

Middlesex Community College

Management Information Systems (MIS) Self- Study

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Program/Discipline: Management Information Systems(MIS)

A. MISSION

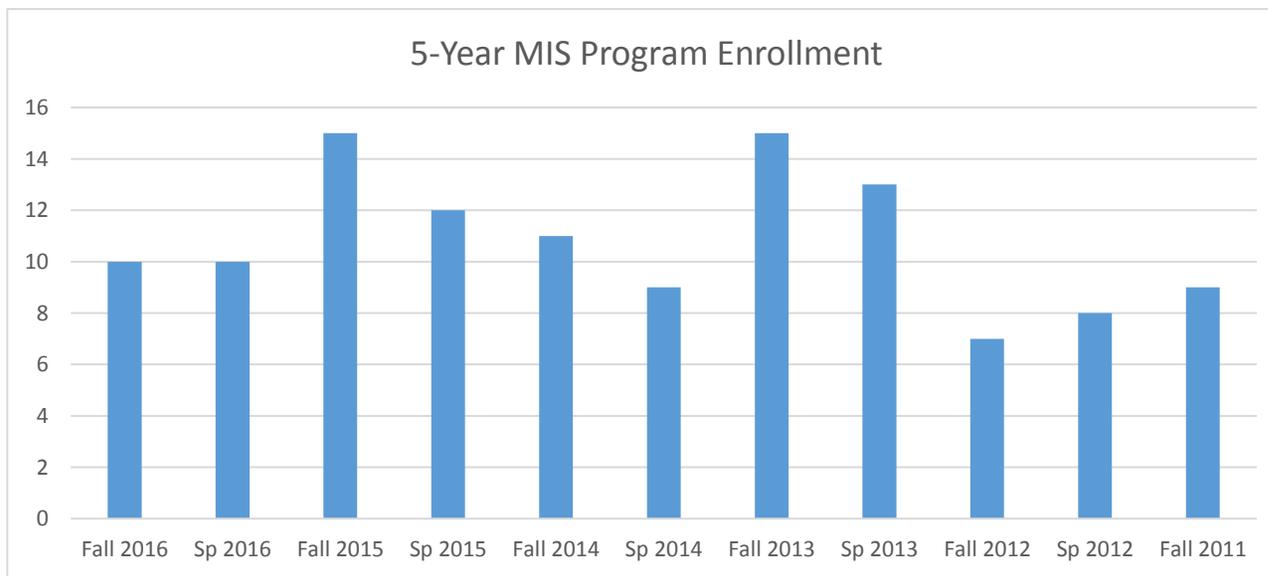
<p>1. What are the program's goals and learning outcomes? (stated in the Catalog)</p>	<p>The Management Information Systems degree program prepares students to become professionals who help organizations to leverage information systems for strategic gains. The MIS degree program at MxCC offers a blend of business, computer, and general education classes that equate to the first two years of a baccalaureate degree program. Students completing their degrees in MIS may continue on to earn four-year degrees or they may pursue an entry-level position in IT.</p> <p>According the U.S. Bureau of Labor Statistics, the employment of computer and information systems managers is expected to grow 15% from 2014 to 2024; this is much faster than the average of all occupations. Demand for computer and information systems managers will continue to grow as firms increasingly expand their operations to include digital platforms.</p> <p>Upon successful completion of all program requirements, graduates will be able to:</p> <ol style="list-style-type: none">1. Analyze, develop, and design code through knowledge and comprehension of information systems concepts and skills2. Identify, gather, measure summarize, verify, analyze, design, develop and test programs and hardware design.3. Identify and solve unstructured problems in unfamiliar setting and exercise judgment based on facts.4. Communicate through development of proficiency in oral/written/electronic communication skills and the development of the ability to explain programming concepts and code to others.5. Work collaboratively with a diverse team, including organization, control, and assessments of group-based work, and provide leadership when appropriate.6. Apply current technology, analyze business problems, and design and develop software.7. Communicate using network technologies, access information via internet, and understand information integrity and security issues.8. Gain awareness of legal, regulatory, and ethical issues facing the profession, awareness of information technology and network security, and understanding the methods for creating and managing change in organizations
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B. ENROLLMENT/RECRUITMENT/RETENTION/COMPLETION/TRANSFER EFFORTS

MIS Program Enrollments – Past 5 years

Program Major	Fall 2016	Year 5		Year 4		Year 3		Year 2		Year 1	
		Spring 2016	Fall 2015	Spring 2015	Fall 2014	Spring 2014	Fall 2013	Spring 2013	Fall 2012	Spring 2012	Fall 2011
MIS	10	10	15	12	11	9	15	13	7	8	9



1. What do enrollment trends for the past five years signify?

The enrollment trends shown above for the past 5 years show that the MIS degree has maintained an average of approximately 10 students, which is consistent with the program’s enrollment since its inception in 2008. Unlike the Computer Information Technology (CIT) degree which offers students skills that can be immediately applied to the IT marketplace, the MIS transfer-focused degree seeks to offer students the first two foundational years of a baccalaureate degree in the discipline, and for that reason it has never achieved the same enrollment gains as its counterpart, CIT which has approximately 60 students.

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	<p>The Management Information System (MIS) degree program was developed in 2008 in response to the challenges that Information Systems (IS) majors faced when transferring to four-year CSU schools. In many cases, IS majors were converting to General Studies because so many of the technical courses in the degree simply did not transfer as equivalent courses. Technical courses taken at MxCC would transfer as electives and students were then forced to repeat the same courses in order to earn university credit. This difficulty was infuriating our students and undermining our IS degree program.</p> <p>The Program Coordinator, who earned her Master’s degree at Central Connecticut State University with a concentration in MIS, worked with the Chair of the school’s MIS department to determine what courses would be suitable to offer at MxCC for students seeking to transfer to Central. Armed with this information, she recommended that the transfer-oriented MIS degree be developed, and thus the new MIS degree was created. As expected, students who are interested in pursuing a bachelor’s in MIS enrolled in the degree.</p> <p>After the degree was developed, the Program Coordinator made revisions in 2010 to include public speaking and a few more technical elective courses. Initially, the degree’s only technical courses were programming. The additional of technical electives offered students opportunities to get more practical hands-on experiences. Students were then able to gain useful skills for internships and entry-level positions. Working professionals who desire a career in business or technology also find this degree especially attractive because it combines business and computer-related courses and prepares them for potential leadership roles in IT.</p> <p>The fact that our system has recently created the Transfer Articulation Policy (TAP) to overcome the myriad of challenges that students face as they transition from the community colleges to universities in our system, further attests to the rationale behind the creation of this degree. Although the data shows that the Management Information Systems major has not been a highly enrolled program, it does serve the purpose for which it was intended and many of our graduates have continued on to pursue baccalaureate degrees and achieve career advancement.</p>
<p>2. Describe recruitment efforts undertaken.</p>	<p>The following initiatives were undertaken in order to recruit for the MIS degree program:</p>

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1. **Career Café:** The Program Coordinator developed a program called the Career Café with the express purpose to disseminate relevant information to high school students about their future careers. The students received information about computing careers that helped them to understand the nature of the work, employment opportunities, required qualifications, and expected pay. Information about the computer degree programs at MxCC was provided to students and the Guidance Departments. The Career Café, funded by a Perkins grant, was hosted at the following area high schools: Haddam Killingworth, Vinal Technical, Maloney, Platt, Nathan Hale Ray, and Middletown H.S.
2. **Network Event:** The Program Coordinator founded the Computer Club in 2009 to harness student interest in computer technology. This student organization has been in operation since its inception and serves as an extension of the computer-related degree programs. There have been club sponsored events that are designed to increase exposure to careers in the field of Information Technology and recruit potential students for our degree programs. The annual Network Event invites professionals from various specialties in IT to share their expertise with participants. Students and guests have the opportunity to learn firsthand from experts in the field and begin to formulate their professional contacts and direction. Additionally, the Program Coordinator provides information about which degree prepares students to embark upon the highlighted IT career. An information booth gives prospective students a chance to gather program and admission data.
3. **TECH FEST:** The Computer Club, funded by Perkins, hosted a technology fair for area high school students. Students, faculty, and administrators from Vinal Technical HS, A. I. Prince Technical HS, and Wilcox Technical HS attended the day-long event that showcased students' technical skills, degree opportunities at college, as well as employment opportunities in the field of IT. Each participant received program brochures, admission information, and was encouraged to consider attending MxCC to begin their college career.
4. **Credit for Life Fair:** The Program Coordinator served on the Executive Board and as the Chair of the Career/Education Sub-Committee. Each year seniors of Middletown High School take part in the real-life simulation exercise that is jointly led by area business and industry partners. The fair provided the Program Coordinator an opportunity to share information about MxCC's offerings, the

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	<p>computer-related degrees, and to field students' questions about making the transition to college. This was also used as a recruiting tool.</p> <ol style="list-style-type: none"> 5. What to do with a Major in Fair: The MIS program was represented at the fall campus-wide career fair. This fair is specifically designed to provide information to students about the majors offered at MxCC and the careers to which they are linked. 6. Career Panel Discussions: The Program Coordinator participated in career panel discussions hosted by the Counseling Center. She participated in Experience College Day. 7. Exploring Business and Technology Career: This career exploration course was developed and taught by the Program Coordinator in an effort to help undecided students to consider careers in the fields of business and technology. Students had the privilege of hearing from professionals and then shadowing them in the workplace. As a result of this semester-long evaluative course, some students were able to properly assess and choose computer-related majors. 8. Program Brochures and Mass Mailing: The Program Coordinator developed promotional brochures for the Management Information Systems degree program. An introductory letter and the program brochure were mailed to area high schools, local businesses, non-profit organizations to recruit potential students. (Program brochure is attached.) 9. Computer Club: Social events held by the club provide an opportunity to harness student in technology. Partnership with Vinal Tech on e-cycling was also used for recruiting.
<p>3. Describe retention efforts undertaken.</p>	<p>The following initiatives were undertaken in order to retain students in the MIS degree program:</p> <ol style="list-style-type: none"> 1. Technology Center: The Computer Club successfully petitioned for space on campus that could be used as a technology "<i>sand box</i>" in which students can gain hands-on experience with computers. The Technology Center was implemented in the fall of 2015 in Snow Hall room 512 and was outfitted with computers that were donated by Eversource Corporation. This hub for technological exploration, which initially hired one student worker, quickly began to attract other student volunteers who enjoyed troubleshooting and repairing computers. As of the spring 2017 semester, the Technology Center has hired four student workers to meet the demands of its computer repair and technical support services. Additionally, the Technology Center has been asked to provide other

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support services to the campus at large. The students have developed a web site for the Student Activities Office, they are working on an Information System to support the needs of the Magic Food Bus, and they support the classroom needs of faculty. Having a place where students can learn, serve, and grow in their professional and technical skills and earn a stipend while doing so has increased student retention. Instead of working part-time in non-IT jobs such as retail or food services, students can be gainfully employed on campus in the Technology Center where they learn and earn simultaneously. (See the attached Technology Center Reportⁱⁱ and brochureⁱⁱⁱ.)

2. **State-of-the-Art Equipment and Software:** With funds acquired from Perkins grants that she wrote, the Program Coordinator has purchased equipment for the Technology Center that gives students a chance to experience the latest technology. There are PC desktops, Mac all-in-one, laptops, tablets, a smart-TV, and a server in the students' sand box. The students also have access to Lynda.com an online video training school to satisfy their curiosity about cutting edge technological development. Using the partnership which MxCC has with Microsoft, we have installed SQL Server on the computers in the Technology Center and this software is being used as a teaching and learning tool.
3. **Relevant Curriculum:** The MIS curriculum was revised in 2010 to offer students options to gain technical skills. In addition to the required business, general education, and computer programming courses that made up the original degree, the Program Coordinator added a few other technical electives to make sure that the student was well rounded. In the CST201 Introduction to MIS course, students are given an opportunity to role-play as MIS consultants and work with real clients. This opens their understanding to the realities of this career.
4. **Relationship with Advisor:** The Program Coordinator makes a concerted effort to establish a working relationship with each student in the program and takes an active role in academic advising and career counseling. In addition to a having a Master's degree in Computer Information Technology, the Program Coordinator has also earned a Master's degree in Professional Counseling. Leveraging both degrees, she seeks to cultivate a positive relationship with her students in order to help guide them to academic and career success. She proactively, uses online resources to schedule advising appointments and meets each student at the point of his/her need. Her role as Computer Club advisor also provides opportunities to 'learn' her students and further strengthens her ability to assist.

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5. **Connecting Students to the World of IT:** Students have been invited to accompany the Program Coordinator to off-campus events where they are given the opportunity to interact with IT professionals. Together with the PC, students have attended seminars conducted by the Black Data Processing Associates and the Department of Homeland Security. The glimpse into the world of technology shows the students the relevance of their skills in the world today.
6. **Service Learning Opportunities:** To enrich the experience of our students, we have developed service-learning projects as a part of certain courses, club activities, and the degree also features an experiential internship. Students have the chance to put their IT skills to practical use in a number of ways:
 - Working with actual customers to solve real campus problems with technical solutions (Magic Food Bus Information System, Student Retention)
 - Serving students, faculty, and staff (Clinics, Technology Center, Classroom Assistants)
 - Showcasing their skills as they teach high school students (Tech Fest)
7. **Computer Club:** Creates a community for our students and helps them to forge new relationships around their common interest, thus enhancing retention.
8. **Course prerequisites:** Thoughtful consideration of course prerequisites have ensured that students have a higher chance of success within the program.

4. What do the completion/graduation rates for the program signify?

Five-Year MIS Graduations/Completions

	Year 5	Year 4	Year 3	Year 2	Year 1
MIS	2016	2015	2014	2013	2012
Total	3	2	2	1	2

The graduation rates of the program have been fairly steady for the past 5 years. Despite our best efforts to retain all students until they graduate, some transfer or enter the job market before earning degrees from MxCC, and others fail to persist. Some of our MIS students are working professionals and sometimes the pace at which they can take classes is affected by the demands of work and schedule of courses.

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MANAGEMENT INFORMATION SYSTEMS (MIS) PROGRAM REVIEW: FIVE-YEAR TREND

MIS Course Enrollments 2011-2016

Course	Fa11	Sp12	Fa12	Sp13	Fa13	Sp14	Fa14	Sp15	Fa15	Sp16	Fa16	Avg. Enroll*
CSA135	29	55	30	54	30	55	27	20	28	16	28	33.82
CSA140	n/a	n/a	18	n/a	30	n/a	29	25	29	25	26	26.00
CSC101	322	292	344	257	334	269	326	227	276	214	278	285.36
CSC205	n/a	n/a	n/a	25	n/a	n/a	16	n/a	19	n/a	n/a	20.00
CSC220	n/a	9	n/a	n/a	n/a	17	n/a	14	n/a	14	n/a	13.50
CSC295	n/a	n/a	n/a	11	n/a	6	n/a	9	n/a	9	n/a	8.75
BBG295	n/a	20	n/a	9	n/a	5	n/a	12	n/a	4	n/a	10.00
CST120	15	n/a	20	n/a	20	n/a	20	n/a	20	n/a	23	19.67
CST201	28	19	24	27	21	31	23	43	14	22	23	25.00
CST228	n/a	n/a	n/a	n/a	10	n/a	n/a	9	n/a	14	n/a	11.00
CST231	n/a	n/a	10	n/a	n/a	18	n/a	17	n/a	16	n/a	15.25
DGA241	18	n/a	19	n/a	19	5	22	n/a	19	n/a	n/a	17.00
Total	412	410	465	383	464	406	447	376	405	334	378	407.3**

*Average course enrollment for all semesters in which course was taught.

**Average semester enrollment.

MIS Course Completion Rates* 2011-2016

Course	Fa11	Sp12	Fa12	Sp13	Fa13	Sp14	Fa14	Sp15	Fa15	Sp16	Fa16	Average Rate**
CSA135	52.0%	61.5%	65.4%	65.2%	70.4%	86.5%	65.4%	71.4%	78.6%	93.3%	69.2%	68.99%
CSA140	n/a	n/a	71.4%	n/a	76.9%	n/a	85.7%	96.0%	78.6%	68.0%	60.0%	76.66%
CSC205	n/a	n/a	n/a	76.2%	n/a	n/a	69.2%	n/a	73.3%	n/a	n/a	72.90%
CSC220	n/a	75.0%	n/a	n/a	n/a	87.5%	n/a	71.4%	n/a	91.7%	n/a	81.40%
CSC295	n/a	n/a	n/a	72.7%	n/a	100%	n/a	55.6%	n/a	88.9%	n/a	79.30%
BBG295	n/a	100%										
CST120	100%	n/a	90.0%	n/a	83.3%	n/a	95.0%	n/a	80.0%	n/a	90.5%	89.80%
CST201	65.4%	73.7%	69.6%	77.8%	80.0%	83.3%	95.5%	76.2%	69.2%	61.1%	91.3%	70.36
CST228	n/a	n/a	n/a	n/a	100%	n/a	n/a	88.9%	n/a	84.6%	n/a	91.17%
CST231	n/a	n/a	90.0%	n/a	n/a	94.1%	n/a	82.4%	n/a	100%	n/a	91.63%
DGA241	80.0%	100%	89.5%	100%	85.7%	100%	81.8%	n/a	76.5%	n/a	n/a	89.19%

*Based on a grade of C- or better.

**Average course completion rate for all semesters in which course was taught.

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	The chart shows the enrollment and completion rates of technical and internship/co-op courses in the program. These courses are also shared by other programs such as CIT and CET.
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C. PROGRAM DESIGN: EXTERNAL PARTNERSHIPS

<p>1. Does your program utilize an advisory committee? Describe and evaluate the advisory committee’s role in the program, and future action steps.</p>	<p>Yes, we meet with an advisory committee annually. The committee is composed of industry professionals, program graduates, as well as baccalaureate faculty from area universities. The advisors discuss trends and requirements in the field and make suggestions to help recruitment and update the program as necessary.</p> <p>Initially, when the MIS degree was a part of the Business Division, the advisors were a part of a larger body which served all programs: Business Administration, Marketing, Accounting, Management Information Systems, and Information Systems. The meetings shared the spotlight among all the programs and in-depth discussion of MIS was not possible. A separate advisory board was constituted by the Program Coordinator to more specifically focus on the needs of the computer-related degree: MIS and CIT.</p> <p>Using information from the committee we are able to perform further research to help determine where and when changes are needed.</p>
<p>2. Please include a list of advisory committee members and their affiliations.</p>	<p>Dr. Alex Citurs – Eastern Connecticut State University (new) Matthew Hasson – The Computer Company Lori Heffernan – Liberty Bank Jonathan Hinkel – United Steel David Kuzminski – Town of Portland Rusty Nicola – Travelers Insurance Company Matthew Pezzente – MxCC MIS grad/Challenger Esports Prof. Louis Sapia – MxCC/Cigna Susan Smith – Liberty Bank Dr. Karen Tracey – Central Connecticut State University RoseAnn Vaughan – Vinal Technical High School Cheryl Young – MxCC MIS grad/Connecticut Education Association</p>

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<p>3. Attach advisory committee minutes for the last 2 years.</p>	<p>(See attached minutes.^{iv})</p>
<p>4. Is there an Internship experience required? Briefly describe its role and significance.</p>	<p>An internship or a cooperative work experience course is required to complete the program. Most students in the program opt to take the internship course which provides them with the opportunity to work in an IT role within a business or organization. The internship is very important in the degree program because it gives our students real-world working experience. Students are expected to complete 150 hours at a job site. While working they are expected to function as professionals, and at the end of their internship they receive a performance evaluation by their onsite supervisor. Proper work etiquette is emphasized during the internship course, and these important, transferrable workplace skills are a part of their overall assessment. They are evaluated on the following:</p> <p>Appearance – the student is expected to be properly attired (and groomed) for the business environment.</p> <p>Teamwork – the student is expected to be able to work well with others.</p> <p>Problem-Solving/Technical Skills – the student is expected to apply problem-solving skills to specific tasks to ensure logical and accurate outcomes.</p> <p>Adaptability – the students is expected to adjust to the work environment.</p> <p>Communication skills - the student is expected to communicate clearly.</p> <p>Punctuality – the student is expected to be on time for work.</p> <p>Internship project – the student is expected to complete an internship project in addition to assigned work.</p> <p>Completion of internship hours - the student is expected to complete 150 hours of work.</p> <p>In addition to the work completed at the job site, students are required to attend two-career oriented seminars. They learn how to create a proper resume and cover letter and interviewing techniques. The students are also expected to complete a project above and beyond the duties of the normal job. The purpose of the project assignment is to provide an opportunity for the student to develop and/or improve an aspect of their position. This course is very significant in the MIS program. Students have used the internship</p>

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	<p>experience to showcase their skills and, as a result, many have received job offers and employment.</p> <p>If a student is already working in an IT-related position, his/her job can be used as the internship site. The student would need approval from the Program Coordinator in order to confirm this arrangement. Students in non-IT jobs may choose the cooperative course as an alternative.</p>
<p>5. Describe other external partnerships.</p>	<p>The MIS program has forged relationships with the following external partners:</p> <ol style="list-style-type: none"> 1. Aetna Corporation – Hartford, CT <ol style="list-style-type: none"> a. Visited classes (<i>Senior VP – Head of Northeast Region</i>) b. Provided shadow internship 2. Apex Technology Group – Cranston, RI <ol style="list-style-type: none"> a. Internship host b. Network Event guest speaker (<i>Chief Technology Officer</i>) c. Employer of students 3. BDPA – Hartford, CT <ol style="list-style-type: none"> a. Network Event partner b. Visited Computer Club and classes (<i>President</i>) c. Assisted in the acquisition of computers for MxCC d. Offered discounted membership to students 4. Cigna – Hartford, CT <ol style="list-style-type: none"> a. Tech Fest guest speaker (<i>TECDP Associate</i>) 5. City of Middletown – IT Department – Middletown, CT <ol style="list-style-type: none"> a. Internship host b. Employer of students 6. Computer Company – Cromwell, CT <ol style="list-style-type: none"> a. Advisory Board Member b. Network Event guest speaker (<i>President & Vice President</i>) 7. Computer Sciences Corporation – East Hartford, CT <ol style="list-style-type: none"> a. Employer of students

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- b. Donated computers
- 8. **Eversource Corporation** – Newington, CT
 - a. Donated computers for classroom/club
 - b. Employees teach specialty courses
 - c. Network Event guest speaker (*Security Officer/Network Engineer*)
- 9. **Global Help Desk Services, Inc.** – Rocky Hill, CT
 - a. Internship host
 - b. Network Event guest speaker
 - c. Resume seminar for students (*Director of Human Resources*)
 - d. Employer of students
- 10. **Joomah** – Middletown, CT
 - a. Tech Fest guest speaker (*Chief Technology Officer*)
- 11. **Kazoom**
 - a. Network Event guest speaker (*Owner*)
- 12. **Left Brain Games** – Torrington, CT
 - a. Internship host
 - b. Network Event guest speaker (*Principal Interactive Developer*)
 - c. Faculty member
- 13. **Liberty Bank** – Middletown, CT
 - a. Internship host
 - b. Advisory Board Member
 - c. Employer of students
 - d. Donated computers
- 14. **Microsoft Corporation** – West Hartford
 - a. Network Event guest speaker (*Software Evangelist*)
- 15. **Mohegan Sun Casino** - Uncasville, CT
 - a. Internship host
- 16. **North End Action Team (NEAT)** – Middletown, CT
 - a. Internship host
 - b. Partnered with students on service-learning project (*Exec. Director*)
 - c. Network Event guest speaker

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	<p>17. Peach Pit Foundation – Portland, CT a. Funded the purchase of computers for the Computer Club giveaway</p> <p>18. Town of Portland – IT Department a. Internship host b. Advisory Board Member c. Employer of students</p> <p>19. Transform Computer Repair – Cheshire – CT a. Network Event guest speaker (<i>Owner</i>)</p> <p>20. Travelers Insurance Company – Hartford, CT a. Advisory Board Member b. Network Event guest speaker (<i>Senior Information Engineer</i>) c. Visited classes d. Donated books</p> <p>21. Verizon Wireless – Meriden, CT a. Visited classes (<i>Customer Specialist</i>) b. Network Event guest speaker</p> <p>22. Vinal Technical High School – IST Department a. Partnered on Computer Club e-cycling drive b. Advisory Board Member c. Faculty Member</p> <p>23. Xavier High School – IT Department a. Donated equipment b. Internship host c. Network Event guest speaker (<i>IT Director</i>) d. Faculty member</p>
<p>6. Have you created articulation agreements with four year institutions?</p>	<p>The MIS program was designed as a transfer-oriented program from its inception. The program was created in partnership with the Program Coordinator of the Management Information Systems degree program at Central Connecticut State University. The new degree was vetted through a series of meetings, and an agreement was informally established between MxCC and CCSU to offer the first two years of that school’s MIS degree.</p>

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	<p>The MIS degree has also been articulated with the Computer Information Systems (CIS) degree at Post University, and on March 1st there will be a formal ceremony held at MxCC in honor of this agreement.</p> <p>At the time of this writing, the Transfer Articulation Policy MIS pathway is being discussed with members of community colleges and four-year institutions within the CSU system. The intent is to have a pathway that will facilitate the seamless transfer of students from Middlesex Community College to any of the State Universities that offer this program. Additionally, there are course-by-course articulations that have been established with Central Connecticut State University, Eastern Connecticut State University and other schools within the system.</p>
<p>7. Does your program have courses taught at local high schools with qualified instructors (CCP) and/or have an early college experience course?</p>	<p>The Management Information Systems program does not currently offer courses in the Early College Academy, nor does it have a pathway.</p>

D. STUDENT ADVISING

<p>1. What strategies does your program utilize to ensure students receive appropriate information and advising on your program?</p>	<p>To increase the number of students that participate in advising sessions, the Program Coordinator developed and employs an online advising sign-up technique which has proven to be very effective. She consistently meets with advisees in face-to-face meetings held on both Meriden and Middletown campuses.</p> <p>Each advisee's graduation checklist is created in electronic format and maintained in a specific file by the Program Coordinator. At each advising session, the electronic checklist is reviewed and updated in partnership with the student. The student is informed of the number of courses remaining and when they will be offered. This allows the student to properly plan future classes and develop a clear path to graduation.</p>
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	<p>The Program Coordinator always inquires about the students' plan to transfer or pursue work so that appropriate guidance can be offered. The advising sessions seek to meet the students at their point of need and are highly relational. Students are made to feel safe in sharing their issues and challenges so that an open and honest discussion can be tailored to the hurdles that they may need to overcome.</p>
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E. PROGRAM INSTRUCTION

<p>1. List all full and part- time faculty members who teach in the program: name, degree, experience.</p>	<p>NAME</p>	<p>DEGREE/CERTIFICATE</p>	<p>EXPERIENCE/SPECIALTY</p>
	<p>Ivan Bailey</p>	<p>BS Industrial Technology <i>Certificates: MCSE, MCP, ADEN, CompTIA A +, CompTIA Network +</i></p>	<p>IT Director <i>Server Administration</i></p>
	<p>Annjanette Bennar</p>	<p>MS Education MOS, Certificate: IC³</p>	<p>Computer Applications</p>
	<p>Bob D'Eon</p>	<p>MS Computer Science, CCIE</p>	<p>Network Supervisor <i>Voice & Data Networking</i></p>
	<p>George Dialectakis</p>	<p>MS in Computer Engineering Certificate: CISSP; CPM</p>	<p>IT Consultant <i>Cyber Security</i></p>
	<p>Janet D'Onfrio</p>	<p>MS Software Engineering Licensed teacher state of CT</p>	<p>Part-Time Lecturer <i>Information Systems Computer Applications</i></p>
	<p>Landi Hou</p>	<p>MS Computer Science</p>	<p>Computer Tutor <i>Computer Applications and Programming</i></p>
	<p>Donna Hylton</p>	<p>MS MIS, CCNA MA Professional Counseling</p>	<p>Program Coordinator <i>Management Information Systems</i></p>
	<p>Gregory Izzo</p>	<p>MS Artificial Intelligence</p>	<p>Senior Developer <i>Game Programming</i></p>

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	Ellen Kramer	MBA –University of Hartford Certificate: Business Computer Programming	Part-Time Lecturer <i>Management Information Systems</i>
	Dr. Lin Lin	PhD Electrical Engineering	Division Director <i>Computer Engineering and Programming</i>
	Robert O’Connor	MS Electrical Engineering	Part-Time Lecturer <i>Engineering</i>
	Louis Sapia	MS MIS	Professor/IT Consultant <i>Database & Programming</i>
	Kate Toskin	MS MIS; MBA	<i>Database & Programming</i>
	RoseAnn Vaughan	BS MIS Certificate: MOS Excel, Access, PPT, MTA	IST Director Computer Applications
	Michael Weaver	MBA in Computer Information Systems	Senior Engineer Database & Administration
	Gwen Whitham	MS IS – Drexel University	Part-Time Lecturer <i>Database Architecture & Information Security ; MIS, Infrastructure Systems</i>
	Gerry Pollak	MS Geography Certificate: computer programming	Part-Time Lecture <i>Computer Applications</i>
2. List courses offered hybrid or fully online. Describe and evaluate how online/hybrid modalities support the program.	<p>Hybrid: None</p> <p>Fully Online: CSA135 – Spreadsheet Applications CSA140 – Database Applications CSC205 – Visual Basic CST201 – Introduction to MIS</p>		

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	<p>The online offerings provide students with the opportunity to create a schedule to support the balance between school and other demands, such as work and family.</p>
<p>3. What methods are used to ensure all faculty (full and part-time) who teach the same course are using the same outcomes and requirements? What action steps do you recommend for improving this?</p>	<p>The Program Coordinator organizes meetings for faculty teaching the same course. The instructors are given an opportunity to engage in a discussion about the appropriate textbook and supplemental resources, and their input is taken into consideration in the selection process. Periodic meetings with the faculty are scheduled to discuss course-related matters. Classroom and online evaluations conducted by the Program Coordinator assesses how well the faculty are meeting course outcomes. Areas for improvement are conveyed to faculty through the evaluation process.</p> <p>The Program Coordinator shares a common course outline, and syllabus with the faculty to ensure consistency across sections. With this template as a starting point, instructors operate from a common base and apply their own creativity with respect to the delivery and assessment of the content. When online companion resources are adopted to enhance the students' learning experience, all faculty are required to utilize the platform to give students in the same course similar experiences. Faculty are also required to use the Blackboard LMS in all courses. Faculty members have the freedom to construct lessons to support the learning objectives of each course.</p>
<p>4. Is support for faculty professional development adequate for the program? Please describe and evaluate.</p>	<p>Full and part-time faculty may request professional development funds consistent with the 4Cs union contract. The funds offered in support of faculty professional development is adequate for the program.</p>
<p>5. What new courses have been developed for the program in the past 3 years?</p>	<p>The newest course that was developed for this degree is called Contemporary Business Application Development I. When the Computer Information Technology (CIT) degree program was reviewed in 2016, it was noted that the degree should no longer teach Visual Basic, but that course should be replaced by C#. The VB course (CSC205) is a part of both degree programs and it makes sense to replace VB with the more popular C# course in the MIS program as well. The TAP pathway work expected to begin and will be done in conjunction with colleagues in the system. It is expected that there will be some realignment of courses, and possibly additional new courses for the MIS degree.</p>

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	<p>Prof. Louis Sapia, a colleague in the CIT/MIS program, has recently developed a special topics course in business intelligence and analytics that will focus on teaching data visualization skills using the Tableau software. This is being explored as a potential course for the MIS/CIT programs. It will be offered for the first time in the summer 2017 semester.</p>
<p>6. What curricular modifications need to be addressed in the next three years?</p>	<p>The development of a TAP pathway that will lead to the four-year schools will create a degree in which curriculum is aligned. The Program Coordinator is considering whether a separate career degree should be maintained for the MIS students who wish to directly enter the job market. This degree would need to focus on job skills, such as database, that may not be necessarily transferrable, but will certainly equip them for work.</p> <p>Recently, the college developed an accelerated degree program that can be completed in 13 months called MAP (Middlesex Accelerated Program). This new degree format will offer mostly online courses in modules that are 5 to 7 weeks long. The candidates for this program will be students who place into college-level English and Math courses, submit an essay of interest, and are screened in an interview process. Only the most committed and motivated students will be selected and they will be offered the wraparound support that is needed to help ensure their success. MIS is a degree that attracts working professionals who are seeking the credentials necessary for career advancement or degree transfer. In many cases these students have practical work experience, but have not taken the time to complete degrees. By offering the MIS degree in a MAP format, students will be able to take the fast track to the Associate’s degree and this may significantly boost the overall enrollment and graduation rates in the degree. Another consideration is that some courses that do not fit in the online framework can be offered on weekends. Students may be more inclined to sign up for classes that they can complete over a period of five Saturdays rather than having to come in for 15 night classes after a long day at work. We also hope to attract a population of home school students who are already accustomed to an accelerated curriculum.</p> <p>MAP is being piloted in the summer of 2017 and the Program Coordinator has discussed the addition of Management Information System to MAP for the next cohort in 2018. She will work with MAP Advisory Council to develop the structure of the program.</p>

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F. LEARNING OUTCOMES

<p>1. What do student surveys reveal about how students perceive this program (a student survey tool will be provided and should be administered in program classes specific to program outcomes)</p>	<p>Two surveys were conducted: one for students currently in the MIS program, and the other for student graduates. Excerpts from the surveys are listed below.</p> <p>Graduates of the program were most satisfied with the following:</p> <ul style="list-style-type: none">• <i>“The actual MIS course, programing both in Java and Logic, Visual Basic Database”</i>• <i>“The internship program, and the managerial communications classes were some of the best classes I’ve been a part of, teaching with realistic environments.”</i>• <i>“With developing solutions to ease tasks with the help of IS and other technologic devices; information is key to good decisions.”</i> <p>Graduates of the program were least satisfied with the following:</p> <ul style="list-style-type: none">• <i>“The online course, programing be it java or others should be taught in class, complex classes like these need face to face interactions.”</i>• <i>“The programming classes I feel should be updated to be geared toward emerging technologies. When I attended, we used Java to learn basic programming concepts, when maybe doing something with C# or C++, which may provide a better pathway to more dynamic programming languages.”</i>• <i>“CCSU requires macro AND micro economics, MxCC only requires one, and so it is for finance and marketing classes. Have the basic classes align a bit more with CCSU. Still an awesome experience and learned a lot of stuff in MxCC.”</i>
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	<p>Graduates of the program were asked why they chose the MIS program at MxCC.</p> <ul style="list-style-type: none"> • <i>“Because of my interest in technology and business.”</i> • <i>“I chose MIS because it fit my personality, and what I enjoy doing. I am a social person, and enjoy doing more than just having a desk job programming 24/7. Also, I enjoy using technology to solve people's needs or problems, so MIS was a good fit for me overall.”</i> • <i>“Because it helped me understand how I could manage IS to help achieve tasks better and more efficiently.”</i> <p>Graduates were generally satisfied with the degree program. The comments shared about their experience was positive. (See details of the survey are attached.v)</p> <p>Current students of the MIS program are most satisfied with:</p> <ul style="list-style-type: none"> • <i>“Well Rounded Program”</i> • <i>“Overall different aspects of it”</i> <p>Current students of the MIS program are least satisfied with:</p> <ul style="list-style-type: none"> • <i>“Internship Placement”</i> • <i>“A bunch of the computer and science courses”</i> <p>The survey data shows that students in the MIS program are generally satisfied with the overall quality of the degree. There were a few questions in which the respondents indicated dissatisfaction; the detail results are included in the attached survey. There is some concern among working students about completing the internship course. Notwithstanding, comments expressed a generally favorable opinion of the program. (See attached survey results.vi)</p>
<p>2. How do you assess student learning outcomes in individual courses and in the program as a whole?</p>	<p>Student learning within the program is assessed using a number of instruments: exams, quizzes, group projects, oral presentations, hands-on labs, virtual labs, research papers, and service-learning projects. Each course is designed to utilized assessment that the</p>

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	<p>appropriate for the pedagogical emphasis of the course. Our college has established General Education TAP Competency Review Teams which are tasked with reviewing courses to ensure that they meet the desired learning outcomes. Out of the process will come standards by which courses are consistently assessed.</p>
<p>3. Are your student’s achievements shared more broadly in public by presentations, research, conferences, papers or civic engagement?</p>	<p>The Technology Center is a civic-engagement/service-learning center which employs student workers in the roles of technicians, consultants, and coordinators. This student center is probably the most public display of the achievements of our students on campus. To be able to establish and fully operate a computer support center is quite a testimony of our students’ skills and abilities. Students apply their technical expertise to serve fellows students, faculty, and staff, and the classroom instruction finds practical expression in the day-to-day tasks of the Technology Center. Students have actually turned their knowledge into income and experience as they serve as student workers and volunteers.</p> <p>Students have also presented their work as a part of the college’s Convivium. In the spring 2016 semester students from the CST201 Introduction to MIS course showcased their class project. The students in the class assumed the role of consultants and worked with an actual customer (the Technology Center Coordinator) to determine a viable solution to keep track of the repairs and technician assignments. The students researched and implemented a customized version of the cloud-based Freshdesk helpdesk system to replace the previous paper-based system. Their work was not only presented publicly at the Convivium, but it also continues to be the software that enhances the efficiency of the workflow process within the Technology Center today.</p> <p>At the recent Tech Fest technology fair, students led workshops to show our high school guests their technical skills. Workshops on computer hardware, computer programming, and electronics were developed and conducted by our students. Approximately 100 students from area technical high schools attended these presentations. The computers that were built by our students at the Tech Fest hardware workshop were later installed in the Technology Center for student use.</p> <p>Another public display of students’ achievement is the Transcript Evaluation System that is currently being used in the Registrar’s Office. As a service learning project, students of the</p>

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	<p>CST201 Introduction to MIS course were challenged to find a way to improve the process of evaluating students' transcript. They were presented with the real-world problem and assigned to teams to analyze and determine a solution. Students' presented their technological solutions to the Assistant Registrar and their recommended solution was subsequently purchased and implemented by the college. The software solution to an actual business problem was found by students as a part of their classroom experience. Students learned firsthand how technology can be applied to solve business problems. Similarly, a student developed a database for tracking the utilization of the Academic Success Center.</p> <p>Students refurbished computers for a community program called the Ryan Woods Autism Foundation and their work was also featured on Channel 3 WFSB News and in the Middletown Press online. It was great to showcase the <i>'heart work'</i> of our college and our students to our state.</p>
<p>4. Share a story of a student achievement.</p>	<p>Michael Cirillo came to MxCC in 2004 as an undecided major. Initially, he took a few classes in utility construction and then left in 2005 for about 5 years. After a time away he returned in 2010. At an academic advising session with the Program Coordinator, Michael reviewed a number of options and then decided that we wanted to earn his degree in MIS. The blend of business and technology was very appealing to Michael and it just seemed to be a good fit.</p> <p>Once he made up his mind that he wanted to pursue MIS, Mike locked in on his target and never wavered. He was a good student and he quickly learned the skills necessary to succeed in this field. From his first MIS course to his final internship assignment, Michael grew more confident as a technician and as a professional.</p> <p>He became an active member of the Computer Club and served as our Vice President. He was fully involved in campus life and helped to recruit many new members to the Club. At the end of his academic program, Michael was placed in an internship at Liberty Bank where he was challenged to learn Sharepoint. Not only did he rise to the occasion by learning this new software, he so impressed his supervisor that they wanted to hire him at the end of the internship term. Michael declined the offer to work for Liberty Bank, instead he returned to his native Spain to rejoin his family.</p>

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	<p>Michael’s newly acquired knowledge of Sharepoint earned him a coveted position as a Sharepoint Technician at Microsoft Corporation in Spain. From an undecided student to an employee of Microsoft represents an incredible journey and a notable achievement. Michael graduated from MxCC with an MIS degree in 2014 and was awarded the MIS award for his outstanding academic accomplishments. The MIS degree gave Michael the skills and confidence to launch is career as an information systems professional.</p> <p>Pablo Soto was able to use his internship to gain a full-time position as an Information Systems Support Coordinator at IQ Telcom, an IT firm.</p> <p>Other students have experienced similar career success. Cheryl Young leveraged her MIS degree, and particularly, her database skills to launch her career as a Database Report Writer at the Connecticut Education Association. Amanda Clark also used her MIS degree to secure a position at Hewlett Packard as a Business Analyst. Many of our students are enrolled in or have completed bachelor’s degree programs.</p>
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G. COMPLIANCE WITH POLICY TO NORMALIZE CREDIT HOURS

<p>1. If your program exceeds 60-61 credits, what strategies do you plan to bring the program into compliance?</p>	<p>The credit count for the MIS degree can range from 60-63 credits depending on the electives that are selected. The basic degree is currently 62 credits, but students may opt for 4-credit courses in math, science, and computer electives. With the recent changes to math and accounting courses, the credit count is expected to decrease. With the help of their advisor, students can stay within the 60-61 credit limit. (See attached graduation checklist.^{vii})</p>
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H. BUDGET

<p>1. Is the budget adequate to support the program? Please describe and evaluate.</p>	<p>While there is not a specific budget designated for the MIS program, the needs of the degree have been met by a number of grants written by the Program Coordinator. The external funds and donations have been fully utilized to acquire equipment and software used in the Technology Center and classrooms. Upon request additional funds can be allocated from the general STEM school budget for program needs.</p>
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<p>2. Identify program resources (space, equipment, funds for development) that have enhanced your program</p>	<p>The Technology Center space in Snow Hall room 512 has enhanced the program significantly. The purchases of new, state-of-the-art equipment and software was funded by a Perkins Grant and thus it has allowed us to offer a creative space for student engagement and learning. (See the Technology Center reports attached.^{viiiix})</p> <p>Faculty utilizes the agreement that the college has with Microsoft’s Imagine (formerly Dream Spark) to acquire free software for classroom and Tech Center use. This partnership has made it possible to install products such as SQL Server, Visual Studio, Windows 10, on the computers in the Technology Center and classrooms. Students may also get accounts to Imagine so that they can access software to support their exploration and learning outside of the classroom.</p> <p>The addition of the engineering classroom in Snow Hall room 510 has provided a home for hands-on classes like CST120 Introduction to Operating Systems and CST141 Computer Hardware. In both these classes, students work on computers that are then stored in ample storage units. Space like this was not always available to support these courses in our curriculum; the new working spaces has been a welcome addition.</p> <p>The Technology Center has also acquired, through grant funds, a subscription to Lynda.com, that currently provides the only kiosk on campus where students can engage in video training on a wide range of technical courses. Technology Center technicians are encouraged to use Lynda.com to enhance their technical skills. Computer faculty have also received Lynda.com accounts. Recently, an MIS student used Lynda.com to learn Sharepoint, a software used at his internship at Liberty Bank.</p>
<p>3. What additional resources are needed to support the future of the program?</p>	<p>Although we have upgraded the equipment in the Technology Center, the working lab computers in the classroom need to be updated to support the latest software.</p>

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<p>4. What efforts have you made to seek external partnerships for resource development? (grants, shared services, volunteer)</p>	<p>The Program Coordinator has written and received a number of grants to fund program initiatives. They are listed below:</p> <ul style="list-style-type: none">• Career Café – Funded by Perkins• HIM/IS Publicity – Funded by Perkins• Technology Center Equipment, Supplies, and Advertising – Perkins• Tech Fest – Perkins• Tech Fest and Visiting Professor – CCP Perkins <p>The Program Coordinator has also partnered with companies and solicited donations of equipment for the computer programs and club. The donors are listed below:</p> <ul style="list-style-type: none">• Eversource: Laptop and desktop computers for the classroom and Technology Center• Computer Sciences Corporation: Laptop computers for the classrooms• Liberty Bank: Desktop computers for the club and community• Xavier High School: Laptop charging station for the classroom <p>We have also been the recipient of the generosity of the Peach Pit Foundation; they have helped to fund the computer giveaway sponsored by the Computer Club for needy students.</p>
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I. LEARNING COMMONS AND STUDENT SERVICES

<p>1. Describe your program's involvement with the Learning Commons Services (Library, Ed Tech, Academic Success)</p>	<p>The Program Coordinator implemented the first computer tutoring service in Meriden. She served as a computer tutor and successfully recruited and placed student tutors in Academic Success Center in Meriden as well. The Computer Club has hosted clinics in conjunction with the Academic Success Center in Meriden and on the main campus. Students served as volunteers. Working with the staff in the library, the Program Coordinator has supplied textbooks for the reference section for student use.</p>
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	<p>The Program Coordinator worked with the Director of the Academic Success Center to acquire and vet the Accuplacer Computer Skills Test for college-wide use.</p>
<p>2. Describe your program’s involvement with the Student Services (Administration, Advising, counseling, disability)</p>	<p>Through the arm of the Computer Club and it many activities, the MIS program engages students and works closely with the Student Activities Office. The Computer Club has infused the campus with signature events such as:</p> <ul style="list-style-type: none"> • E-cycling – safely disposing of e-waste • LAN Night – computer gaming • Computer giveaway – for students in need • Network Event – for connections with professionals <p>All of these events involve and engage students and are in keeping with the mission of the Student Services area.</p> <p>Additionally, the Program Coordinator advises new and continuing students during the course of the semester and while off-contract during the winter and summer sessions. The MIS program is consistently represented at initiatives sponsored by the Student Services Administration, such as <i>What To Do With A Major In...</i> fair, Career Panel Discussion, and others. The program has offered courses in support of students in both Middletown and Meriden campuses.</p>

J. STRENGTHS/CHALLENGES

<p>1. Note three strengths of the program.</p>	<p>The strengths of the program are as follows:</p> <ol style="list-style-type: none"> 1. The Introduction to MIS course exposes students to the discipline and offers an opportunity to experience a group project in which they have to solve a real problem. The gateway course offers a glimpse at the major for prospective students. 2. There are opportunities for students to engage in technology and hone their skills by working on service-learning projects such as Technology Center technician, MIS projects, and clinics.
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	<ol style="list-style-type: none"> 3. The curriculum offers an internship in which students can experience the IT workplace.
<ol style="list-style-type: none"> 2. Identify challenges the program faces. 	<ol style="list-style-type: none"> 1. Finding suitable internship opportunities for students who have a desire to program is difficult. Most employers require 4-year degrees. 2. Enrollment in the program is low and needs to be increased. 3. The degree does not attract women and minorities. 4. The degree name is not one that students recognize and identify with; it reflects an older nomenclature.
<ol style="list-style-type: none"> 3. Short-term (0-1year) recommendations 	<ol style="list-style-type: none"> 1. Collaborate with community college and four-year schools in formulating the TAP Pathway for MIS. 2. Determine the viability of a TAP vs. Career versions of the degree. 3. Rebrand the degree so that it is more attractive to students of all ages. 4. Expand internship partnerships overall. 5. Implement the accelerated MAP version of the MIS degree.
<ol style="list-style-type: none"> 6. Long-term (1-5 year) recommendations 	<ol style="list-style-type: none"> 1. Improve the recruitment and retention of women and minorities in the MIS program. 2. Grow the overall enrollment in the MIS degree by using MAP to attract highly-motivated students. 3. Establish articulation agreements for our MIS degree to other public and private 4-year colleges. 4. Investigate the need to offer focused training in Business Intelligence and potential partnership with Cigna and other companies to create a pipeline to the workplace. 5. Continue to support and expand the Technology Center initiative.

K. SITE VISIT RESULTS (HALF DAY EXTERNAL PEER REVIEW)

<ol style="list-style-type: none"> 1. Review of the External Peer review site visit including agenda and meeting notes 	<p>See attached meeting notes.^x</p>
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<p>2. Recommendations from the site visit group</p>	<p>The Peer Team Recommendations are summarized below:</p> <ol style="list-style-type: none">1. Rebrand the MIS degree to make it more appealing to the general population. The term Management Information Systems (MIS) does not have good name recognition and needs to be updated.2. Consider making the degree career-focused to offer students more marketable technical skills instead of the limited courses in programming.3. As you consider a MAP option for the degree:<ol style="list-style-type: none">a. Take a look at Charter Oak’s program to see how courses will align and what they are offering during the first two years.b. Explore the weekend option for technical classes.c. Offer the internship class over the summer.4. A course in social engineering would be beneficial and may serve other programs. It could be uses as a social phenomenon elective instead of sociology.5. SharePoint is very popular, but does not require an entire course. Consider including a module on SharePoint in the Introduction to MIS course.6. Include a database course in the MIS curriculum – data is a big part of the business/technology landscape and may prove more useful than programming.7. Consider eliminating the second semester of accounting to free up space in the degree for technology.8. Psychology should also be considered as a social phenomenon course.9. Excel would be a useful addition because of how widely it is used in business.10. Give students exposure to other platforms, not just Microsoft.11. Take a closer look at the Technical Writing course; it may not be useful and could be substituted for another course.12. Consider project management; especially if it can be used by other majors, such as business. Otherwise, enrollment may prove to be challenging.13. Consider using the Sign-Up Genius online sign up for scheduling advising appointments.14. Include a second semester of economics to meet the admission requirements at CCSU. Look at other courses that are required for the School of Business to make sure that they too are included.
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**MxCC Program/Discipline Self Study
2017**

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L. MxCC ACADEMIC REVIEW TEAM RECOMMENDATIONS

1. Recommendations from the Academic Review Team	
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**MxCC Program/Discipline Self Study
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Attachments

- i MIS Program brochure
- ii Technology Center Report Fall 2015
- iii Technology Center brochure
- iv Advisory Board Meeting Minutes – April 2014 and April 2016
- v Survey results – MIS graduates
- vi Survey results – MIS current students
- vii MIS Graduation Checklist
- viii Technology Center Report Spring 2016 and Fall 2016
- ix Technology Center Report Fall 2016
- x Peer Review Meeting Notes