Proposal

Conversion of Information Systems Concentration of the B.S. in Computer Science and Information Systems (CSIS) to a Full Degree Program

Proposed new degree:
B.S. in Computer Information Systems

Prepared by

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CONVERTING OPTIONS/CONCENTRATIONS WAIVER

Institutions requesting a waiver to the New Degree Program Review Process when converting an existing option or concentration into full program must answer the following questions:

1. Is the program degree level within the mission designation of the college?

The proposed conversion will result in a B.S. in Computer Information Systems, which is within Stockton's current mission level of Masters.

2. What is the need/impetus for the requested change?
- external review?
- accreditation review?
- other? (please explain below)

We plan to pursue accreditation for the new degree program through the Accreditation Board for Engineering and Technology (ABET). To do so, the current Information Systems (IS) concentration must first be converted to a full degree program. Additionally, during our most recent five-year review of the existing program in Computer Science & Information Systems (CSIS), our external evaluator recommended that we convert the IS concentration to a full degree program regardless of our pursuit of ABET accreditation.

3. How long has the option/concentration been offered?

The existing Information Systems concentration of the B.S. in Computer Science and Information Systems has been offered since 1988. It evolved from an earlier program in Information Science that dates back to 1975 or earlier.

4. What is the enrollment history?

The number of students enrolled in the Information Systems concentration for the past several years is as follows:

	Fall '06	Fall '07	Fall '08	Fall '09	Fall '10	Fall '11	Fall '12	Fall '13	Fall '14	Fall '15	Fall '16
# students	89	75	80	91	111	127	136	124	106	93	114

The enrollments in the Information Systems concentration have been stable over the past 10 years, with a spike during the 2010-2013 time-period.

5. Will the new program have sufficient content depth to justify classification as a major?
- Will the new program have sufficient credits to justify being a major?
- How is the new program different from the existing degree program?

The existing B.S. in Computer Science & Information Systems, Information Systems Concentration, consists of: (a) a CSIS major core of 29 credits, (b) an IS concentration core of 16 credits, (c) 24 credits of IS concentration electives, and (d) 11 additional credits of CSIS major electives, which can be additional CSIS from any concentration and can also be MATH 1100 (Pre-Calculus). This is a total of 80 credits in program and related courses. The remaining 48 credits of the current degree are Stockton's general education requirements. The requirements of the existing IS concentration of the CSIS major are in line with the requirements of a typical full degree program in Information Systems. Thus, the content depth is sufficient to justify conversion to a full degree program.

The new program, B.S. in Computer Information Systems, will consist of: (a) 52 credits of CIS courses (32 required CIS credits + 20 CIS elective credits), (b) 16 credits of business environment courses, (c) 8 credits of quantitative courses, and (d) 4 additional credits of CS, CIS, or electives. All of the required CIS courses in the proposed new degree currently exist in the current concentration except for three. The proposed new B.S. in Computer Information Systems will introduce two new elective courses. Two courses that are currently electives will become required, with two courses that are required by the current concentration becoming electives.

6. Will the college continue to offer the existing major?
    - In establishing the new major, what will be the impact on the existing major?

The existing IS concentration of the existing B.S. in Computer Science & Information Systems will be phased out. It will continue until all current students in the concentration either graduate or switch to the new degree, but no new students will be enrolled into the existing concentration. There should be no effect on the ability to serve students who remain in the existing IS concentration as all of the required courses of the existing concentration will still exist in the new CS or CIS degrees.

7. Would students currently enrolled in the option/concentration be "grandfathered" as to their degree title?
    - Can students choose either the title of the existing degree program or the title of the degree program created from the option/concentration as their graduation major?
    - Will current students receive the new degree designation?

Current students of the existing IS concentration can choose whether to retain their current degree title or switch to the newly formed B.S. in Computer Information Systems. If they choose to switch to the new degree, they will be required to meet all of the requirements of the new degree.

8. Are sufficient resources available to support the new program in the following areas:
    - Personnel such as faculty and support staff?
    - Facilities?
    - Operating expenses -- equipment, library resources, etc.?

Given that the requirements of the proposed new degree program have significant overlap with the existing concentration's requirements, the new degree program should have a minimal effect on our resource needs. For example, the existing degree option and the new degree that results from the conversion require students to take the same number of courses offered by the CSIS program. The new degree, therefore, does not directly impact our resource needs. However, due to increasing enrollments, we estimate a need to offer approximately 3 additional course sections per semester, regardless of conversion.

9. Since the proposed option/concentration is part of an approved ongoing program, will the proposed conversion create any additional duplication with ongoing programs at other colleges in New Jersey?

The proposed conversion should not create any additional duplication with ongoing programs at other colleges in New Jersey.

Program Announcement Narrative Proposal

a. Program Objectives

Computer Information Systems (CIS) professionals bridge the gap between computer scientists and the people who use technology in a variety of settings. These specialists focus on integrating information technology solutions and business processes to meet the information needs of organizations. This major is ideal for creative analytical thinkers and problem solvers who want to play a key role in design, development, implementation and management of technology in organizational settings. Our curriculum has a strong technology focus, while emphasizing the organizational and behavioral aspects of CIS. Offering a stand-alone BS in Computer Information Systems will provide students a clear understanding of the CIS discipline and enable us to prepare our students to be capable, responsible, and focused professionals, based on their interests and career goals, while providing them the benefits of our liberal arts curriculum

The B.S. in Computer Information Systems is designed to provide a solid education in preparation for employment as CIS professionals, or entry to graduate school for research and advanced studies. All CIS majors will learn programming and problem solving, systems analysis and design, database systems, computer networking, human computer interface, and IS strategy & project management. In addition to the technical skills, our curriculum provides students a sound understanding of organizational principles and practices for strengthening their communication, teamwork and collaboration, ethical reasoning skills, and a variety of business environment courses. Our degree offers a broad foundation enabling our graduates to acquire life-long learning skills needed to adapt and advance in an ever changing professional workplace.

The proposed degree, B.S. in Computer Information Systems, will be housed within Stockton's Computer Science and Information Systems program, whose mission statement is as follows:

The mission of the CSIS Program at Stockton University is to provide outstanding undergraduate degrees and courses that are consistent with the missions of the University and the School of Business, and that meet the full range of needs of the students. The Program provides students with an adaptable curriculum and pedagogy that complements the evolution of computer technology and the computing profession so that our graduates will have:

- *A strong theoretical and application oriented background across the computer science and information systems disciplines;*
- *Practical skills and experience that enables them to become valuable contributors to their profession;*
- *The ability and motivation to grow professionally and/or to continue their education after graduation;*
- *An understanding of their professional and ethical responsibilities.*

In addition to the educational objectives of the CSIS program outlined in the above mission statement, graduates of the B.S. in Computer Information Systems will additionally have:

- The capability to apply technology skills and organizational principles to design, implement and manage technological solutions in various domains such as business, health, hospitality, aviation, or entertainment;
- The ability to perform effectively in software application development;
- Skills such as analytical thinking, logic processing, decision making, professional communication, system analysis, data analytics, database design, project management, and information security, required to address organizations' strategic goals, day-to-day operations, and regulatory compliance;
- The aptitude to explore innovative technologies to attain competitive advantage for organizations.

b. Evaluation and Learning Outcomes Assessment Plan

Computer Information Systems (CIS) Learning Outcomes: The CIS Learning Outcomes are adapted from the Accreditation Board for Engineering and Technology's (ABET) learning outcomes for IS Programs. Learning Outcomes (a) through (i) below are common to all degrees offered within the CSIS program. Learning Outcomes (j) is specific to the proposed new B.S. in Computer Information Systems. By the time of graduation, CIS students will attain:

a) An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.
b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
d) An ability to function effectively on teams to accomplish a common goal.
e) An understanding of professional, ethical, legal, security and social issues and responsibilities.
f) An ability to communicate effectively with a range of audiences.
g) An ability to analyze the local and global impact of computing on individuals, organizations, and society.
h) Recognition of the need for and an ability to engage in continuing professional development.
i) An ability to use current techniques, skills, and tools necessary for computing practice.
j) An understanding of processes that support the delivery and management of information systems within a specific application environment.

Performance Indicators: Our assessment plan utilizes a mixture of direct and indirect measures, such as assessment problems embedded into exams, term projects in upper level courses, etc. We use the following set of performance indicators to assess student progress on our program learning outcomes:

Outcome a: An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.

- a.1: Students will demonstrate foundational computing knowledge.
- a.2: Students will use statistical concepts to model and interpret data.
- a.3: Students will apply discrete mathematics concepts and algorithms.

Outcome b: An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.

- b.1: Students will analyze the computing requirements for a given problem description.
- b.2: Students will identify the resources, key components, and algorithms required to solve a given problem.
- b.3: Students will examine alternative solutions for a given problem.

Outcome c: An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.

- c.1: Students will design a computer-based solution for a given problem description.
- c.2: Students will implement a computer-based system, process, component, or program from a given specification.
- c.3: Students will evaluate a computer-based system, process, component, or program to assess its conformance to a given specification.

Outcome d: An ability to function effectively on teams to accomplish a common goal.

- d.1: Students will research and gather information.

- d.2: Students will fulfill duties of team roles.
- d.3: Students will share in the work of the team.
- d.4: Students will listen and communicate with other teammates.

Outcome e: An understanding of professional, ethical, legal, security and social issues and responsibilities.
- e.1: Students will recognize and evaluate ethical issues involved in a professional setting.
- e.2: Students will recognize and describe current issues in security.
- e.3: Students will demonstrate understanding of intellectual property issues.
- e.4: Students will recognize the need for proper etiquette and proactive social behavior in professional settings.

Outcome f: An ability to communicate effectively with a range of audiences.
- f.1: Students will write technical documentation of a computer-based system, process, component, or program.
- f.2: Students will make oral presentations for an appropriate target audience.
- f.3: Students will prepare materials for a non-technical audience.

Outcome g: An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- g.1: Students will evaluate the impact of computing on individuals.
- g.2: Students will evaluate the impact of computing on organizations.
- g.3: Students will evaluate the impact of computing on society.

Outcome h: Recognition of the need for and an ability to engage in continuing professional development.
- h.1: Students will read and report on papers in the technical literature.
- h.2: Students will involve themselves in professional activities (e.g., professional meetings, presentations, workshops, internships).

Outcome i: An ability to use current techniques, skills, and tools necessary for computing practice.
- i.1: Students will use a professional integrated development environment (IDE) for implementing programming projects.
- i.2: Students will research online resources to learn and utilize new techniques, skills, and tools.

Outcome j: An understanding of processes that support the delivery and management of information systems within a specific application environment.
- j.1: Students will understand the processes that support the delivery of an information system within a specific application environment.
- j.2: Students will understand the processes that support the management of an information system within a specific application environment.

Stockton University Essential Learning Outcomes: Stockton University has established a set of university-wide Essential Learning Outcomes (ELOs). The following table provides a mapping of the performance indicators for the proposed B.S. in Computer Information Systems to the Stockton University ELOs:

		Computer Information Systems Performance Indicators																											
		a.1	a.2	a.3	b.1	b.2	b.3	c.1	c.2	c.3	d.1	d.2	d.3	d.4	e.1	e.2	e.3	e.4	f.1	f.2	f.3	g.1	g.2	g.3	h.1	h.2	i.1	i.2	j.1	j.2
Stockton University Essential Learning Outcomes	Adapting to Change																									X		X	X	X
	Communication Skills													X				X	X	X	X					X			X	X
	Creativity and Innovation							X	X																				X	X
	Critical Thinking				X	X	X			X												X	X	X					X	X
	Ethical Reasoning													X	X		X	X												
	Global Awareness																					X	X	X						X
	Information Literacy and Research Skills										X														X			X		
	Program Competence	X			X	X	X	X	X	X						X	X		X						X		X	X	X	X
	Quantitative Reasoning		X	X																										
	Teamwork and Collaboration											X	X	X				X												

Curriculum Mapping: The proposed B.S. in Computer Information Systems includes required IS courses offered by the CSIS program as well as required courses from the Business program. Additionally, there are elective CIS courses offered by the CSIS program and elective business courses. The curriculum mapping (mapping courses to performance indicators) presented here includes only a mapping of courses offered by the CSIS program, and does not include courses offered by other academic programs, whether required or elective.

		Computer Information Systems Performance Indicators																											
		a.1	a.2	a.3	b.1	b.2	b.3	c.1	c.2	c.3	d.1	d.2	d.3	d.4	e.1	e.2	e.3	e.4	f.1	f.2	f.3	g.1	g.2	g.3	h.1	h.2	i.1	i.2	IS.j.1	IS.j.2
Required CSIS Courses	CSIS 1xxx: IS & Digital Innovation	Y				Y	Y			Y	Y				Y	Y	Y	Y		Y	Y	Y	Y	Y				Y	Y
	CSIS 1206: Statistics		Y			Y	Y				Y	Y	Y	Y					Y	Y	Y						Y	Y		
	CSIS 2xxx: Scripting & Logical Thinking	Y		Y	Y	Y	Y	Y	Y	Y									Y								Y	Y	Y	
	CSIS 2101:Programming & Problem Solving I	Y		Y	Y	Y	Y	Y	Y	Y									Y								Y	Y	Y	
	CSIS 2210: Systems Analysis & Design	Y			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y		Y				Y		Y	Y
	CSIS 3222: Database Systems		Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y					Y	Y							Y		Y	
	CSIS 3230: Computer Networking Principles	Y			Y					Y			Y			Y														
	CSIS 3472: Human Computer Interface				Y	Y	Y				Y	Y	Y	Y						Y	Y					Y	Y		Y	Y	
	CSIS 3475: IS Strategy & Project Management				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	Y	Y	Y
Elective CSIS Courses	CSIS 2102: Programming & Problem Solving II	Y		Y	Y	Y	Y	Y	Y	Y									Y										Y	
	CSIS 3241: E-Commerce	Y						Y			Y	Y	Y	Y	Y	Y				Y	Y									Y	Y
	CSIS 3381: Information Assurance & Security	Y									Y			Y	Y	Y						Y	Y	Y	Y	Y		Y	Y	
	CSIS 3470: Mobile & Desktop Application Development	Y			Y	Y	Y	Y	Y	Y						Y											Y	Y		
	CSIS 3xxx Enterprise System	Y			Y	Y			Y		Y	Y	Y	Y					Y	Y	Y	Y	Y	Y					Y	Y
	CSIS 4135: Web Application Engineering			Y	Y	Y	Y	Y	Y		Y																Y	Y		
	CSIS 4211: Advanced System Analysis				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				Y	Y	Y		Y				Y		Y	Y
	CSIS 4223: Advanced Database		Y	Y	Y	Y	Y	Y	Y	Y						Y			Y								Y		Y	
	CSIS 3xxx: System & Network Administration	Y			Y					Y			Y			Y														
	CSIS 2259: Business Analytics		Y	Y		Y	Y																							

c. Relationship to Institutional Strategic Plan and Impact on its own Offerings

As the field of computing has grown and diversified, so is the need to have focused curricular recommendations for Computer Information Systems(CIS). The proposed BS in Computer Information Systems is in alignment with Stockton's mission statement

> *"Our insistence upon breadth of education for all students does not preclude an emphasis on depth of study in the major disciplines but rather, supplements it. Our academic programs must offer students a real understanding of the ideas and methods of their disciplines, including those most recently developed. Exposure to many disciplines and intensive investigation of one discipline should prepare graduates to move into appropriate fields of employment, or to continue with graduate academic or professional study"*

The educational goals of the CIS curriculum emphasize breadth, as well as depth. The students will be required to take courses including Programming & Problem Solving I, Scripting & Logical Thinking, Computer Networking Principles, Information Systems & Digital Innovations, System Analysis & Design, Human Computer Interface, and IS Strategy & Project Management. The electives offered include courses

like Programming & Problem Solving II, E-Commerce, Information Assurance & Security, Mobile Application Development, Advanced System Analysis, Advanced Database, Web Application Engineering, System & Network Administration, and Enterprise Systems. The curriculum is based on the recommendations made by the Association for Computing Machinery (ACM) and Association for Information Systems (AIS).

In alignment with Stockton's mission of imparting liberal arts education, we will develop intellectual capabilities of our students by encouraging high level of student-teacher interactions inside and outside the classrooms. We aim to provides a personalized approach to teaching and learning by using innovative instructional methods technological resources to communicate and interact with our students.

Our faculty believes that teaching and research goes hand in hand and is involved in both theoretical and pedagogical research projects. The faculty will continue to encourage, support and involve students in their scholarly activities to provide a wonderful learning experience for our students. The CSIS program is committed towards General Studies Curriculum and during the last 5 years have offered various sections of G courses.

Our faculty recognizes the importance of internships for our students' job readiness and professional growth as it could help them to experience possible career opportunities, apply knowledge and skills developed in the classroom, and gain practical experience which could distinguish them from other candidates when they apply for a job after graduation. The proposed degree is designed to facilitate the internship opportunities for our students.

Relationship to Institutional Strategic Plan: Stockton's institutional strategic plan, known as "Stockton 2020," includes four themes: Learning, Engagement, Global Perspectives, and Sustainability. The proposed new degree, B.S. in Computer Information Systems (CIS), will continue to relate to these four themes as follows:

- *Learning:* Converting our existing IS concentration of the CSIS degree will enable our pursuit of accreditation for this new CIS degree with the Accreditation Board for Engineering and Technology (ABET) further enhancing the educational and career pursuits of our students. Similar to the existing CSIS (IS concentration) students, our CIS students will have the opportunity to collaborate with our CSIS faculty on research and other scholarly activities. Such student-faculty collaborations have resulted in publications and presentations co-authored between faculty and students, and the CIS students will have the same experiences. Several of our CSIS (IS concentration) students go on to pursue graduate level degrees upon completion of their Stockton undergraduate degree, and the new CIS students will continue the tradition. These things relate directly to the Stockton 2020 strategy "S1 - Deliver high value-added learning experiences and promote scholarly activity." Multiple CSIS courses will continue to serve as electives in the interdisciplinary minor in digital literacy and multimedia design. This relates to the Stockton 2020 strategy "S2 – Promote liberal arts ideals to develop lifelong learners."
- *Engagement:* We have a very active student club, the Stockton Computer Society, who organize an annual Computer Festival, attend the dinner meetings of the South Jersey Chapter of the IEEE Computer Society, plan invited speakers utilizing the ACM's Distinguished Speaker service, and participate in programming and other computing competitions, among many other activities. Several students have also participated in the development and delivery of workshops for the local community on topics such as cyber security, etc. The CSIS faculty is closely involved with our student organization, Stockton Computer Society to provide students with information and experience related to computer science and information systems through guest industry speakers, conferences, programming competitions, and more. The students take a lead role and the faculty provides the required support and guidance as necessary to achieve the purpose of the club.

- *Global Perspectives:* One of our program learning outcomes relates directly to this Stockton 2020 theme: "Outcome g: An ability to analyze the local and global impact of computing on individuals, organizations, and society."
- *Sustainability:* Relating also to Learning Outcome g, one cannot analyze the global impact of computing, in particular the global impact on society, without considering sustainability issues, such as Green Computing and more generally the impact technology has on the environment.

Impact on other Stockton programs: The CSIS program offers the Statistics course (CSIS 1206) taken by all Business majors, as well as a variety of other majors. This course will be required by the proposed new CIS degree, so there will be no impact related to this service course.
Students in the proposed new CIS degree will be required to take 4 courses chosen from a list of 7 business courses. One of these courses is a required course, and two are offered as electives for the existing IS concentration of the CSIS degree. These two electives are chosen by nearly all of the students in the current concentration. So the direct impact is approximately 1 additional business course per student in the proposed new degree. However, given students can choose any 4 from a set of 7, the enrollment impact will be spread over several courses. Additionally, many of the students in the current CIS concentration often minor in Business, and thus, even 1 extra business course per student may be an overestimate.

d. Need
The Bureau of Labor Statistics, Occupational Outlook Handbook (https://www.bls.gov/ooh/computer-and-information-technology/home.htm), lists the following CIS related careers, along with 2015 median salary and projected job growth through 2024:

Occupation	2015 Median Pay	Projected Growth through 2024
Computer and Information Systems Managers	$131,600 per year	15% (Much faster than average)
Computer Network Architects	$100,240 per year	9% (Faster than average)
Information Security Analysts	$90,120 per year	18% (Much faster than average)
Computer Systems Analysts	$85,800 per year	21% (Much faster than average)
Database Administrators	$81,710 per year	11% (Faster than average
Computer Programmers	$79,530 per year	-8% (Decline)
Network & Computer Systems Administrators	$77,810 per year	8% (As fast as average)

Several CIS related careers appear in the 2017 CNN Money list of the "100 Best Jobs in America" (http://money.cnn.com/pf/best-jobs/2017/list/index.html) including the following:

Rank	Occupation	Median Pay	10 Year Job Growth
1	Mobile Application Developer	$97,100	19%
5	Information Assurance Analyst	$98,900	18%
9	Database Analyst	$70,100	11%
9	IT Director	$128,100	15%
14	Webmaster	$61,200	27%
22	IT Operations Manager	$97,200	15%
33	Video Game Designer	$81,600	13%
35	IT Training Specialist	$67,400	8%
38	IT Business Analyst	$83,000	21%
50	IT Security Director	$147,000	15%
52	Database Administrator	$93,800	11%
57	User Interface Designer	$73,800	27%

64	Programmer Analyst	$82,300	21%
80	Software Developer	$96,600	13%
99	User Experience Designer	$85,900	13%

The following 2 schools within the State of New Jersey are the only NJ institutions to currently offer undergraduate Information Systems degrees that are accredited by the Accreditation Board for Engineering and Technology (ABET), under ABET's Information Systems criteria:

Institution	**Degree Offered**	**Years ABET Accredited**
New Jersey Institute of Technology	B.S. in Business and Information Systems B.A. in Information Systems	2012-present (B.S.) 2002-present (B.A.)
Rowan University	B.S. in Management Information Systems	2006-present

Additionally, the following 11 schools within the State of New Jersey currently offer undergraduate Information Systems degrees that are not accredited by ABET (note: NJIT is represented in both lists for different academic programs). We have included our own institution in this list, with our current degree offerings B.S. in Computer Science and Information Systems / B.A. in Computer Science and Information Systems. Our proposed new B.S. in Computer Information Systems is a conversion of our existing Information Systems concentration of our current B.S. degree. We intend to phase out the existing concentration that this proposed degree is designed to replace. Thus, we are not proposing any additional redundancy beyond the degree programs currently available within the State of New Jersey.

Institution	**Degree Offered**
Bloomfield College	B.S. in Computer Information Systems
College of Saint Elizabeth	B.A. in Computer Information Systems
DeVry University	B.S. in Computer Information Systems
Georgian Court University	B.A. in Computer Information Systems
New Jersey Institute of Technology	B.S. in Web and Information Systems
Stockton University	B.S. in Computer Science and Information Systems B.A. in Computer Science and Information Systems
Rider University	B.S. in Computer Information Systems
Rutgers University	B.S. in Management Information Systems
Seton Hall University	B.S.B.A. in Management Information Systems
Stevens Institute of Technology	B.S. in Information Systems
Strayer University	B.S. in Information Systems

There are relatively few B.S. or B.A. degrees in Computer Information Systems (or its other common names, such as Information Systems, or Management Information Systems) currently offered within the State of New Jersey, ABET accredited or otherwise.

e. Students

Anticipated enrollments in the proposed CIS major are estimated directly from the enrollment history of the existing IS concentration of the B.S. in CSIS. Recent enrollment history in the concentration that this degree will replace is as follows:

	Fall '06	Fall '07	Fall '08	Fall '09	Fall '10	Fall '11	Fall '12	Fall '13	Fall '14	Fall '15	Fall '16
# students	89	75	80	91	111	127	136	124	106	93	114

f. Program Resources

The CSIS program currently has 9 full-time tenure-track lines (one of which is filled this year with a 13D) and we also have 1 half-time faculty member. All of the full-time tenured/tenure-track faculty have doctoral degrees. Of these, three have doctoral degrees in Information Systems, four have doctoral degrees in Computer Science, and one has an Ed.D. Additionally, we have several adjuncts who currently offer courses in the existing program, who will continue to do so in the new.

The existing concentration and the new degree that results from the conversion require students to take the same number of courses offered by the CSIS program. Therefore, the new degree does not directly increase our resource needs. However, due to increasing enrollments, our preliminary analysis indicates that we need faculty (full time or adjuncts) to support three additional class sections every semester, regardless of conversion to full degree.

Degree Requirements

Computer Information Systems Degree Program Requirements (80 credits total):		
Computer Information Systems (52 credits):		
Computer Information Systems Core (required courses): 32 credits		
CSIS 1xxx	Information Systems & Digital Innovations **(Replaces CSIS 1180, Computing Concepts and Applications)**	4 credits
CSIS 2xxx	Scripting & Logical Thinking **(proposed new course)**	4 credits
CSIS 2101	Programming & Problem Solving I	4 credits
CSIS 2210	Systems Analysis & Design	4 credits
CSIS 3222	Database Systems	4 credits
CSIS 3230	Computer Networking Principles	4 credits
CSIS 3472	Human Computer Interface	4 credits
CSIS 3475	IS Strategy & Project Management **(Restructured IT Project Management)**	4 credits
Computer Information Systems Electives (choose 5 of the following): 20 credits		
CSIS 2102	Programming & Problem Solving II	4 credits
CSIS 3241	E-Commerce	4 credits
CSIS 3381	Information Assurance & Security	4 credits
CSIS 3470	Mobile & Desktop Application Development **(Restructured Application Development)**	4 credits
CSIS 4211	Advanced System Analysis	4 credits
CSIS 4223	Advanced Database	4 credits
CSIS 4135	Web Application Engineering	4 credits
CSIS 2xxx	System & Network Administration **(proposed new course)**	4 credits
CSIS 3xxx	Enterprise Systems **(proposed new course)**	4 credits
CIS Environment (16 credits):		
Choose 4 of the following courses:		
ACCT 2110	Financial Accounting	4 credits
ACCT 2120	Managerial Accounting	4 credits
MGMT 2110	Intro to Management	4 credits
MKTG 2110	Marketing Principles	4 credits
MGMT 3120	Operations Management	4 credits
PLAW 2120 or PLAW 3100	Business Law I or Legal, Social, Ethical Environment of Business	4 credits
ECON 1200	Macroeconomics	4 credits
Quantitative Requirements (8 credits):		
CSIS 1206	Statistics	4 credits
MATH 2225 or CSIS 2259	Discrete Mathematics **or** Business Analytics ***(Restructured Operations Research)***	4 credits
Cognates (4 credits):		
Choose 1 of the following:		
CSIS 4800	Independent Study: With a proposal approved in advance by the CSIS program, to ensure sufficient IS coverage, a student who meets eligibility guidelines. (TBD) may use up to 4 credit of	4 credits

	independent study towards the required IS electives. Must be supervised by full time CSIS faculty	
CSIS 4900	Internship: Must be supervised by full time CSIS faculty.	4 credits
CSIS or cognate:	Any additional CSIS course or other course approved by CSIS preceptor.	4 credits

General Education Requirements (48 credits total):		
General Studies (32 credits):		
32 credits of General Studies credits per Stockton's current General Studies distribution		
At Some Distance (16 credits):		
Additional General Studies or other courses outside the degree program.		