New Credit Program Application
Long Form (CCC-501) and Short-Form (CCC-510)
Santa Rosa Junior College

Date proposal created or last revised: 12/11/2018 (AL)

Proposed Certificate/Major Title: Computer Studies: Network and Systems Security Administration

Projected Program Start Date (semester and year): Fall 2019

Contact Person and Title: Michael McKeever

Contact Phone #: (707) 778-3960   Contact email: mmckeever@santarosa.edu

Check one or more of the following (to check box, double click on the box and click "checked" option):

☐ 0.5 - 17.5 unit certificate, **not** seeking Chancellor's Office approval (local approval required)

☐ 12 – 17.5 unit certificate, seeking Chancellor's Office approval (recommended)

☒ 18 unit or more certificate (requires Chancellor's Office approval)

☒ 18 unit or more CTE major, non-transferable (no articulation required, but still requires Chancellor's Office approval)

☐ Transfer major (18 units or more) either CTE or Liberal Arts (articulation required, but still requires Chancellor's Office approval)

☐ AA-T or AS-T transfer major following Transfer Model Curriculum (TMC) template (requires Chancellor's Office approval)

For instructions, see page 2.

Preliminary Approval Signatures:
The signatures below indicate that **preliminary** approval has been given to submit the application and start curriculum development, as needed. The signatures below indicate that the proposed certificate or major is appropriate to mission, meets the needs of the community, meets SRJC standards for high quality, is feasible within existing resources or resource needs can be supported, and complies with all relevant Title 5 or Ed Code requirements.

Department Chair Signature: _____   Date: _____

Supervising Administrator: _____   Date: _____

Dean III Signature (if any): _____   Date: _____

SVPAA Signature: _____   Date: _____

SVPAA verification (initial):   _____ EPCC Review Completed   _____ AAC Review Completed

Application Date:

California Community Colleges

NEW CREDIT PROGRAM APPLICATION FORM

Computer Studies: Network and Systems Security Administration **Josh Adams**
PROPOSED PROGRAM TITLE   CONTACT PERSON
Santa Rosa Junior College   **Dean, Business & Prof. Studies**
COLLEGE   TITLE
Sonoma County Junior College   **(707) 524-1731**
DISTRICT   PHONE NUMBER
Fall 2019   **jadams@santarosa.edu**
PROJECTED PROGRAM START DATE   E-MAIL ADDRESS

GOAL(S) OF PROGRAM:
☒ CAREER TECHNICAL EDUCATION (CTE)   ☐ TRANSFER   ☐ OTHER

TYPE OF PROGRAM (SELECT ONLY ONE):
☐ A.A. DEGREE   ☒ A.S. DEGREE   ☐ AA-T DEGREE (for transfer)*   ☐ AS-T DEGREE (for transfer)*
CERTIFICATE OF ACHIEVEMENT: ☒ 18+ semester (or 27+ quarter) units
                                ☐ 12-18 semester (or 18-27 quarter) units

* The AA-T and AS-T degrees fulfill the requirements of California Education Code sections 66745-66749, also known as the Student Transfer Achievement Reform Act. See special instructions provided here.

Type of change requested: Check all that apply.	
Replace Existing Degree	☐
Replace Existing Certificate of Achievement	☐
Add New Degree	☒
Add New Certificate of Achievement	☒
Delete Existing Degree from an approved credit program	☐
Delete Existing Certificate of Achievement from an approved credit program	☐

Note: to check a box double click on the box and select the "checked" option.

PLANNING SUMMARY

Recommended T.O.P. Code	070810	Estimated FTE Faculty Workload	2
Units for Degree Major or Area of Emphasis	41	Number of New Faculty Positions	0
Total Units for Degree	64	Est. Cost, New Equipment	$0
Required Units-Certificate	41	Cost of New/Remodeled Facility	$0
Projected Annual Completers	15	Est. Cost, Library Acquisitions	$0
Projected Net Annual Labor Demand (CTE)	56	When will this program undergo review as part of college's Program Evaluation Plan?	Month __May__ Year_2020_____

Criteria A. Appropriateness to Mission

1. Statement of Program Goals and Objectives:
A) The Mission of the Network and Systems Security Administration (NSSA) Program at SRJC is to provide both academic and experiential learning environments that prepare graduates to be competent entry-to-mid-level Computer Networking and Computer Systems administrators, emphasizing current best-security-practices.

Goal #1

The NSSA Program will prepare students to be competently employed as Computer Network or Computer Systems technicians, in the field of maintenance, administration, consulting, or a related field, or to be continuing with education at a higher level.

Goals #2

The NSSA Program will prepare graduates for further study and practice in the profession of Vulnerability Analysis, Cyber Defense Operations, Digital Forensics and Incidence Response or a related Cyber Security field.

B) Upon successful completion of this program, the student will be able to:

1. Work as team members in an information technology group which designs, evaluates, tests, installs and maintains corporate computer systems and networks.
2. Communicate clearly and professionally as an Information Technology (IT) professional, in written and verbal formats.
3. Apply basic knowledge of secure computer networks and systems in assisting individuals and organizations with IT services and solutions.
4. Prepare IT solutions for clients from diverse cultural, economic and social backgrounds at various stages in their infrastructure lifecycle.
5. Meet the workforce needs for NSSA professionals.

2. Catalog Description:

The Computer Studies: Network and Systems Security Administration [major/certificate of achievement] provides a course of study that prepares students to implement and administer a secure Information Technology (IT) environment. It is also a significant upgrade to the traditional IT Administrator role and is foundational to further study in the Cyber Security field. This major focuses on the requisite Knowledge, Skills and Abilities (KSAs) to securely maintain Microsoft Computer Systems and Cisco networks, but with the ability also learn and manage

other vendor platforms. In addition, the courses in this is degree map to the following, or similar, professional certifications:

CompTIA Security+
CompTIA Project+
Cisco Certified Entry Networking Technician (CCENT)
Cisco Certified Networking Associate (CCNA) in Routing and Switching
Cisco CCNA in Security Cisco CCNA in Cyber Ops
EC Council Certified Ethical Hacker (CEH)
Microsoft Certified Solutions Associate (MCSA) in Windows Client
Microsoft Certified Solutions Associate (MCSA) in Windows Server

3. Program Requirements:

Key	Course and Title	Units	Units That Double Count for GE
R	CS 80.11 Exploring Microsoft Windows (to be revised into CS 81.81A, Microsoft Windows Client and Server 1)	3	0
R	CS 82.55 Principles of Computer Security	3	0
R	CS 82.21A Network Fundamentals (Cisco Networking 1)	4	0
R	CS 82.21B Routing and Switching Essentials (Cisco Networking 2)	4	0
R	CS 81.81B Microsoft Windows Client and Server 2	3	0
R	CS 81.81C Microsoft Windows Client and Server 3	3	0
R	CS 84.26 Project Management for IT Professionals	3	0
R	CS 81.41 Scripting for System and Network Administrators	3	0
R	CS 81.11 Introduction to Virtualization and Cloud Computing	3	0
Complete 12.00 units of electives			
E	CS 182.21C Scaling Networks (Cisco Networking 3)	3	0
E	CS 182.21D Connecting Networks (Cisco Networking 4)	3	0
E	CS 82.56 Computer Network Security	3	0
E	CS 82.57 Cybersecurity Operations	3	0
E	CS 81.62 Relational Database Concepts and Structured Query Language	3	0
E	CS 50A Website Development 1	3	0
E	CS 55.13 Server-Side Web Development	3	0
E	CS 10A Introduction to Programming Concepts and Methodologies	4	0
E	CS 82.71 Ethical Hacking and Systems Defense	3	0
Total	Minimum number of units to meet major requirements	41	0

List any special requirements in addition to above, such as work experience, internship, or examination:

Unit Summary
-Total units to complete the certificate or major requirements: 41

-For associate degree majors, total units that double count as GE courses: 0
-For associate degree majors, total units minus the units that double count: 41
-For associate degree majors, additional units of "free" electives to bring the total to 60: 0
-General Education Pattern: 23 units (option A/local)

4. Background and Rationale:

The demand for Cyber Security professionals is a recurring theme in the media and surveys consistently indicate a strong demand for skilled Information Security Professionals. The supply of workers does not meet the current and anticipated demands. With the EDD Labor Market Index projecting a 31 percent increase in job growth for Information Security Analysts in the Bay Area, this course of study will provide our students with opportunities for career advancement and higher wages. A new report from the San Francisco Bay Center of Excellence (COE) for Labor Market Research Study revealed that there is a growing need for skilled cybersecurity workers and documents that the state's educational institutions are currently unable to meet the demand. The California Cybersecurity Employer and Educational Program Statewide Survey looked at nine of the most common cybersecurity-related jobs, according to the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework. The study reveals that California employers need more workers for all nine job roles, anticipating an additional 14,000 open positions over the next 12 months. However, in 2016, the most recent year of available data, only 3,200 educational awards were conferred by programs that focused directly on cybersecurity or clearly included aspects of cybersecurity in their curriculum. The COE report at http://www.coeccc.net/reports/cybersecurity recommends: Education and training providers should expand capacity to prepare more students for the thousands of open specialized cybersecurity positions and IT/IS positions that require cybersecurity skills. This report confirms and attempts to quantify the shortage of qualified workers ready to fill open cybersecurity positions in California's labor market. California's educational institutions can utilize this data to document the need to create new courses and programs or expand existing programs to prepare more qualified cybersecurity workers across the state. An encouraging sign from the qualitative survey of postsecondary institutions is that across the seven NICE program concentrations, between 20% and 43% of responding colleges and training institutions that currently do not have cybersecurity programs are interested in and/or anticipate creating such programming in the future. Education and training providers should align their curriculum offerings with the NICE Cybersecurity Workforce Framework so students who complete programs have the requisite knowledge, skills and abilities for the work roles they are entering. This program follows the NICE standards and is an opportunity for SRJC to attract many students and incumbent workers who want and need to be trained well as Network and Systems Security Administrators. The gap between what the 4-year institutions offer verses the demands of the workplace afford us the moment to expand our capacity and grow the College for local, regional and statewide Career Education students. The program also nicely illustrates the new branding of CTE with a focus on long-term, high-paying, sophisticated and relevant professions. This program of study is also available as a Certificate option for those who already have a degree and want the technical courses only.

Criteria B: Need

5. Enrollment and Completer Projections:

- number of sections of core courses to be offered annually: 15
- headcount of student annual enrollment in core courses: 40
- estimated completers at the end of the second year: 20
- estimated completers at the end of the fifth year: 100

6. Place of Program in Curriculum / Similar Programs:

This program will share courses with SRJC's existing Computer Studies: IT Support & Computer Studies: Microsoft Office Specialist certificate.

Several "Certificates of Achievement" and "Skills Certificates" will also be developed from the courses in the program. This program provides foundational knowledge to further study in the Cyber Security field.

7. Similar Programs at Other Colleges in the Service Area:

Napa Valley College (40 miles away) does not offer a similar program
College of Marin (43 miles away) does not offer a similar program

8. Labor Market Information & Analysis:

See attached.

9. Employer Survey:

Employer survey not required.

10. Explanation of Employer Relationship:

No employer relationships exists.

11. List of Members of Advisory Committee Relationship:

See attached

12. Recommendations of the Advisory Committee:

See attached

Criteria C. Curriculum Standards

13. Sequence of Courses:

Please Specify: __X__ Recommended Sequence, OR _____ Required Sequence

Semester	Course and Title	Units
1	CS 82.21A Network Fundamentals (Cisco Networking 1)	4.0
	CS 82.21B Routing and Switching Essentials (Cisco Networking 2)	4.0
	CS 81.81A Microsoft Windows Server and Client 1	3.0
2	CS 81.81B Microsoft Windows Server and Client 2	3.0
	CS 82.55 Principles of Computer Security	3.0
	Elective course	3.0
	Elective course	3.0
3	CS 81.81C Microsoft Windows Server and Client 3	3.0
	CS 81.11 Introduction to Virtualization and Cloud Computing	3.0
	Elective course	3.0
4	CS 84.26 Project Management for IT Professionals	3.0
	CS 81.41 Scripting for System and Network Administrators	3.0
	Choose one Elective Course	3.0
	Total units	41.0

14. Transfer Applicability:

Not for transfer.

Criteria D. Adequate Resources

15. Library and/or Learning Resources Plan:

Existing resources are sufficient.

16. Facilities and Equipment Plan:

Existing resources are sufficient.

17. Financial Support Plan:

Existing resources are sufficient.

18. Faculty Support Plan:

Year 1 Semester 1 – No additional FTEF and no courses added to the schedule
Year 1 Semester 2 – An additional 0.2 FTEF and 1 course added to the schedule
Year 2 Semester 3 – An additional 0.4 FTEF and 2 courses added to the schedule
Year 2 Semester 4 – An additional 0.6 FTEF and 3 courses added to the schedule

Criteria E. Compliance

19. Model Curriculum:

Not based on model curriculum.

20. Licensing or Accreditation Standards:

No licensing or accreditation standards apply.

21. Student Selection and Fees:

No student selection or excess fees apply.

Appendix A

Not required for a TMC when a similar major already exists

A.1. Enrollment: Provide data and discussion about the efficiency over the past **three** years of current courses to be used in this program (efficiency is the percentage of seats filled at first census compared to the class limit). This information can be pulled from the data mine, Facilities Mod data base. Ask you supervising administrator for assistance, if needed.

A.2. Finances: Estimate department expenses to create and implement the proposed program:

Category	New and additional* start up costs, such as coordinate application; write courses; research; meetings; staff work; new faculty or staff; new equipment or facilities; etc.	New or additional* continuing operational expenses per semester, such as cost of instruction; department support; faculty program coordination; supplies; maintenance; fees; etc.
1000 – Instructional personnel		
2000 – Other personnel		
3000 – Benefits		
4000 – Supplies		
5000 – Operations - Travel, services, telephone, etc.		
6000 – Equipment		
• Additional expenses might include District resources such as facilities; equipment; supplies; library resources. If applicable, include possible sources of new or additional revenue, not including FTES		

A.3 **Department/Cluster Changes**: Outline department or cluster programs and expenses, if any, that would have to be reduced or eliminated or changed to offer the program.

SRJC New Credit Program Proposal

Appendix C: Evaluation Matrix
CTE Certificates and CTE Majors Only

Use the rubric below and add up the points in the far right column.

Planning Factor	3 Points	2 Points	1 Point	0 Points	Points
SRJC Initiatives	Addresses 2 or more initiatives and 2 or more goals from each initiative	Addresses 2 or more initiatives and 1 goal from each initiative	Addresses 1 initiative and 1 goal from each initiative	Addresses no initiatives	3
CTE Regional Need	High regional need evidenced by labor market data, advisory committee ranking (1 or 2) and additional data/information.	Moderate regional need evidenced by labor market data, advisory committee ranking (3 or lower) and other data/information	Low regional need evidenced by labor market data, no advisory committee recommendation and no other data/information	No regional need	3
Similar programs	No similar regional programs	One similar regional program	Two similar regional programs	Multiple similar regional programs	3
SRJC PRPP	Included in PRPP and ranked 1st or 2nd in cluster priorities	Included in PRPP and 3rd in cluster priorities	Included in PRPP but lower than 3rd in cluster priorities	Not in PRPP	?
Financial Analysis: Cost Increases	Program has negligible cost increase: Uses existing resources, including equipment, staff, or facilities. Library materials may be required.	Program requires some new resources or cuts to existing programs. Funding available in department or cluster	Program requires significant new resources or cuts to other programs and/or significant financial investment. District commitment is needed to fund	Program requires resources that may be beyond ability of the District to fund	2
Partnership**	Includes 3 or more partners	Includes 2 partners	Includes 1 partner	Does not include partners	3
Total Points based on Rubric					*14+?*

**Partner may be internal or external (e.g. other SRJC departments; business; industry; professional organization; non-profit organization; etc.)

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