beheler, Executive Director National Convergence Tech Center*
11:20 am – 11:30 am	Conclusions
11:30 am – 12:00 pm	(Optional) Cyber Range Demo *Jorge Ortega, Director Cybersecurity Center*

Miami Dade College Business and Industry Leadership Team (BILT) Meeting
Topic: Knowledge, Skills, and Abilities ("KSAs") analysis for a Bachelor in Cybersecurity
April 23, 2019

ATENDEES
- Ana Roldan, CISO, MDC
- Felipe Medina, CISO, Bank United
- Maurcio Angee, CISO,   Mount Sinai
- Santiago Martinez, Security Officer, BAC Florida Bank
- Daniel Castro, Regional sales Manager, CrowdStrike
- Steven Walbroehl, Security Architect, Assurant
- Javi Lopez, Information Security Manager, Assurant
- Adonis Sardinas, Sr. Cyber Security Manager, UDT
- Virginia Jacome, Vice President, Information Security Officer, Sabadell Bank
- Ann Beheler, PI NSF, Collin County College
- Casey O'Brien,   Director, CyberWatch

MEETING NOTES
- Employability skills are mandatory

- BILT members need to get involved in the curriculum process (e.g., syllabi, capstone projects), internship programs, provide guest speakers for classes, provide adjuncts to teach some of these classes, provide mentoring opportunities

- Web apps, access & identity mgmt. more important in the future than networking, as more of the networking gets handled by MSPs, Cloud, etc.

- Penetration testing: niche part of InfoSec; the best defense is a good offense

- Needs to be covered in curricula:
    o Social Engineering (SE)

    o Secure Software Development

    o Software Development Life Cycle (SDLC)

    o DevSecOps

    o Data Management

    o Change Management

    o Ethics/accountability

- Look into making an internship/practicum a requirement for any IT/cybersecurity program

- Course exams needs to be more hands-on

- BILT team members can provide some examples of the types of work roles and paths available to potential professionals (e.g., Compliance, Risk, Threat Intel, etc.)

Appendix B - Cybersecurity Discipline Committee Meeting Minutes

Cybersecurity Committee
Meeting Minutes

Program/Area:	School of Engineering, Technology and Design/Cybersecurity Committee
Meeting Purpose:	Cybersecurity Curricula Development
Meeting Date:	2/6/2019
Meeting Time:	11:00 AM – 12:00 PM
Meeting Location:	via Skype
Committee Convener:	Mr. Rodolfo Cruz, Faculty
Attendees:	Dean, Mr. Antonio Delgado (*Dean of EnTec & Design, COMPASS Co-PI*) Dr. Zoe Yuk Kuen Wong (*Director of Program Development EnTec & Design*) Mr. Rodolfo Cruz (*Faculty, Committee Convener*) Mr. Diego Tibaquira (*Faculty, COMPASS PI*) Mr. Eugene C. Kinnaird (*Faculty*) Dr. Nelly Delessy-Gassant (*Faculty*) Mr. John Chin (*Coordinator, Cisco Networking Academy Program*) Dr. Leysi Rizo (*COMPASS Coordinator*) Mr. Justin Burandt (Cybersecurity Center of the Americas)
Minutes Issued By:	Mr. Rodolfo Cruz (Convener)

Meeting Items:

1. **Program Materials**
   Update – from the Director, Program Development - Dr. Zoe Wong. Supporting the School of Engineering, Technology and Design (EnTec) advisors with recruitment.

   Marketing & Promotion - This information was requested by Mr. Delgado. He requested items to be completed for next month's Committee meeting.

   New program materials – The following items were deemed needed for marketing and promotion.
   • Program Sheet
   • Website content
   • Brochure
   • Course sequences
   Due: next month meeting

   New program materials – Advisor guide
   Furthering Mr. Cruz' consultation with the Dean and Student Services, they are now working to develop the new advisor guide. Due Mar 1. The following items are required:

- Program sheet – Discipline Convener
- Course Sequence Guide - Discipline Convener
- Pathway (CCC to AS to BS) - Discipline Convener
- Career /positions - Discipline Convener
- Student FAQs – EnTec Advisor
- How to motivate EnTec advisors for recruitment - EnTec Advisor and Chairs

2. **New Curriculum Management Systems**

    The new Curriculum Management Systems MDC META was implemented last Friday. Training is available to all Chairs and Discipline Conveners. Attendees were highly encouraged to attend training.

    The direct link: mdc.curricunet.com. The OAP/Academic affairs dept. is updating the procedures, forms & processes. Antonio and committee convener will distribute information to the Discipline as soon as an update is available.

3. **AS Cybersecurity & Pathway**

    Congratulations was offered to the Team! CASSC approved the AS in Cybersecurity last month. Furthering a request from the Dean, the committee discussed creating a pathway from the AS in Cybersecurity to a Bachelor's in Cybersecurity.

    The discussions on the development of the new program were led by Mr. Cruz. All committee members had access to a draft notice of intent before voting on the baccalaureate. After discussions which included questions and answers, <u>the committee voted unanimously to proceed with the development of the BS in Cybersecurity at MDC</u>. Dr. Wong was informed by Academic Affairs & OAP to submit a Letter of Intent as the first step to apply for the new program. Dr. Wong was assigned to take a leadership role as part of the Program Development duties. She will work a final document with the Convener, Mr. Cruz and Dr. Nelly Delessy. Committee member, Mr. Kinnaird requested a timeline and deliverables. Mr. Delgado suggested that it will take another two years to complete the process and launch this program. Dr. Wong will work with Academic Affairs & OAP on the Letter-of-Intent submission.

    A timeline and additional resources will be sent out by the Dean of School and the Director, Program Development.

Additional Discussions

Mr. Delgado was concerned that the Committee would not respond to the above requests on time. However, Mr. Cruz the Convener reassured him that he will carry out the requests.

Mr. Burandt provided an update on the cybersecurity student club and the importance of it as a means of getting students involved and engage in cybersecurity activities at the college. Discussions mainly were about the campus-wide or individual campus-based setting. Faculty had different opinions on this. Dr. Delessy enquired whether it should be a part of the existing Computer Science club.

Finally, Mr. Delgado asked the committee members about their experience during the Cyber Range orientation the previous week (this orientation was attended by most members of the committee). Mr. Kinnaird indicated he provide a demonstration to his students. However, there is a concern about the

cyber range as this would be suitable for cooperate training from the Committee. Dr. Delgado urged the Faculty members to promote Industry Certifications training with the vouchers that will soon expired.

Action Items:

1. Develop new program materials – for marketing and promotion. (Due: 3/1/19) – Convener will reach out to committee members for help as needed.
   Responsible – Convener
   - Program Sheet
   - Website content
   - Brochure
   - Course sequences
2. Evaluate interest on the Cybersecurity student club in every campus. Develop a plan of action to implement the clubs on every campus and also to schedule info sessions either at the cyber-range or remotely. (Due: 3/6/19) – Faculty at every campus will work on this and report back to the committee. Contact Mr. Burandt as needed to schedule info sessions.
3. Develop new program materials – for advisor guides. (Due: 3/1/19) – Convener will reach out to committee members for help as needed.
   Responsible – Convener
   - Program sheet
   - Course Sequence Guide
   - Pathway (CCC to AS to BS)
   - Career /positions
   - Student FAQs – EnTec Advisor
   - How to motivate EnTec advisors for recruitment

Cybersecurity Committee
Meeting Minutes

Program/Area:	ENTEC/Cybersecurity Committee
Meeting Purpose:	Monthly Committee Meeting
Meeting Date:	09/11/2019
Meeting Time:	12:30 PM – 1:30 PM
Meeting Location:	via Skype
Committee Convener:	Rodolfo Cruz
Attending:	Dean Antonio Delgado (Dean of EnTec & Design, COMPASS Co-PI) Monica Minchala (Director of Program Development EnTec & Design) Rodolfo Cruz (Faculty, Committee Convener) Diego Tibaquira (Faculty, COMPASS PI) Nelly Delessy-Gassant (Faculty) John Chin (Coordinator, Cisco Networking Academy Program) Praveen Manicksingh (Network & Multimedia Services Manager, Hialeah Campus)
Absent:	Eugene C. Kinnaird (Faculty), Justin Burandt (Assistant Director at Cybersecurity Center of the Americas)
Minutes Issued By:	Rodolfo Cruz
Next Meeting:	10/02/2019

Meeting Notes:

Dean Antonio Delgado formally introduced Monica Minchala our new Director of Program Development for Engineering, Technology and Design programs.

Dean Delgado updated the committee on the approval by CIOL of Faculty Professional Development hours completed at the Cybersecurity Center of The Americas. Faculty can get FPD credit by completing a scenario session at the center and submitting a report on the exercise to the Dean. In addition, he also informed the committee that the college approved the assignment of graduate credit equivalence for faculty that complete advanced certifications (e.g CEH = 5 graduate credits).

The Dean urged the committee members to attend professional conferences as long as grant funding was available and to share the experience with the rest of the committee.

Diego shared his experiences at cybersecurity conferences (specifically 3CS) and described how his attending these conferences and sharing with faculty from other parts of the country has help put MDC name on the map and has created new opportunities for the college and our students.

Diego also mentioned what our next steps should be, including writing papers on our program development and curriculum experiences. He also mentioned that MDC was awarded the EC-Council: Academic 2019

Best Newcomer Award. This. Diego and Rodolfo will be at the Hacker Halted 2019 conference in Atlanta on 10/09/2019 to receive the award.

Rodolfo shared his experience attending Infiltrate 2019 conference. His opinion being that this conference was not worth attending since the type of information shared at the conference was too advanced to be of any value for our current students.

Nelly shared her experiences with conferences and expressed that even if the information in a conference is not valuable for inclusion in our curriculum, it is still useful to attend so that our faculty can stay up to date on what is going on in the Cybersecurity world.

Dean Delgado mention the opportunity we currently have for 4 of our students to visit Israel to visit companies, universities and a conference on cybersecurity. Application are now open. He urged the committee members to reach out to the students and recommend good students that are passionate about cybersecurity and can be advocates for our programs at MDC.

Dean Delgado mentioned that SACS has not responded to our accreditation request for the AS in Cybersecurity and our CCC in Network Security. He also mentioned that Nelly and Diego are currently working on a grant to fund curriculum development for our Bachelor degree in cybersecurity.

Nelly spent significant time presenting to the committee work done mapping existing courses to fulfill both the Center of Academic Excellence in Cyber Defense Education (CAE-CDE) knowledge Units (KU) and the needs expressed by our industry partners. She proposed splitting the existing CEH course into 2 courses—Ethical Hacking 1 and 2. Discussions ensued with regards to new courses deriving from prior discussions tailored for the BS in Cybersecurity. These courses include: Network Forensics, Legal and Ethical Aspects of Cybersecurity, Intrusion Detection and Response and A Capstone course. Faculty agreed on going forth with these courses.

Course competencies were assigned to members of the committee for development (see action items below).

Rodolfo asked how we should proceed the Circandece/ Project Ares platform for gamified cybersecurity instruction. The committee asked Rodolfo to get test accounts. No decision was made during this meeting.

Rodolfo brought up lack of prerequisites for the Cybersecurity Fundamentals course (CTS1120, CTS1134 should be recommended? This could impact student preparedness for the course. Diego, Rodolfo and John agreed to discuss strategies to bridge the potential gap in a separate meeting.

Action Items.

Curriculum development:

- Develop competencies for CIS4364-Intrusion and Detection Response course: (Chris Kinnaird in coordination with the Cyber Range)
- Develop competencies for CIS3218-Legal and Ethical Aspects of Cybersecurity (Diego and John, will first gather materials on what other institutions are doing)
- Develop Competencies for CIS4388 – Network Forensics (John and Chris, need to consult with Networking discipline committee)
- Develop Competencies for CIS4204-Ethical Hacking 1 and CIS4359-Ethical Hacking 2 (Nelly)

Other:

- Meeting to discuss strategies to prep students for CTS 1120 (John, Diego, Rodolfo)
- Ask for test account for Circadence/Project Ares to test drive (Rodolfo)

Cybersecurity Committee
Meeting Minutes

Program/Area:	ENTEC/Cybersecurity Committee
Meeting Purpose:	Monthly Committee Meeting
Meeting Date:	10/16/2019
Meeting Time:	12:30 PM – 1:30 PM
Meeting Location:	via Skype
Committee Convener:	Rodolfo Cruz
Attending:	Dean Antonio Delgado (Dean of EnTec & Design, COMPASS Co-PI) Monica Minchala (Director of Program Development EnTec & Design) Rodolfo Cruz (Faculty, Committee Convener) Diego Tibaquira (Faculty, COMPASS PI) Nelly Delessy-Gassant (Faculty) John Chin (Coordinator, Cisco Networking Academy Program) Eugene C. Kinnaird (Faculty) Ana Guzman (Faculty)
Absent:	Justin Burandt (Assistant Director at Cybersecurity Center of the Americas) Praveen Manicksingh (Network & Multimedia Services Manager, Hialeah Campus)
Minutes Issued By:	Rodolfo Cruz
Next Meeting:	11/20/2019

Meeting Notes:

This meeting started with a presentation of project Ares Platform from Circadence. The demo was conducted online for the benefit of the committee and was hosted by Andrew Minnicks and Nicholas Corcoran. The purpose of the presentation was to give the committee an overview of the platform which would allow the committee to evaluate the potential use of Project Ares in our current or future courses.

Dean Antonio Delgado introduced Dr. Ana Guzman as a new member of the committee joining us for the first time. He proceeded to provide the committee with an overview of the BS in Cybersecurity program timeline. He updated the committee on the process to create the program and the different milestones we need to achieve for its successful creation.

He stated that the faculty members would focus on the curriculum development (competencies to knowledge Units mapping, course creation, program sheets, etc.) while Himself and Monica will focus on other items in the application process checklist.

Dean Delgado stressed the importance of meeting the required deadlines to keep the application process moving forward. Adding that all course competencies currently being developed must be completed by our next committee meeting.

Next, an updated of the current courses being developed was given as follows:

-   Develop competencies for CIS4364-Intrusion and Detection Response course: Chris is working on it. Gathering the necessary information to develop the competencies. He believes it is feasible to complete it by next meeting.

-   Develop competencies for CIS3218-Legal and Ethical Aspects of Cybersecurity: Diego and John, are both working on it and will share their findings with each other and cooperate on final competencies. Expect to have a draft in 10 days.

-   Develop Competencies for CIS4388 – Network Forensics: Nelly, John and Chris, deliberated on what is the actual definition of network forensics. Fill look into EC-Council's certifications for ideas.

-   Develop Competencies for CIS4204-Ethical Hacking 1 and CIS4359-Ethical Hacking 2: Nelly stated that she has completed competencies for these two courses and will share them with the committee in the near future.

In addition, the committee discussed the need to define the prerequisite courses to enter into the BS in Cybersecurity program. This needs to be defined in order to allow students from different AS tracks into the BS.

Finally, Diego talked about the Hacker Halted 2019 conference where Miami Dade College received an Award for Best New Comer 2019, awarded by EC-Council Academia. The award was received by Diego and Rodolfo in a dinner and awards ceremony on 10/9/2019.

Action Items for next meeting.

-   Complete competencies of all courses currently being developed (Nelly, John, Chris, Diego)
-   Complete Program sheet with prerequisites
-   Determine if other colleges are using project Ares in their courses and how (Rodolfo)

Cybersecurity Committee
Meeting Minutes

Program/Area:	ENTEC/Cybersecurity Committee
Meeting Purpose:	Monthly Committee Meeting
Meeting Date:	11/20/2019
Meeting Time:	12:30 PM – 1:30 PM
Meeting Location:	via Skype
Committee Convener:	Rodolfo Cruz
Attending:	Members: - Rodolfo Cruz (Faculty, Committee Convener) - Diego Tibaquira (Faculty, COMPASS PI) - Nelly Delessy-Gassant (Faculty) - Eugene C. Kinnaird (Faculty) Non-members: - Dean Antonio Delgado (Dean of EnTec & Design - Monica Minchala (Director of Program Development EnTec) - John Chin (Coordinator, Cisco Networking Academy Program) - Praveen Manicksingh (Network & Multimedia Services Manager, Hialeah Campus)
Absent:	None
Minutes Issued By:	Rodolfo Cruz
Next Meeting:	12/11/2019

Meeting Notes:

Item 1: BS in Cybersecurity admission requirements

This meeting started with the committee proposing and discussing the admission requirements for the program. After discussing the minimum requirements for the upper level section and the prerequisites in other similar programs at our college, *the committee voted to approve the following admissions requirements*:

- A completed Miami Dade College Admissions and Supplemental Application
- A minimum letter grade of "C" or higher in the following common prerequisite courses:
    o CTS 1120 Cybersecurity Fundamentals
    o CTS 1134 Networking Fundamentals
    o CTS 1111 Linux+
  And one of the following three courses:
    o CIS 1531 Introduction to Secure Scripting, or
    o COP 1334 Introduction to C++ Programming, or
    o COP1047C Introduction to Python Programming

Note: Common prerequisites courses should be earned within five years prior to admission to the baccalaureate program. If the prerequisite course credits are more than five years old, students must consult an academic advisor.

- An earned Associate in Science (AS) in Cybersecurity degree, a technology-related AS degree, or an Associate in Arts degree from a regionally accredited institution, with a minimum GPA of 2.5 or higher on a 4.0 scale.
  -or-
- A minimum of 60 credit hours from a regionally accredited institution, including:
  o Completion of the approved common prerequisite courses applicable to the program
  o ENC 1101-English Composition I, or its equivalent
  o A minimum cumulative GPA of 2.5 or higher on a 4.0 scale

Item 2: New and modified courses for BS in Cybersecurity

2.1 Modification of existing course: CIS 4204 Ethical Hacking

After a description of the competencies for this course by Delessy-Gassant, *the committee voted unanimously to:*
- Modify the name of the course to Ethical Hacking I
- Modify the competencies

2.2 Proposal for new course with lab fees: CIS 4359 Ethical Hacking II

After a description of the competencies for this course by Delessy-Gassant, *the committee voted unanimously to:*
- Approve new course, including description, pre-requisites and learning outcomes
- Approve $63 lab fees

2.3 Proposal for new course with lab fees: CIS 4388 Network Forensics

After a description of the competencies for this course by Delessy-Gassant, and a discussion of what these competencies covered, the committee decided to change the name to "**Advanced Computer Forensics**" to better match the competencies. *The committee then proceeded to vote unanimously to:*
- Approve new course, including description, pre-requisites and learning outcomes
- Approve $63 lab fees

2.4 Proposal for new course with lab fees: CIS 3218 Ethical Aspects of Cyber Security

After a description of the competencies for this course by Diego Tibaquira and John Chin, and a discussion on the proposed option of names for this course, the committee settled on the name "**Ethics in Cybersecurity**". In addition, it was proposed to remove competency number 7 that served as an introduction to Cloud Computing because this competency is already covered in another course. *The committee then voted unanimously to:*

- Approve new course, including description, pre-requisites and learning outcomes
- Approve $63 lab fees

2.5 Proposal for new course with lab fees: CIS 4364 Intrusion Detection and Response

    After a description of the competencies for this course by Eugene C. Kinnaird, *the committee voted unanimously to:*
- Approve new course, including description, pre-requisites and learning outcomes
- Approve $63 lab fees

Item 3: Program Sheet for BS in Cybersecurity

Monica Minchala presented adjustments made to the proposed program sheet. These changes included splitting the General Education Areas for Humanities, Behavioral and Social Science and Natural Science to differentiate between the State and MDC core course options. This was done with the purpose of avoiding confusion on the part of the students and advisors when selecting the necessary courses for the program. *The committee voted and approved these changes.*

Item 4: BS in Cybersecurity application

Finally, *the committee voted to submit the BS in Application for college approval and submission to the state.*

Appendix C - Proposed Common Pre-Requisite Manual Application (Track 4 of 4)

Application to **Modify** Currently Approved Common Prerequisites

Degree Program Name: <u>BS in Cybersecurity</u>   CIP Code: <u>11.1003</u>

Anticipated Degree Total Hours: <u>120</u>

Are other degree programs under this name currently found in the Common Prerequisite Manual (CPM)?
_**X**_ Yes   _____No

If yes, under what CIP code? _11.1003_____

Institution Requesting Modification: <u>Miami Dade College (MDC)</u>

Name of Contact Person: <u>Dr. Julie Alexander</u>

Email Address: <u>jalexa1@mdc.edu</u>   Phone Number: <u>(305) 237-7061</u>

Please list the current common prerequisites and any corresponding approved alternative courses. Please add rows to the table as appropriate.

CIP: 11.1003   **Track: 4**

Current Primary Prerequisites	Current Alternative Course(s)
CTS X120	
CTS X134	
CTS X111	
CIS X531	COP X334 OR COP X047C

1. Does this modification of currently approved common prerequisites involve adding another track to the currently approved prerequisites within the *Common Prerequisite Manual?*

No _____   Yes___**X**_____
Maybe - depends upon Discipline Committee recommendation _____

If yes or maybe above, please provide justification regarding the significant differences in your curriculum that would necessitate a new track with different common prerequisites:
The current tracks under CIP code 11.1003 do not contain the needed prerequisites to prepare students for MDC'S new BS in Cybersecurity. The proposed new track focuses on creating and managing computer networks; understanding Cybersecurity fundamentals; administering GNU/Linux-based work-stations and servers; and creating secure scripts and programs using system shells and programming languages.

2. If adding a common prerequisite course or course substitute, please provide the following information. You can find details about individual courses at the hyperlink to the Statewide

Course Numbering System Type in the prefix and four digit number of the proposed course and select the Search button. The resulting hyperlink of the course number leads to a page with two tabs: statewide course detail and institutions. Clicking on the institutions tab will identify the institutions offering the course.

Please add rows to the table as appropriate.

Proposed Course	Title of Proposed Course	# FCS Currently Offering Course	# SUS Currently Offering Course	Justification for the addition or deletion
CTS 1120	Cybersecurity Fundamentals	BC, CBT, CC, CF, EFSC, FSCJ, FSWSC, GCSC, IRSC, NFC, PBSC, PESC, PHSC, SFC, SSCF, VC	FIU, UWF	The inclusion of CTS 1120 - Cybersecurity Fundamentals prepares students in general network security concepts; compliance and operational security; threats and vulnerabilities; application, data, and host security; access control and identity management; and cryptography.
CTS 1134	Networking Technologies	BC, CBT, CF, EFSC, GCSC, HU, NWFSC, SFC, TCC, VC		The inclusion of CTS 1134 - Networking Technologies prepares students for the technical areas of network connectivity, data communications, and communication protocols. It also prepares students with the foundation of networking technologies and data communication concepts. Topics covered include an exploration of computer networking development, the OSI reference model, data signaling, data translation, standards for communications and data transmissions, network topologies and access methods.
CTS 1111	Linux +	BC, CC, FSCJ, GCSC, SJRSC		The inclusion of CTS 1111 – Linux+ gives students fundamental knowledge of administering GNU/Linux-based work-stations and servers. In this course students learn how to plan, install, maintain, document, and troubleshoot GNU/Linux operating system services.

				The inclusion of CIS 1531 - Introduction to Secure Scripting is necessary because it introduces students to create secure scripts and programs using system shells and programming languages; implement and debug algorithms to solve problems; automate and perform administrative tasks; manage data handling, and backup and storage.
CIS 1531	Introduction to Secure Scripting			

FCS Institutions	SUS Institutions
- BC - BROWARD COLLEGE - CC - CHIPOLA COLLEGE - CF - COLLEGE OF CENTRAL FLORIDA - DSC - DAYTONA STATE COLLEGE - EFSC - EASTERN FLORIDA STATE COLLEGE - FGC - FLORIDA GATEWAY COLLEGE - FKCC - FLORIDA KEYS COMMUNITY COLLEGE - FSWSC - FLORIDA SOUTHWESTERN STATE COLLEGE - FSCJ - FLORIDA STATE COLLEGE AT JAX. - GCSC - GULF COAST STATE COLLEGE - HCC - HILLSBOROUGH COMMUNITY COLLEGE - IRSC - INDIAN RIVER STATE COLLEGE - LSSC - LAKE-SUMTER STATE COLLEGE - NFCC - NORTH FLORIDA COMMUNITY COLLEGE - NWFSC - NORTHWEST FLORIDA STATE COLLEGE - PBSC - PALM BEACH STATE COLLEGE - PESC - PENSACOLA STATE COLLEGE - PSC - POLK STATE COLLEGE - SCFMS - STATE COLLEGE OF FLORIDA, MANATEE-SARASOTA - SFC - SANTA FE COLLEGE - SFSC - SOUTH FLORIDA STATE COLLEGE - SJRSC - ST. JOHNS RIVER STATE COLLEGE - SPC - ST. PETERSBURG COLLEGE - SSCF - SEMINOLE STATE COLLEGE OF FLORIDA - TCC - TALLAHASSEE COMMUNITY COLLEGE - VC - VALENCIA COLLEGE	- FAMU - FLORIDA A & M UNIVERSITY - FAU - FLORIDA ATLANTIC UNIVERSITY - FGCU - FLORIDA GULF COAST UNIVERSITY - FIU - FLORIDA INTERNATIONAL UNIVERSITY - FLPOLY - FLORIDA POLYTECHNIC UNIVERSITY - FSU - FLORIDA STATE UNIVERSITY - UCF - UNIVERSITY OF CENTRAL FLORIDA - UF - UNIVERSITY OF FLORIDA - UNF - UNIVERSITY OF NORTH FLORIDA - USF - UNIVERSITY OF SOUTH FLORIDA - UWF - UNIVERSITY OF WEST FLORIDA

3. If your request includes course(s) that are offered currently at three or fewer FCS institutions, please provide a justification as to why these courses are critical for a student's success in your upper division.

The inclusion of CIS 1531 – Introduction to Secure Scripting is necessary because it introduces students to a variety of scripting languages. These scripting languages are an integral part of modern penetration testing tools. The course starts with an introduction to flowcharting, windows batch files and Linux shell scripting.

4. If your request includes courses that are offered currently only at your institution, do you have enough elective credit hour space in your upper division curriculum so that the associate in arts transfer student can complete the courses and still be held harmless in excess hours and time?
    a. Yes___**X**_____   b. No_____

5. If your request includes courses that are offered only at your institution, are you willing and able to offer these courses online or during the summer so that transfer students can complete the courses without delaying admission for the fall?
    a. Yes___**X**_____   b. No_____

6. Is the credit hour total for required prerequisite coursework more than 24 credit hours?
    a. Yes_____   b. No___**X**___

If yes, how do you anticipate students meeting the general education requirement?
    b. _____   Course(s) are anticipated to be "core" general education
    c. ____   Course(s) are anticipated to be part of most institutions' general education program
    d. _____   Other (please specify):

Program:	Cybersecurity	**CIP:**	11.1003
		Track:	4/4
Offered At:	MDC	**Program Length:**	120

LOWER LEVEL COURSES

		Cr. Hrs	
COPX047C		4	Introduction to Python Programming
Or-	COPX334	4	Introduction to C++ Programming
Or-	CISX531	4	Introduction to Secure Scripting
&	CTSX120	4	Cybersecurity Fundamentals
&	CTSX134	4	Networking Technologies
&	CTSX111	4	Linux +

FOR ALL MAJORS: Students are strongly encouraged to select required lower divisionelectives that will enhance their general education coursework and that will support theirintended baccalaureate degree program. Students should consult with an academicadvisor in their major degree area.

Miami Dade College

Bachelor of Science in Cybersecurity (XXXX)   C.I.P. (11.1003, Track 4)

Total credits required for the degree is 120

The Bachelor of Science (BS) in Cybersecurity degree is designed to help meet the local need for cyber security professionals. Students in this program gain detailed understanding and hands-on skills regarding the tools and protocols needed to use and manage cybersecurity infrastructure, risks, and vulnerabilities in real-world situations. The program curriculum includes courses in network defense, penetration testing, computer and network forensics, risk management and ethics, among others. These courses prepare students for multiple industry certifications such as Certified Ethical Hacker, Computer Hacking Forensics Investigator and Certified Information Security Manager.

GENERAL EDUCATION REQUIREMENTS – 36 Credits Required
Courses require a grade of "C" or higher to satisfy the general education requirement.

		Credits	Requisites
1. Communications – 6 Credits Required			
ENC 1101	English Composition 1 (Gw)	3	Appropriate college placement
ENC 1102	English Composition 2 (Gw)	3	Pre-Req ENC 1101
2. Oral Communications – 3 Credits Required			
Select one course from the following offerings.			
ENC 2300	Advanced Composition & Communication (Gw)	3	Pre-Req ENC 1101, 1102
LIT 2480	Issues in Literature & Culture (Gw)	3	Pre-Req ENC 1102
SPC 1017	Fundamentals of Speech Communications (Gw)	3	
SPC 2608	Introduction to Public Speaking (Gw)	3	
3. Humanities – 6 Credits Required			

Select one course from Group A-State Core AND one course from Group B-MDC Core. At least one Gordon Rule Writing (Gw) course must be selected from Group A or Group B.

Group A: State Core (3 credits)

		Credits	Requisites
ARH 1000	Art Appreciation	3	
HUM 1020	Introduction to Humanities	3	
LIT 2000	Introduction to Literature (Gw)	3	Pre-Req ENC 1101
MUL 1010	Music Appreciation	3	
PHI 2010	Introduction to Philosophy (Gw)	3	Pre-Req ENC 1101
THE 2000	Theatre Appreciation (Gw)	3	

---AND---

Group B: MDC Core (3 credits)

		Credits	Requisites
ARC 2701	History of Architecture 1	3	
ARC 2702	History of Architecture 2 (Gw)	3	
ARH 1000	Art Appreciation	3	
ARH 2050	Art History 1	3	
ARH 2051	Art History 2 (Gw)	3	Pre-Req ARH 2050
ARH 2740	Cinema Appreciation (Gw)	3	
DAN 2100	Dance Appreciation	3	
DAN 2130	Dance History 1 (Gw)	3	
HUM 1020	Introduction to Humanities	3	
IND 1100	History of Interiors 1	3	
IND 1130	History of Interiors 2 (Gw)	3	
LIT 2000	Introduction to Literature (Gw)	3	Pre-Req ENC 1101
LIT 2120	A Survey of World Literature 2 (Gw)	3	Pre-Req ENC 1101, 1102
MUH 2111	Survey of Music History 1	3	
MUH 2112	Survey of Music History 2 (Gw)	3	Pre-Req MUH 2111
MUL 1010	Music Appreciation	3	
MUL 2380	Jazz & Popular Music in America (Gw)	3	
PHI 2010	Introduction to Philosophy (Gw)	3	Pre-Req ENC 1101
PHI 2604	Critical Thinking/Ethics (Gw)	3	Pre-Req ENC 1101
THE 2000	Theatre Appreciation (Gw)	3	

4. **Behavioral and Social Science – 6 Credits Required**
   Choose two courses from Option A OR Option B. Within selected option, one course must be State Core and one MDC Core. Selecting AMH2020 or POS2041 (♦) is recommended as these courses also fulfill the civic literacy graduation requirement.

   Option A (6 credits): *Choose one course from State Core A-Behavioral Sciences and one course from MDC Core A-Social Sciences.*

   State Core A: Behavioral Sciences (3 credits)

ANT 2000	Introduction to Anthropology	3
PSY 2012	Introduction to Psychology	3
SYG 2000	Introduction to Sociology	3
	AND	

   MDC Core A: Social Sciences (3 credits)

AMH 2010	History of the US to 1877	3
AMH 2020	History of the US Since 1877 (♦)	3
ECO 2013	Principles of Economics (Macro) (Gw)	3
ISS 1120	The Social Environment	3
POS 2041	American Federal Government (♦)	3
WOH 2012	History of World Civilization to 1789	3
WOH 2022	History of World Civilization from 1789	3

   --- OR ---

   Option B (6 credits): *Choose one course from State Core B-Social Sciences and one course from MDC Core B-Behavioral Sciences.*

   State Core B: Social Sciences (3 credits)

AMH 2020	History of the US Since 1877 (♦)	3
ECO 2013	Principles of Economics (Macro) (Gw)	3
POS 2041	American Federal Government (♦)	3
	AND	

   MDC Core B: Behavioral Sciences (3 credits)

ANT 2000	Introduction to Anthropology	3
ANT 2410	Introduction to Cultural Anthropology	3
CLP 1006	Psychology of Personal Effectiveness	3
DEP 2000	Human Growth and Development	3
ISS 1161	The Individual in Society	3
PSY 2012	Introduction to Psychology	3
SYG 2000	Introduction to Sociology	3

5. **Natural Science – 6 Credits Required**
   Choose two courses from Option A OR Option B. Within selected option, one course must be State Core and one MDC Core. Laboratory courses do not fulfill this area's requirements.

   Option A (6 credits): *Choose one course from State Core A-Life Sciences and one course from MDC Core A-Physical Sciences*

   State Core A: Life Sciences (3 credits)

BSC 1005	General Education Biology	3	
BSC 2010	Principles of Biology	3	Pre/Co-Req CHM 1045/BSC 2010L
BSC 2085	Human Anatomy and Physiology 1	3	Co-Req BSC2085L
EVR 1001	Introduction to Environmental Science	3	
	AND		

   MDC Core A: Physical Sciences (3 credits)

AST 1002	Descriptive Astronomy	3	
ESC 1000	General Education Earth Science	3	
PSC 1121	General Education Physical Science	3	Pre-Req MAT 1033
PSC 1515	Energy in the Natural Environment	3	
Any course with prefix CHM*, GLY*, MET*, OCE*, PHY*		3	

   --- OR ---

   Option B (6 credits): *Choose one course from State Core B-Physical Sciences and one course from MDC Core B-Life Sciences*

   State Core B: Physical Sciences (3 credits)

AST 1002	Descriptive Astronomy	3	
CHM 1020	General Education Chemistry	3	
CHM 1045	General Chemistry and Qualitative Analysis	3	Pre/Co-Req CHM1025 & MAC1105/CHM1045L
ESC 1000	General Education Earth Science	3	

PHY 1020	General Education Physics	3	
PHY 2048	Physics with Calculus 1	4	Pre/Co-Req HS physics, or PHY1025 or 2053, or dept. approval, and MAC2311/PHY2048L
PHY 2053	Physics (without Calculus) 1	3	Pre/Co-Req MAC1147, 1114, 1140/PHY2053L

AND

MDC Core B: Life Sciences (3 credits)

BOT 1010	Botany	3	Co-Req BOT 1010L
BSC 1005	General Education Biology	3	
BSC 1030	Social Issues in Biology	3	
BSC 1050	Biology & Environment	3	
BSC 1084	Functional Human Anatomy	3	
BSC 2010	Principles of Biology	3	Pre/Co-Req CHM 1045/BSC 2010L
BSC 2020	Human Biology: Fund. of Anatomy & Physiology	3	
BSC 2085	Human Anatomy and Physiology 1	3	Co-Req BSC 2085L
BSC 2250	Natural History of South Florida	3	
EVR 1001	Introduction to Environmental Sciences	3	
HUN 1201	Essentials of Human Nutrition	3	
OCB 1010	Introduction to Marine Biology	3	
PCB 2033	Introduction to Ecology	3	Pre-Req PSC1515 or BSC2011
PCB 2340C	Field Biology	3	
ZOO 1010	Zoology	3	Co-Req ZOO 1010L

6. **Mathematics – 6 Credits Required**
   MAC 1105 may be replaced by a higher-level mathematics with prefix MAC*, MAD*, MAS*, or MAP*. All courses accepted in this section fulfill the Gordon Rule Computation (Gc) graduation requirements.

MAC 1105	College Algebra (Gc)	3	Pre-Req MAT 1033
STA 2023	Statistical Methods (Gc)	3	Pre-Req MAT 1033 or MGF 1106

7. **General Education Elective – 3 Credits Required**
   See Academic Advisor for approved selection.

   Computer Competency Requirement
   Students must satisfy the requirement by successfully completing a course (CGS1060C or CTS0050, an equivalent college credit course), or passing MDC's Computer Skills Placement examination, or a test exemption.

   Foreign Language Competency Requirement
   Students must fulfill this requirement via three options:
   Option A: Successful completion of two (2) credits (i.e., the equivalent of two years) in one (1) foreign language at the secondary (high school) level.

   ---**OR**---

   Option B: Successful completion of the following courses at the elementary 2 level: ASL1150C, CHI1121, FRE1121, GER1121, ITA1121, JPN1121, POR1121, RUS1121, SPN1121. These credits count towards the Lower Division Requirements area.

   ---**OR**---

   Option C: Students may demonstrate completion of the elementary 2 level through standardized examination that document the required foreign language competency.

LOWER DIVISION REQUIREMENTS – 36 Credits Required

Group A: 12 credits

CTS 1111	Linux +	4	Pre-Req CGS1060C or Computer Competence
CTS 1120	Cybersecurity Fundamentals	4	
CTS 1134	Networking Technologies	4	

Group B: 4 credits
Select one course from the following offerings.

CIS 1531	Introduction to Secure Scripting	4	
COP1047C	Introduction to Python Programming	4	
COP1334	Introduction to C++ Programming	4	Pre-Req CGS1060C or Computer Competence

Group C: 20 credits
Any transferrable type-1 or type-2 courses. Please see academic advisor.

UPPER DIVISION REQUIREMENTS – 36 Credits Required

CIS 3215	Ethics in Cybersecurity	4	
CIS 3360	Principles of Information Security	4	Pre-Req CTS 1134 or CTS 1650
CIS 3361	Information Security Management	4	Pre-Req CIS 3360
CIS 4204	Ethical Hacking I	4	Pre-Req CIS 3360
CIS 4378	Ethical Hacking II	4	Pre-Req CIS 4204
CIS 4364	Intrusion Detection and Incident Response	4	Pre-Req CIS 3360
CIS 4366	Computer Forensics	4	Pre-Req CIS 3360
CIS 4388	Advanced Computer Forensics	4	Pre-Req CIS 4366
CIS 4891	Capstone Project	4	Departmental Approval Required

PROGRAM ELECTIVES – 12 Credits Required

Choose 12 credits from courses with the following prefixes:
CAP*, CEN*, CGS*, CIS*, CNT*, COP*, CTS*, CET*

IMPORTANT INFORMATION

Civic Literacy Competency: First time in college students for the 2018-2019 school year and thereafter must demonstrate competency in civic literacy to earn a baccalaureate. This requirement may be satisfied by passing AMH2020 or POS2041 (listed under the Social Sciences area), or an equivalent AP or CLEP exam.

Computer Competency: All MDC degree-seeking students with 16 or more credits must demonstrate computer competency prior to graduation. Students demonstrate this competency by passing the MDC computer competency test, currently known as CSP (Computer Skills Placement) examination or by enrolling in and successfully completing an equivalent course.

Foreign Language: Students admitted to the baccalaureate degree program without meeting the foreign language admissions requirement of at least 2 courses (8-10 credit hours) of sequential foreign language at the secondary level or the equivalent of such instruction at the postsecondary level must earn such credits prior to graduation.

Required Credit Hours and GPA: The baccalaureate requires student to earn a minimum of 120 unduplicated credit hours with a minimum cumulative grade point average of 2.0. All general education and all upper division requirements must be passed with the grade of "C" or better.

Pursuing or Have Earned an Associate's Degree: Students entering with an AS or AAS degree may have more than 24 elective credits and may need additional General Education credits to meet the 36 General Education credits required for the baccalaureate degree. Students entering with an AA degree may need additional electives to provide appropriate background for the baccalaureate program.

Graduation Requirements: This Program Sheet is effective for academic year 2020/2021. Additional requirements apply, which include, but are not limited to Gordon Rule (college level communication and computational skills) and residency (number of credits that must be earned at MDC). Students should review their individualized Degree Audit Report to determine the specific graduation policies in effect for their program of study for the year and term they entered Miami Dade College. Students are highly encouraged to meet with their academic advisor on a regular basis and review the College Catalog to learn about all requirements to receive the baccalaureate. The final responsibility for meeting graduation requirements rests with the student.

Program Learning Outcomes: Graduates of Miami Dade College's BS in Cybersecurity program will be able to:

1. Evaluate the cybersecurity software of an information system, including its information security strategy, information security policies, risk management process, business continuity plan, and disaster recovery plan.
2. Conduct assessment of threats and vulnerabilities from a variety of environments and recommend appropriate countermeasures.
3. Use data collected from the cybersecurity infrastructure to identify, analyze, and respond to cybersecurity events.
4. Collect, preserve and analyze digital evidence associated with cyber intrusion incidents from a variety of environments.
5. Function as an ethical cybersecurity professional who can work effectively in a group and understands the importance of continuous learning in the cybersecurity field.

Appendix E – Letters of Support

FIU | **Office of the Provost**
FLORIDA INTERNATIONAL UNIVERSITY

April 15, 2019

Lenore P. Rodicio, Ph.D.
Executive Vice President and Provost
Miami Dade College
300 NE 2nd Avenue
Miami, Florida 33132

Dear Provost Rodicio:

I am writing on behalf of Florida International University (FIU) in support of Miami Dade College's proposed Bachelor of Science in Cybersecurity.

I want to commend you for your dedication to improving the lives through enhanced educational opportunities for our community. This bachelor's program will certainly build the skills gained from your concentrations within your existing BS in Information Systems Technology as well as leverage gains with your recently launched Cybersecurity Center of the Americas.

Per our conversation we look forward to being invited to a roundtable discussion of discipline leaders as well as myself and Dr. Janie Valdes to engage in a strategic conversation around the design of intentional baccalaureate to FIU's graduate programs within this arena.

Please know that we are here as a resource for you and your staff.

We wish you much success in this endeavor.

Respectfully,
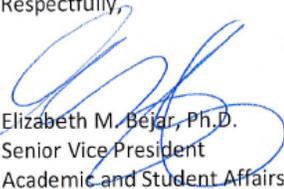
Elizabeth M. Bejar, Ph.D.
Senior Vice President
Academic and Student Affairs

May 22, 2019

Antonio Delgado
Dean of Engineering, Technology and Design
Miami Dade College
300 NE 2nd Ave. Room: 7157
Miami, Florida 33132

Dear Dean Delgado:

The Center for Cybersecurity at University of West Florida is supportive of MDC's creating a Bachelor of Science degree in Cybersecurity. MDC's offering along with ours will offer a diversity of options to Florida students in the field of Cybersecurity, which is in high demand among employers. There are plenty of open Cybersecurity jobs in the state and there is severe shortage of high-tech workers in the field.

We look forward to following your success in this degree implementation and continuing our collaborative efforts to establish the state of Florida as the leader in Cybersecurity education and research.

Sincerely,

Anthony Pinto
Center for Cybersecurity CAE Faculty Fellow Computer Science Depart Cybersecurity Bachelor's Degree Program Coordinator and Computer Science Faculty member.

ASSURANT

May 1, 2019

Dr. Eduardo J. Padrón
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear Dr. Padrón:

As SVP, Chief Information Security Officer (CISO) of Assurant, Inc I am writing to express my full support for Miami Dade College's baccalaureate degree in Cybersecurity.

There is a tremendous need within our community to expand workforce development, training, and education, to better support the growing needs of South Florida businesses. I believe local companies will benefit in myriad ways from this degree offering.

I urge you to move forward in this endeavor and look forward to the rewards that will come from the promising cadre of new cybersecurity professionals trained at your facilities.

Very truly yours,

Marilyn M. Piccolo, CPA, PMP, CISM
Assurant Global Technology

CyVent

PLAN. PROTECT. PRE-EMPT

May 2, 2019

Dr. Eduardo J. Padrón
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear Dr. Padrón:

Please allow me to be one of the many to congratulate Miami Dade College on its efforts to develop a four-year degree in Cybersecurity.

As you probably know, there are not enough qualified professionals in this area to meet the present and growing needs of South Florida employers. With a larger supply of these professionals, it will be easier to attract technology companies from other areas to our region.

On behalf of CyVent. I want to extend my support to the College on this effort. Thank you for providing accessible, affordable, quality education in this area.

Sincerely,

Yuda Saydun

April 26, 2019

Dr. Eduardo J. Padrón
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear Dr. Padrón:

I congratulate you and the Miami Dade College team leading the effort to create a four-year degree in Cybersecurity.

As you know, there is a huge need both in south Florida and nationally to increase the quanity and quality of the Information Security workforce.

National CyberWatch commits to the following in support of this project:
- Assist with curriculum development, faculty training, and capacity building
- Coordinate and identify resources for dissemination
- Collaborate on other cybersecurity initiatives that Miami Dade College identifes are mutually beneficial to both organizations

I look forward to continued collaboration with Miami Dade College on this important initiative.

Best regards,

Casey W. O'Brien
Executive Director & Principal Investigator
National CyberWatch Center
cobrien@nationalcyberwatch.org
443-610-7775

4it

May 22, 2019

Dear Dr. Padron:

If the Bachelor in Cybersecurity proposal submitted by Miami Dade College is approved by the Florida Department of Education, it is our intent to collaborate and commit resources as detailed in this letter.

4IT is a South Florida based IT service company that specializes in the secure management of Information Technology infrastructure. With customers in the commercial, non-profit, and government sectors, 4IT provides a full suite of IT support services including infrastructure management, IT helpdesk support, and advanced project engineering for premise and cloud implementations. During the past 5 years as cybersecurity has emerged to become the most significant risk to IT operations, 4IT built a highly-integrated set of IT management and cybersecurity tools to address this specific risk for our own customers. With more than 12 years of engineering labor already invested, 4IT continues to refine, test, and implement this advanced tool solution to address the IT management and cybersecurity needs of our domestic and international clients.

In relation to the Baccalaureate program, 4IT will support Miami Dade College by:
- Contributing resources to support the education and career training program strategies.
- Assisting in curriculum development to ensure alignment with local industry needs.
- Providing mentors and speakers that can guide and advise future students.
- Providing internship opportunities for future students to gain real job experience while they finish their degrees.

We look forward to working with Miami Dade College.

Thank You,
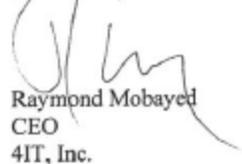
Raymond Mobayed
CEO
4IT, Inc.

Corporate
12595 SW 137 Ave #301
Miami, FL 33186
(305) 278-7100

UDT
ACCOMPLISH MORE

4/26/2019

Dr. Eduardo J. Padrón
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear Dr. Padrón:

Recently, we had an opportunity to review components of a Miami Dade College (MDC) plan to provide our community a four-year baccalaureate degree in Cybersecurity.

We believe the plan is one that local risk management professionals would support due to the emphasis on higher learning, which is being discussed statewide. This organization employs technology professionals with a multitude of skills and characteristics. Clearly, a four-year degree is an appealing addition to a candidate's professional portfolio.

I assure you that I favor this initiative which offers advanced education to information systems professionals. I support you and your staff for the diligent efforts being put forth to address the education needs of our staff, by establishing a Bachelor of Science in Cybersecurity.

Sincerely,

Adonis Sardinas, MBA
Sr Cyber Security Manager
United Data Technologies

Appendix F – Notification to Local Institutions

Florida International University

Notification about Bachelor in Cybersecurity

Delgado, Antonio <adelgad9@mdc.edu>

Mon 4/8/2019 2:47 PM

To: jvolakis@fiu.edu <jvolakis@fiu.edu>

🔗 1 attachments (324 KB)
BS Cybersecurity Program - FIU.pdf;

Dear Dr. Volakis:

I would like to notify you through the attached letter about Miami Dade College's intent to submit a Bachelor of Science in Cybersecurity to the State Board. The Bachelor of Science in Cybersecurity will address the growing demand for skilled professionals to gain detailed understanding and hands-on skills regarding the tools and protocols needed to use and manage cybersecurity infrastructure, risks, and vulnerabilities in real-world situations.

As we move forward with curriculum development, we would be interested in exploring a baccalaureate-to-graduate program pipeline with FIU should you be interested.

Should you wish additional information or would be interested in discussing this program, please contact me at 305-237-7006.

Sincerely,
Antonio

Antonio Delgado
Dean of Engineering, Technology and Design
Miami Dade College
300 NE 2nd Ave. Room: 7157
Miami, Florida 33132
(305) 237-7006
adelgad9@mdc.edu

Notification about Bachelor in Cybersecurity

Delgado, Antonio <adelgad9@mdc.edu>

Mon 4/8/2019 2:55 PM

To: bardet@miami.edu <bardet@miami.edu>
Cc: Wensveen, John <jwensvee@mdc.edu>; Giovinazzo, Alicia <agiovina@mdc.edu>; Alexander, Julie <jalexa1@mdc.edu>

📎 1 attachments (323 KB)
BS Cybersecurity Program - UM.pdf;

Dear Dr. Bardet:

I would like to notify you through the attached letter about Miami Dade College's intent to submit a Bachelor of Science in Cybersecurity to the State Board. The Bachelor of Science in Cybersecurity will address the growing demand for skilled professionals to gain detailed understanding and hands-on skills regarding the tools and protocols needed to use and manage cybersecurity infrastructure, risks, and vulnerabilities in real-world situations.

The proposal for the above program is in response to the workforce shortages in Miami-Dade County (Region 23). Graduates will have career opportunities in industry, government, healthcare, financial, and academic sectors. The program will also be a pathway for associate degree graduates, particularly those graduates with associate of science degrees, to continue their academic studies and complete a baccalaureate degree for improved career opportunities and advancement.

Should you wish additional information or would be interested in discussing this program, please contact me at 305-237-7006.

Sincerely,
Antonio

Antonio Delgado
Dean of Engineering, Technology and Design
Miami Dade College
300 NE 2nd Ave. Room: 7157
Miami, Florida 33132
(305) 237-7006
adelgad9@mdc.edu

Notification about Bachelor in Cybersecurity

Delgado, Antonio <adelgad9@mdc.edu>

Mon 4/8/2019 2:54 PM

To: lfernandez-torres@stu.edu <lfernandez-torres@stu.edu>
Cc: Wensveen, John <jwensvee@mdc.edu>; Alexander, Julie <jalexa1@mdc.edu>; Giovinazzo, Alicia <agiovina@mdc.edu>

📎 1 attachments (322 KB)

BS Cybersecurity Program - St. Thomas University.pdf;

Dear Dr. Fernandez-Torres:

I would like to notify you through the attached letter about Miami Dade College's intent to submit a Bachelor of Science in Cybersecurity to the State Board. The Bachelor of Science in Cybersecurity will address the growing demand for skilled professionals to gain detailed understanding and hands-on skills regarding the tools and protocols needed to use and manage cybersecurity infrastructure, risks, and vulnerabilities in real-world situations.

The proposal for the above program is in response to the workforce shortages in Miami-Dade County (Region 23). Graduates will have career opportunities in industry, government, healthcare, financial, and academic sectors. The program will also be a pathway for associate degree graduates, particularly those graduates with associate of science degrees, to continue their academic studies and complete a baccalaureate degree for improved career opportunities and advancement.

Should you wish additional information or would be interested in discussing this program, please contact me at 305-237-7006.

Sincerely,
Antonio

Antonio Delgado
Dean of Engineering, Technology and Design
Miami Dade College
300 NE 2nd Ave. Room: 7157
Miami, Florida 33132
(305) 237-7006
adelgad9@mdc.edu

Notification about Bachelor in Cybersecurity

Delgado, Antonio <adelgad9@mdc.edu>

Mon 4/8/2019 2:47 PM

To: rjimenez@barry.edu <rjimenez@barry.edu>
Cc: Wensveen, John <jwensvee@mdc.edu>; Giovinazzo, Alicia <agiovina@mdc.edu>; Alexander, Julie <jalexa1@mdc.edu>

📎 1 attachments (326 KB)
BS Cybersecurity Program - Barry University.pdf;

Dear Dr. Jimenez:

I would like to notify you through the attached letter about Miami Dade College's intent to submit a Bachelor of Science in Cybersecurity to the State Board. The Bachelor of Science in Cybersecurity will address the growing demand for skilled professionals to gain detailed understanding and hands-on skills regarding the tools and protocols needed to use and manage cybersecurity infrastructure, risks, and vulnerabilities in real-world situations.

The proposal for the above program is in response to the workforce shortages in Miami-Dade County (Region 23). Graduates will have career opportunities in industry, government, healthcare, financial, and academic sectors. The program will also be a pathway for associate degree graduates, particularly those graduates with associate of science degrees, to continue their academic studies and complete a baccalaureate degree for improved career opportunities and advancement.

Should you wish additional information or would be interested in discussing this program, please contact me at 305-237-7006.

Sincerely,
Antonio

Antonio Delgado
Dean of Engineering, Technology and Design
Miami Dade College
300 NE 2nd Ave. Room: 7157
Miami, Florida 33132
(305) 237-7006
adelgad9@mdc.edu