

ACADEMIC PROGRAM REVIEW
2017
FOR
Computer Information Systems – BS
&
Computer Information Systems - AAS
&
Computer Information Systems – Minor

CIS Program Review Panel:

Chair: Clyde Hardman, Associate Professor

Administrative Representative: Dr. Larry Bajor

Program Coordinator: Clyde Hardman / Jimmie L. Joseph

Program Faculty: Professor Richard Hewer, Dr. Andrew Suhy, Dr. Amy Buse, Dr. Jimmie L. Joseph, Dr. Felix Bollou, & Dr. Hira Herrington, Dr. Njenga Kinuthia

Individual with Special Interest in the Program: Maggie Brown

Faculty Member from Outside of College: Shaw Walker

Subject: Computer Information Systems Academic Program Review

Date: August 2017

The Computer Information Systems Academic Program Review Panel respectfully submits the following documents to the Academic Program Review Council for evaluation.

The Computer Information Systems Program review and analysis contained in this document is organized according to the following outline:

TOC

Table Of Contents

Section 1	Program Overview <ul style="list-style-type: none">A. Program Name and HistoryB. Program MissionC. Program GoalsD. CurriculumE. Assessment of Student LearningF. Program ProfileG. Program Value beyond Productivity and Enrollment NumbersH. Program Flexibility and AccessI. Visibility and Distinctiveness
Section 2	Program Evaluation <ul style="list-style-type: none">A. DemandB. Student AchievementC. Employability of GraduatesD. Faculty Composition and EngagementE. Program Administration and SupportF. Support ServicesG. Facility and Equipment
Section 3	Perceptions of Overall Quality
Section 4	Implementation of Findings
Section 5	Appendices
	Signature Page

Section 1

Program Overview

1A. PROGRAM NAME and HISTORY

[Return TOC](#)

- **Program Name** - Bachelor of Science in Computer Information Systems; Associate in Applied Science in Computer Information Systems; Minor in Computer Information Systems
- **Program Description** - The Computer Information Systems (CIS) curriculum provides students with a broad understanding of core business functions, competency in computer programming, knowledge of information technology infrastructure, and a sound foundation in mobile platform and web-based systems analysis and design. Furthermore, this curriculum provides the necessary related business skills for immediate employment in Information Systems and for advancement to management positions.
- **Program History** - The CIS program (The Program) was established in the late 1960's. The Program has been through many changes during its existence as a program at Ferris State University. The Program focused on the IBM mainframe platform throughout the 60's, 70's, & 80's. In the mid-1980s, Personal Computers (PCs) became an integral part of the business world. The faculty of the CIS program (Program Faculty) expanded The Program platform options for student programming to include microcomputers. In the 1990s and 2000s The Program adopted more web development curriculum and object oriented programming. In the 2010s, The Program is adapting to the mobile development environment. Information Systems (IS) is an ever evolving field of study. Program Faculty are constantly evaluating how technological changes in the business world impacts the skills needed by graduates of The Program. Program Faculty and the College of Business (COB) maintain relationships with industry leaders, alumni of the program, and professional organizations. These relationships, combined with Program Faculty research and program assessment form the impetus that allows Program Faculty to continually discuss and implement enhancements to The Program. As an example, Program Faculty just completed a major enhancement to all required CIS courses for the BS, AAS and minor. In addition to revamping all required courses in The Program two brand new required courses (Mobile Development & Enterprise Integration and Business Process Design) were developed, designed and added for students entering The Program in the Fall 2017 semester.

1B. PROGRAM MISSION

[Return TOC](#)

- **Ferris State University mission statement** – Ferris State University prepares students for successful careers, responsible citizenship, and lifelong learning. Through its many partnerships and its career-oriented, broad-based education, Ferris serves our rapidly changing global economy and society.
- **College of Business Mission Statement – Mission (What we commit to)**
We in the College of Business are committed to academic excellence, ethical conduct, and a learner centered environment characterized by quality teaching, outcomes assessment, and continuous improvement. Our students can take pride in their developed competencies and the distinctiveness of the College's programs. We shall be noted for being responsive to changes in workforce needs; building/maintaining good relationships with employers and community; preparing our students to excel in a global environment; and providing high-quality interns and graduates who meet and exceed employer expectations, deal effectively with change, and are committed to lifelong learning.
- **Accounting, Finance & Information Department Mission Statement** – The AFIS Department has no mission statement.
- **Computer Information System Program Mission Statement** – The mission of the Computer Information program is to provide an outstanding, flexible, supportive learning environment for students preparing for careers in information technology services.
- **Incorporating the Computer Information System Mission** –

- **How is the program mission statement aligned with the mission of the department, college, and university?**

The Computer Information System program's mission statement is in line with Ferris' mission that states to "prepare students for successful careers, responsible citizenship, and lifelong learning." The College of Business mission statement also echoes the university's mission statement in its mission and vision of providing career oriented programs and commitment to lifelong learning. Indeed, IS careers are among the fastest growing job segments in the United State, North America, and worldwide (See Appendix D).

Computer Information System is a career-oriented degree, providing specific skills in a field of business that every business, government, organization, economy and society needs. The Program graduates obtain employment in government, nonprofit and for-profit corporations, health care, heavy industry, and financial services institutions. Some graduates of The Program become entrepreneurs setting up their own businesses. Computer Information system graduates obtain well-paid jobs with life-long career opportunities for improvement as evidence by our graduate survey. (See Appendix F).

- **How is the program's mission incorporated into decisions impacting the program (including curricular changes)?**

To achieve our mission and purpose, the Computer Information System program has developed specific, actionable, program goals and outcomes. Student assessments are done in a variety of ways to evaluate student success in achieving these goals and outcomes. The assessments are documented for each course in TracDat. TracDat data is regularly reviewed to determine if further action is needed. If needed, curricular changes are discussed at weekly faculty program meetings. (See Appendix D)

- **How is the mission of the program communicated to program stakeholders?**

The mission of the program is indicated on the FSU web site under the College of Business degree programs. Prospective students are able to view The Program mission, course offerings, the Association of Information Technology Professionals (AITP) Registered Student Organization (RSO) affiliation and graduation requirements. Program Faculty and staff communicate the mission in their contacts with prospective students and current students. Annually, The Program holds a CIS Advisory Board meeting with company representatives, alumni, AITP RSO officers, The Faculty and COB administrators to discuss future needs of The Program.

- **What policies or procedures are in place to monitor the program's mission and its relationship to the department, college, or university?**

After each semester, the program faculty meet to review the program/courses outcomes and the results of the assessments. Every fall, the Computer Information Systems Program Advisory Board meets and reviews the program providing feedback and suggestions for improvements. Please see the Computer Information Systems Advisory Board meeting minutes in [Appendix H](#).

- **How does the program further the department, college, and university missions?**

Computer Information Systems is a core business function and an integral part of a modern complete and well-rounded business program offerings. CIS is a career-oriented degree that graduates can build upon and advance to higher career levels in any organization. CIS fits within the Ferris State University mission of providing "career-oriented, broad-based education, serving (paraphrased) our rapidly changing global economy and society".

Graduates of the CIS program obtain well-paying jobs. Some students pursue graduate study before entering the workforce. Graduates of our program have obtained employment locally, regionally, nationally and internationally.

The Program has also further the department, college and university missions by getting the name of Ferris State University and the quality of our education mentioned on a national basis. The CIS Program of the AFIS Department in the College of Business of Ferris State University is rated as the #8 CIS program in the United States.

1C. PROGRAM GOALS

[Return TOC](#)

Describe what the program hopes to accomplish –

▪ **Program Goals -**

The mission of the CIS department at Ferris State University is to provide a world class program for students preparing for careers in information systems. The goals of the program are to provide students a solid foundation in CIS by facilitating their development in the following areas:

- Analytical and critical thinking skills (Organizational problem solving; ethics and professionalism; creativity);
- Business fundamentals (Business models; functional business areas; evaluation of business performance);
- Interpersonal, communication and team skills (Interpersonal relationships; team work; leadership; communication);
- Technology (Application development; internet systems architecture and development; database design and administration; systems infrastructure and integration);
- Information systems and technology-enabled business development (Systems analysis and design; business process design; systems implementation; information system project management).

- **How do the described goals apply to preparing students for professional careers, responsible citizenship, lifelong learning, and meeting employer needs or the needs of other stakeholders?**

The goals described above apply according to the following matrix:

	Professional Careers	Responsible Citizenship	Lifelong Learning	Employer Needs
Analytical and Critical Thinking Skills	X	X	X	X
Business Fundamentals	X			X
Interpersonal, Communication and Team Skills	X	X		X
Information Systems and Technology	X			X

To ensure these goals are met by the CIS curriculum, the faculty undertake the following:

The CIS curriculum was aligned to the nationally recognized IS 2002 & IS 2010 model curriculum that was designed by the Association for Computing Machinery (ACM), Association of Information Technology Professionals (AITP) and Association for Information System (AIS), professional societies. IS 2002 & IS 2010 are based on an IT market skills survey of thousands of jobs across the country. The Ferris CIS program adoption of these models include input from the CIS Advisory Board on skills needed in the Michigan and regional workplace.

Courses in the CIS curriculum provide learners within the program with the ability to summarize the history of the tools being used in various courses. Discussions build on student comprehension of the development of programming and analysis tools and methodologies. Students are guided to discover probable future directions for the development of tools introduced in The Program courses.

Due to the rapid evolution of tools and methodologies within the CIS discipline, it is critical that life-long learning be a part of the career plan of any CIS student in The Program. It is normative that subsequent courses will discuss changes that programming languages and tools underwent between semesters. Students are encouraged to predict the skills that will need to be upgraded after graduation, and design strategies to gain those skill.

- **Incorporating Program goals**
 - **How are the program's goals communicated to students, faculty, and other stakeholders?**

- **Students** – Receive program check sheets with program goals/outcome layouts. Academic and career advising is required each semester before students are able to register for classes. Additionally, students are encouraged to become engaged in the AITP RSO, which helps student understand program goals. Finally, in the senior year, students take two courses (ISYS 431 & ISYS 489) that require all students to demonstrate the ability to work in team environments. During ISYS 431 and ISYS 489 students also work with a real client (nonprofit organization in the community) to complete an actual project from beginning to end.
- **Faculty** – All faculty work with defined course goals/outcomes for each class. Course goals are defined by the full Program Faculty to ensure that courses provide the framework for students to build and demonstrate the skills as set forth in the Program goals. Program goals/outcomes are discussed regularly at weekly program meetings to ensure that the Program and course goals are in keeping with the needs expressed by the future employers of The Program graduates.
- To further facilitate the communication of the Program's goals to faculty, Program Faculty rotate course assignments so that faculty have an opportunity to teach upper and lower division courses. Due to The Program's small faculty population, Program Faculty also teach courses across CIS spectrum (programming, analysis and design, database, etc.). This lateral and horizontal instructional mix means that all Program Faculty are aware of the skills needed by students in upper level courses. This understanding of the skills delivered and needed across the curriculum permits impromptu discussions of course/program changes during our regular Program Faculty meetings, without needed to call special meetings held after Program Faculty has had an opportunity to study the course offering.

- **Other stakeholders** – The Program’s Advisory Board consists of employers, alumni and Program Faculty meeting annually to review program goals/outcomes. The advisory board meeting provides an opportunity to hear from industry practitioners what skills are desired in the CIS graduates being considered for employment. The Advisory board meeting also provides an opportunity to inform our alumni and industry practitioners of The Program’s goals. Program Faculty attend the AITP National Convention annually where the faculty meet with other University faculty and company representatives to discuss what program goals need to be set for our graduates. Program Faculty also attend the twice yearly National BILT (Business and Industry Leadership Team) hosted by Collin College and funded by an NSF grant.
- **How and when are the program’s goals reviewed and re-evaluated.** Program goals/outcomes are reviewed at regular weekly or bi-weekly program meetings with the Program Faculty and at our annual advisory board meetings. The Program’s goals are also discussed at AFIS Department meetings when discussing potential changes to The Program.

Additional review and re-evaluation of The Program’s goals are achieved via the following methods:

- The CIS program meets with the CIS Advisory Board annually to determine the skills that are needed for a successful career upon graduation.
- The CIS faculty belong to national and international organizations, AITP, ACM, IEEE, whose publications help keep them on current with technology advances and industry trends. This process is continuous.
- The CIS program goals and curriculum are updated on an annually to reflect current technology and the needs of employers.
- **How have the program’s goals changed in the last five year?** The basic goals have not changed, but upgrading of resources and technology are an ongoing occurrence. The Program has hired 4 new faculty in the past 5 years. The Program has significantly altered 4 courses (ISYS 110, ISYS 216, ISYS 288, ISYS 316) in that time. The Program has replaced 4 courses (ISYS 200 with ISYS 272, ISYS 371

with ISYS 372, ISYS 325 with ISYS 327, ISYS 470 with ISYS 482). The Program has added 2 new courses (ISYS 221, ISYS 431). ISYS 327 and ISYS 482 were created so that the appropriate courses could be replaced with updated content.

- **Strategic Plan**
 - **Short Term**
 - Provide our students with current and relevant skills for the market place. This plan will be measured by the success we have placing our graduates into degree related positions. The target date for evaluating the success of our plan is after each graduating class leaves FSU and enters the workplace or graduate school. To achieve this goal, all relevant faculty will participate in a weekly process of re-evaluation and change of our program goals and curriculum. (See Appendix C)
 - Continue to work with the CIS Program Advisory board to enhance and improve the program. Meeting every year with the Advisory Board will offer a chance to share Computer Information system course content with knowledgeable IS professionals to learn if any changes need to be considered with respect to the CIS Program. (See Appendix H).
 - Evaluate and revise individual course content based on assessment and student success.
 - Request replacement of retiring faculty with a goal of hiring new faculty with current industry experience in the latest technologies. The Program is currently seeking two replacements for the 2017-2018 academic year and expecting two additional retirements in 1-3 years.
- The Program seeks to expand the size of the Program Faculty to better support the off-campus offerings from The Program. The addition of 300 and 400 level courses requires that the Program Faculty provide those courses to the off-site locations.
- Develop business and industry relationships and pursue possible student internships.

- Work with program student organization (AITP) RSO encourage greater student involvement in IS activities and events.
- Develop a Human Computer Interaction course within the program to complement web and mobile development.

- **Long-term**

- To continue to rise in the national rankings by providing the best possible education and background. This plan will be measured by outside rating organizations. Our goal is to move up in the rankings from 8th nationally (by Accredited Schools Online) within the next three years. To achieve this goal, all relevant administration and faculty will participate in a process of continuous re-evaluation and change of our program goals and curriculum. (See Appendix B).
- Continue to offer students a major in Computer Information Systems.
- Continue to offer the CIS AAS for students not seeking a baccalaureate degree.
- Continue to offer a minor in CIS for students in other majors who want to enhance their CIS skills, but have non-IS career goals.
- Develop an ongoing internship relationship with businesses; develop internship opportunities in conjunction with the internship coordinator, and find ways to help students seek paid internship opportunities.
- Develop curriculum to offer courses in Health Information systems if resources become available.
- Develop and secure Computer Information System student scholarship funds to draw students to the program by providing scholarships through the assistance of the dean's office, emeriti, university advancement and others.

- Develop curriculum to offer additional SAP courses for various Business students and industry as resources become available. Multiple business which support Ferris State University, the College of Business, the AFIS Department and the CIS program use SAP. This collection of firms include companies that are represented on the CIS and/or COB Advisory boards, as well as firms that support the AITP RSO.

- **How is the program's strategic plan reviewed and re-evaluated.**

Data obtained from our advisory board, internship evaluations and recent graduate surveys are reviewed at weekly program meetings. The outcomes from those meetings are implemented and the results evaluated as part of an ongoing cycle of review, evaluation and modification to our program.

The strategic plan is reviewed annually within the faculty weekly program meetings and discussed at annual advisory board meetings. The annual findings of the Program Faculty and the recommendations of the CIS Advisory Board are discussed with the Department Chair and the Dean of the College of Business.

- **Goal Attainment**

- **Evaluate the program's success in achieving the stated program goals.**

- Students are required to do an internship to complete their degree. Their employees complete evaluations of students giving us valuable feedback on how our student are performing in work environment. (See Appendix---, Employer Evaluations of Interns) (citeJLJ)

To ensure that our students have real-world experience, all CIS BS and Acct/CIS BS majors are required to have an internship experience prior to graduation. The Program has had 100% success in ensuring that all graduates of The Program at the bachelor's level have an internship or equivalent experience.

Based upon feedback from stakeholders in The Program, the Program Faculty added and had approved for inclusion in The Program a course on SAP/ERP (ISYS 482). The education version of the software need to teach the course costs \$8,000 per year. Program Faculty pooled their PDI funds to cover \$6,000 of the cost of the first year of the software license.

- **How does the program plan to address both met goals (reflection) and goals not realized (action?)**

The Program Faculty continue to have weekly program meetings through the academic year to discuss and reflect on program goals. These meeting host discussions of goals met (reflection), why the met goals were achieved, goals not met (action) and how to achieve or modify the goals not met.

The Program Faculty plans to continue to meet with the CIS Advisory Board, alumni of The Program, employers of alumni of The Program and employers of interns of The Program, to seek clarity on which goals are being achieved and which goals are not being realized. Feedback from the above mentioned stakeholders will be shared with the AFIS Department and the Dean of the College of Business.

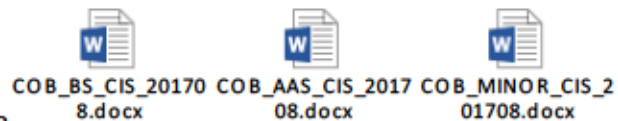
1D. Curriculum

[Return TOC](#)

- **Link to program check sheets**







Check sheets 2016-2017




New Check sheet 2017-2018

- **Link to syllabi for program courses (Also: Appendix A)**


- **ISYS 105**  ISYS105-003Hewer201701.pdf
- **ISYS 110**  ISYS110 Syllabus.docx
- **ISYS 200**  ISYS200 SYLLABUS-Fall 2016.docx

- 


ISYS216Syllabus201608.docx

 - ISYS 216
- 


ISYS221Syllabus2017.docx

 - ISYS 221
- 


ISYS288Syllabus201608.docx

 - ISYS 288
- 


ISYS305Hardman201701.pdf

 - ISYS 305
- 


ISYS316Syllabus2017.docx

 - ISYS 316
- 


ISYS325Joseph201608.pdf

 - ISYS 325
- 


ISYS371Bollou201608.pdf

 - ISYS 371
- 

ISYS 431 Fall 2016 Course Syllabus.doc

 - ISYS 431
- 

ISYS 489 Fall 2017 Course Syllabus.doc

 - ISYS 489
- ISYS 491 – Internship (No syllabus required)
- 

PROJ 320 Syllabus SU 16.doc

 - PROJ 320

New courses for Fall 2017

- ISYS 272
- ISYS 327
- ISYS 372
- ISYS 482

- **Evaluate program policies and procedures implemented to ensure quality, consistency, and currency related to content within each course within the program.**

Every semester, as part of the assessment process, the CIS faculty meet to review the results of program and course assessments. The Program Faculty evaluate the results and recommend changes that are appropriate. All syllabi, course content, course tools and course outcomes are reviewed, to ensure that The Program is on track with the changes in the IS field. This review ensures that The Program is up-to-date with current technology in the IS field. As part of the review process Program Faculty analyze the version of programming languages, methodologies and technology being used in all courses in the CIS BA, CIS AAS and CIS minor, to ensure currency with industry versions.

In academic year (AY) 2012-2013 the Program Faculty proposed a new course, ISYS 431. This course would be a second course in Systems Analysis and Design. The two goals of proposing this course was to (1) provide an opportunity for students to demonstrate the skills developed in ISYS 331, the first Systems Analysis and Design Course, and (2) to ensure that students from on-campus and off-campus had the same preparation for the CIS Capstone course. The course was approved in 2013, and placed as course requirement for students starting the CIS BS program in AY 2013-2014.

In the 2015-2016 academic year, The Program proposed a complete update of three courses: ISYS 272 was replaced with ISYS 371, ISYS 325 was replaced with ISYS 327, and ISYS 372 was replaced with ISYS 470. In the 2016-2017 academic year, The Program created a new course in Enterprise Resource Planning (ERP) systems, ISYS 482. The Program Faculty also adjusted several course prerequisites and updated course outcomes for all other program courses. This effects not only CIS majors, but dual majors in Acct/CIS, students in the Associate degree, and students pursuing the CIS minor.

In AY 2015-2016, the Program Faculty, with input from alumni and the CIS Advisory Board, determined that ISYS 110 was not providing students with the desired level of preparation for ISYS 216. The Program Faculty modified ISYS 110 to cover the Python programming language, and shift the emphasis of the course away from templating programs and web development.

In AY 2016-2017, the Program Faculty, with input from alumni and the CIS Advisory Board, added ISYS 221 to The Program curriculum. The Program Faculty also created new courses to replace courses to meet the needs expressed by our stakeholders. ISYS 200 was replaced with ISYS 272, ISYS 325 was replaced with ISYS 327, ISYS 371 was replaced with ISYS 372 and ISYS 470 was replaced with ISYS 482. These changes were approved by the College of Business and the Faculty Senate for implementation in AY 2017-2018.

The Program Faculty continuously monitor the changes in the workplace as evidenced by graduate surveys, newspaper reports on jobs, job outlook, and CIS advisory board input. One result of this monitoring was the need for ERP preparation for students in The Program. The SAP University license costs \$8,000 per year. Funds are currently tight due to University-wide enrollment declines. To help with the proof-of-concept that SAP was a good fit for Ferris State University, Program Faculty combined \$6,000 in Program Faculty individual Professional Development Funds (PDI) to help fund the first year of the SAP license.

The CIS area is a specialized field that deals with changing technology. Demand for CIS skills is growing and commands well-paying salaries. Program Faculty develop courses that are relevant and needed as the demand for specific skill mixes change. CIS is used in most organizations and business today, with mobile devices now being used more than ever. Program Faculty also get input from our colleagues in the AFIS Departments and the College of Business through program reviews and the curriculum development process.

Program Faculty monitor other university information system programs to ensure our program is competitive and current. Program Faculty also refer to our CIS advisory board members who are in business to let us know any new developments that our students should be aware of and additional skills that they need to acquire and expand.

Program Faculty attend professional meetings and conferences to learn about the latest theories and business practices. Program Faculty review our own qualifications and skill mixes, as well. Program Faculty attend training and pursue certifications to ensure that Program Faculty skill remain relevant to the needs of industry. In the last 5 years, 3 Program Faculty have become Certified SCRUM Masters. One Program Faculty member is a SAP Certified Instructor. One Program Faculty member has over 30 current industry certifications. By attaining the certifications being recommended to students in The Program, Program Faculty set an example that life-long learning is not just for undergraduates.

- **Evaluate general education requirements, co-curricular experiences, and service-learning or other experiential education experiences incorporated into the curriculum.**

In the general education requirements, the communication course requirements help prepare students to present information in class and work with teams to communicate effectively in a variety of settings. These are skills needed to perform class activities in most CIS courses requiring class presentations and team projects. Analysis of input from industry and the CIS Advisory Board, combined with Program Faculty experience and observation, lead the Program Faculty to determine that most of students need continued practice in presentation skills. Students also need to be held to a higher professional standard with written skills. Most of our courses require students to practice these skills by requiring written reports and presentations. To

prepare students to write reports in The Program courses required for graduation, the Program Faculty require students to take ENGL 325 or ENGL 311.

Students are required to fulfill an internship if the student has not already worked more than a year in the IS field. Students generally indicated the experience is valuable. They learn to apply the knowledge and skills taught in class in a work environment. Of equal import, students come to understand what the work entails and how to interact with others in an organization. The internship helps students decide if they really like to work in a particular industry (See employer survey results.). A large number of our students receive job offers from the employers with whom they interned. (citeJLJ)

The last two senior courses (ISYS 431 and ISYS 489) in The Program requires a group project working with real clients. In the environment of working with real clients, students apply their IS skills, team skills, written skills, and communication skills. Once the project is completed, student teams are required to present the team project to the client, alumni and company representatives (from firms that hire our students on a regular basis). During the question/answer portion of the presentation, students respond and defend their project results. Once all groups finish presenting, the client picks which group did the best perceived job and the client works with this group to implement the project for the organization.

The CIS Capstone project facilitates the students in evaluating their transition from student to employee. The CIS Capstone project also helps local or regional organizations in our community to improve operations to meet their mission.

- **How is the importance of general education requirements, co-curricular experiences, and service-learning or other experiential education experiences communicated to potential students, currently enrolled students, and other stakeholders?**

The importance of these areas are initially addressed during new student orientation. First semester CIS students are advised to enroll in general education classes. The need to enroll in, and the benefit of, general education classes is also stressed in CIS classes and during the advising CIS students receive prior to registration each semester. During these interactions with students, Program Faculty stress the importance of university General Education as well as the COB Core Curriculum. Program Faculty stress the need for CIS professionals to be able to effectively communicate with non-CIS professionals. Program Faculty also help students analyze the ways in which CIS careers have changed over the past few decades. Program Faculty then have students synthesize the changes the field is likely to encounter over the course of the students' careers. Students then explain to the Program Faculty and each other how a General Education curriculum can help to prepare for a changing world.

During Dawg Days, Program Faculty introduce the concepts of general education and experiential learning to perspective students. The Program asks that the COB Internship Coordinator address the AITP RSO twice each academic year. Throughout the courses in The Program, Program Faculty impress upon students in

all the importance of finding an internship. CIS students must find their own internship, and Program Faculty stress the importance of building a network of contacts to help with the internship location process.

Beyond Ferris State University faculty and staff, The Program seeks to have other voices express the importance of general education and experiential learning. To that end, the AITP RSO invites alumni from the CIS program to return to campus and address current CIS students. Many of the alumni who return have matriculated between 1 and 3 years prior to speaking at the AITP meeting. Thus, current CIS students can often hear from former classmates how general education and internships have helped.

Field trips allow students to hear from industry insiders and executives the importance of internships, experiential learning and communication skills. Many of the comments from industry professionals are un-prodded. Students appreciate the unscripted endorsements of the course path being pursued. Hearing that the managers who are responsible for hiring CIS value general education, communication and workplace skills helps bolster CIS students' perceptions of their own worth in the marketplace.

For potential students, the needs for and the benefits of an industry internship are clearly delineated in promotional data. The benefits of the mandatory internship is espoused on the CIS Program Ferris State University web pages. In visits with perspective students and their families, Program Faculty repeatedly emphasize the importance of general education, internships and the Business Core.

When students return to campus after completing an internship, Program Faculty have the returning students address groups of underclass students regarding the lessons learning from the internship. Students returning from completed internships are also able to address questions and concerns from classmates regarding all aspects of corporate culture and how The Program courses are preparing students to successfully deal with the vagaries of corporate existence.

Program Faculty espouse the benefits of internships to the CIS Advisory Board. Program Faculty also use the opportunity of the CIS Advisory Board meeting to solicit internship opportunity information. Internship opportunity information is disseminated by Program Faculty to CIS students in class and through the AITP RSO.

- **How are program requirements communicated to potential students, currently enrolled students, and other stakeholders?**

The communication of the program requirements to perspective students is primarily based on the up-to-date check sheets. The information for perspective FTIAC students is clarified during Dawg Days and campus visits. The requirements for students at community colleges is communicated via check sheets and Program Transfer Guides. The information in the aforementioned documents is clarified and explained through on-site advising with perspective students.

The primary conduit of information on program requirements is the Program Faculty. The tool used to communicate these requirements to currently enrolled students is MyDegree. The conduit through which the Program Faculty ensure that the information is being transmitted and clearly received is student advising. Advising of CIS students is required of all students each semester. Registration Holds are lifted by the advisor after the required advising. CIS students are advised by Program Faculty.

The main communication medium is the Program Faculty. For potential students, the information on the program web-site and Program Faculty attending Dawg days provide the information potential students and their parents require. Program Faculty also attend recruiting events at partner institutions such as Grand Rapids Community College and Northwestern Michigan College.

- **Evaluate curricular changes that have been implemented in the last five years.**

In academic year (AY) 2012-2013 the Program Faculty proposed a new course, ISYS 431. This course would be a second course in Systems Analysis and Design. The two goals of proposing this course was to (1) provide an opportunity for students to demonstrate the skills developed in ISYS 330, the first Systems Analysis and Design Course, and (2) to ensure that students from on-campus and off-campus had the same preparation for the CIS Capstone course. The course was approved in 2013, and placed as course requirement for students starting the CIS BS program in AY 2013-2014.

In AY 2015-2016, the Program Faculty, with input from alumni and the CIS Advisory Board, determined that ISYS 110 was not providing students with the desired level of preparation for ISYS 216. The Program Faculty modified ISYS 110 to cover the Python programming language, and shift the emphasis of the course away from templating programs and web development

In the 2016-2017 academic year, The Program created a new course in Enterprise Resource Planning (ERP) systems, ISYS 482. The course was approved and will offered for the first time in the Fall of 2017. The Program Faculty also adjusted several course prerequisites and updated course outcomes for all other program courses. This effects not only CIS majors, but dual majors in Acct/CIS, students in the Associate degree, and students pursuing the CIS minor.

In the 2016-2017 school year, The Program submitted curricular changes that involved updating nearly all major courses in the CIS core. First, The Program adapted the new general education requirements that will be implemented in Fall 2017. Second, each course in the CIS major core was reviewed and updated. Our three database courses (ISYS200, ISYS371, & ISYS470) were replaced with two updated new courses (ISYS 272 and ISYS 372). For CIS students, ISYS 200 was replaced with ISYS 221 – Mobile Application Development. ISYS 325 was replaced with ISYS 327. Last, we added ISYS 482 – ERP class to the program.

All of these changes are based on new trends in the industry and support from our advisory board members.

The change in programming language and course emphasis for ISYS 110 was implemented in Fall Semester of 2016. Based upon feedback from Program Faculty teaching ISY 216 (the follow-on course), the change of course focus has better prepare students to handle the intricacies of Java® programming. Feedback from students has been generally favorable concerning the change. Along with introducing programming concepts earlier in the program, the change to ISYS 110 also allows CIS students to determine if a career in programming is a good fit. By helping students make the determination of student aptitude and cultural fit in the field early in the student's academic career, student have maximum flexibility in discussing options with their advisors.

The addition of ISYS 431 provides students with an opportunity to gain additional practice with, and demonstrate competency in, the concepts introduced in ISYS 330. The concepts of ISYS 330 receive reinforcement in ISYS 371. ISYS 371 introduces sufficient new content that students must synthesize new solutions to problems using prior course constructs. ISYS 431 allows students to gain additional competency in the concepts of Systems Analysis and Design, gain additional practice with the SCRUM methodology and reflect on permutations of group cooperation prior to demonstrating these skill in the program capstone course.

The replacement of ISYS 371 with ISYS 372 is for CIS students (BS, AAS, majors, and minors). Non-majors will still have ISYS 200 as a database course. ISYS 272 can allow a more industry focused course on database systems administration. ISYS 272 will focus on Structure Query Language and Relational Database theory, best practice, and methodologies as they relate to business design and problems commonly found in organizations. ISYS 372 will allow students to delve more deeply into the constructs of databases and normalization. These concepts were not able to be adequately covered in a database course open to non-majors. The time spent discussion basic computer technology and terminology consumed too much of the course.

ISYS 221 – Mobile Application Development, addresses the need in the industry for CIS graduates who understand the differences in programming for a desktop or laptop computer, and programming for a mobile platform such as a cell phone or tablet. The Java® programming language is introduced in ISYS 216. While ISYS 221 also utilizes the Java® programming language, the tools and methodologies are different on a mobile platform. While there are differences in desktop/server platforms vs. mobile platforms, students are still able to apply and develop the programming skills gained in ISYS 216. ISYS 216 students also must identify situations where differences between the computing platforms necessitates a different programming approach.

ISYS 325 was replaced with ISYS 327. Industry partners expressed an interest in having CIS graduates possess a greater understanding of the setup of the programming environments in which employees in the IS field operate. ISYS 325 was designed to provide students with a greater understanding of networking details. ISYS 325 was designed with input from industry partners during a time in the IS field when CIS majors were likely to have to provide their own networking support. Specialization within the IS field has seen the rise in networking specialists who come from more engineering oriented backgrounds. As such, the Program's industry partners and alumni indicated that while there was a need for CIS graduates to be able to communicate effectively with networking specialists, CIS graduates were unlikely to become networking specialists. Conversation with industry professionals and employers who provide internships to the Program's students strongly supported a course within which students are able to identify and distinguish between the characteristics of different operating environments. In ISYS 327, students will select the appropriate programming environment, and then prepare their own programming environment based on project requirements. After completing ISYS 327, CIS students will be able to select, create and maintain the operating environments needed for future CIS courses. The ability to analyze project needs, select the appropriate environment, and create the needed programming environment will also allow students to create home-lab environments for life-long learning after graduation.

ISYS 482 will debut in the Fall Semester of 2017. ISYS 482 will utilize SAP. The addition of SAP skills and ERP knowledge was highly requested by our industry partners. ISYS 482 fundamentally changes the students' perceptions of information systems and organizations. ISYS 482 reinforces the concepts students are introduced to in Management courses and in the Project Management course. Instead of viewing organizations as just a series of individual programs and departments, students develop the perspective of organizations as organizations.

ISYS 489 Senior Capstone was modified to incorporate the changes in the Program's other courses. The development methodology was changed from the Systems Development Life Cycle to SCRUM. The change was based on recommendations from the CIS Advisory Board and industry partners. An additional change was a modification of the final presentation. Prior to the 2016-2017 academic year, final presentations were conducted in the students' local campus (Grand Rapids, Big Rapids, and Traverse City). For the Spring of 2017, all class presentations were at the Big Rapids campus. This change allowed all students to meet face-to-face, across all of the supported academic partner campuses. This meeting helped to foster a sense of being a Ferris State University student among students not located at the Big Rapids campus.

- **Evaluate curricular changes currently under consideration.**

Based on feedback from the CIS Advisory Board, CIS alumni, and industry partners, the Program Faculty is considering a number of new course offerings to be added to The Program curriculum. Unfortunately, there is no slack within the program for adding required courses. The Program Faculty has tried to offer courses not on the standard course offerings, but there is the issue of making the information available to students with sufficient lead time to allow CIS students to register for the course. As such, one significant change the Program Faculty is considering is adding rotating courses to The Program. The Program Faculty is considering adding a slate of 3 or 4 courses which would rotate every other year (2 courses per year). As students pursuing a CIS BS degree need 4 directed electives, a rotating slate of courses for Directed Electives would allow Program Faculty advising majors and minors on the availability of courses in specific semesters.

Based on input from current students, alumni, industry partners, the CIS Advisory Board and the market scanning of the Program Faculty, The Program is considering 3 courses as additions to the curriculum in the near future: 1) Human Computer Interaction, 2) C#, 3) Advanced Mobile Applications and 4) Technology and Ethics. Each of the courses under consideration would enhance the CIS students' skill sets in ways that are desired by employers in the market for CIS talent.

A course in Human Computer Interaction would focus on students creating program interfaces that are pleasing to the target market while adhering to rules of proper programming and etiquette. The course would allow students to develop, enhance and demonstrate the interface skills taught in other courses, and reflect on the importance of various human interface factors to a wide variety of user populations.

Many of the employers interested in Ferris State University CIS graduates use C# as a programming language platform, instead of Java. While some employers have expressed a willingness to train Java programmers in the syntax or C#, having C# and Java programming language skills would enhance internship and employment opportunities for The Program's graduates.

The 200 level course in mobile application development takes place early in the computer programming skill development of CIS students. The Program Faculty believe that an Advanced Mobile Application Development course, with additional prerequisites, would allow students to construct more intricate and useful applications. Advanced database access, wearable devices, and Global Positioning Satellite data access are among the topics which could extend the knowledge and skill of students in the class.

In an effort to emphasize the importance of ethics in IS, the faculty feel that a course exploring the ethical implications of technology would be apropos for CIS students. CIS is at the forefront of the technology revolutionizing our daily life.

The Program Faculty feel that a course examining the role of technology on society and the ethical implications of technological development would benefit our students, Ferris State University, the College of Business, the organizations who employ graduates of The Program, and society as a whole.

- **Evaluate program policies and procedures implemented to ensure quality, consistency, and currency of the curriculum.**

The Program Faculty believe we have continuously made a great effort to keep our curriculum current and relevant. The Program Faculty meet weekly or bi-weekly each semester (except Summer Session). The regularly scheduled Program meetings are 1 ½ hours long. The regular Program Meetings allow time and an appropriate venue for the Program Faculty to discuss course evaluations, CIS Advisory Board recommendations, new developments in the field of Information Systems, changing technology, course changes in other programs, and student needs.

The Program Faculty continuously evaluate changing trends in the industry. The goal is identify actual changes in the field. It is the goal of the Program Faculty to separate bonafide changes in the field from ephemeral pop trends. Changes in the industry are discussed at the weekly Program Faculty meetings.

To help with environmental scanning, the Program Faculty consult with the CIS Advisory Board. The CIS Advisory Board consists of Ferris State University alumni and interested industry professionals. The CIS Advisory Board provides an evaluation of the changes being considered in The Program. The CIS Advisory Board also reviews changes that have been made in the program, and evaluates the benefits those changes have to the students in the Program. The comments and recommendations of the CIS Advisory Board are reviewed annually, after the CIS Advisory Board meeting. The findings from the CIS Advisory Board meeting are referenced at the regularly scheduled Program Faculty weekly meetings.

As a source of immediate feedback on students currently in The Program, The Program Faculty assess employer evaluations of CIS interns. While feedback from employers of graduates of The Program provides a view of the skills students have at the end of the program, the feedback is too late to allow for changes to the courses the evaluated students is taking. The feedback on the preparation and skills of interns allows for changes to courses that the evaluated student is taking, and an ability to enhance any skills the employers of our interns find should be burnished. Feedback from internships is reviewed each semester during regularly scheduled meetings of the Program Faculty.

The Program Faculty regularly review curriculum recommendations of the ACM, AITP, and AIS associations. Curriculum recommendations from these bodies represent the best-of-breed results of the courses of study being offered by CIS

Management Information Systems, and Computer Science program throughout the world. The recommendations are not intended to be implemented wholesale by education institutions. Instead, the recommendations are signposts to provide guidance on what our colleagues are teaching at other institutions. The review of the curriculum recommendations from the computing associations has been beneficial in keeping The Program current with course offering in computer technology in other parts of the academy.

Collin College houses the National Convergence Technology Center (CTC). The CTC is funded by a grant from the National Science Foundation (NSF). The CTC hosts meeting of the BILT twice a year. The BILT provides an opportunity for colleges and university faculty and administrators to discuss issues relating to Information Technology and education, from the perspective of industry executives. Program Faculty representing Ferris State University participate in the twice yearly BILT meetings. After the BILT meetings, Program Faculty discuss the topics presented at regularly scheduled Program Faculty meetings. Participation in the BILT meetings has been beneficial in ensuring the quality of The Program course offerings and making certain that our course offering are current and topical.

The Program also believes that it is critical to maintain the currency of the skills of the Program Faculty. Program Faculty have attended training to maintain the currency of the Program Faculty's skill base. While most of the tenured faculty, and tenure track faculty, hold terminal degrees in their fields, lifelong learning is not only for alumni of The Program. Program Faculty seek and professional certifications to ensure that new technologies and methodologies are not lost to students of The Program due to a shortage of Program Faculty skills. Over the past 5 years multiple Program Faculty have achieved industry recognized certification or recertification in area important to The Program. The preparation for, and subsequent passing of, the certification exams have allowed Program Faculty to bring new and current information on the state of the Information Systems field to the balance of the Program Faculty. To maintain this trend, The Program Faculty recommend that the COB and AFIS Department continue to provide funding and support for Program Faculty to attend industry training and achieve industry recognized certifications.

1E. Assessment of Student Learning

[Return TOC](#)

- **Program-level Student Learning Outcomes**
 - Include program-level student learning outcomes (that is, when a student graduates from the program, what should they know, be like, and be able to do?)
 1. **SYSTEMS DESIGN AND IMPLEMENTATION:** Students will design and implement a system in accordance with designated system specifications within a project management framework.
 2. **DATABASE:** Students will analyze user requirements and design, create, and manage a database.
 3. **PROGRAMMING:** Students will design, develop, and test algorithms to meet user requirements.
 4. **PROJECT MANAGEMENT:** Students will use effectively the appropriate communication tools in the allocation, monitoring, and measurement of resources to achieve project objectives within a team environment.
 - Identify and evaluate the assessment measures that are used to gauge overall student success in accomplishing established program-level learning outcomes (for example- capstone assignment, internship evaluation, national examination pass rates, etc.)
 - All CIS students are required to complete an internship for graduation. Only students that have 1+ year work experience are exempt from this requirement. Internship employers complete student evaluations at end of each internship. (See appendices #?? : Internship employers evaluations summary) (citeJLJ)
 - Student also, complete a two-semester capstone project that includes working with real clients to develop a web base application. Each team presents their project to clients and visiting employers that hire our students.
 - The capstone course explores major software development and implementation techniques by working on a real world project. This is a team-oriented course designed to implement systems design specifications using current programming tools and techniques. Successful completion of this course requires students to demonstrate skills which map directly to program outcomes:
 1. Using appropriate techniques students will design and implement a complete system with a web front end and a database backend.
 2. Students will work in a team environment using appropriate skills from project management and agile technologies.
 3. Students will interview the client and solve problems related to implementing the system successfully.
 4. Students will plan and perform post-implementation activities.These outcomes are measured via feedback from attendees of the capstone and by instructor evaluation of the final projects. The outcomes map directly to our program outcomes.

- Students are required to undertake an internship in their field of study. Evaluations from employers are used to assess how well performed in their area of study.
- Identify and evaluate program policies and procedures designed to formalize the process of establishing, monitoring, and updating program-level student learning outcomes.
 - Weekly program meetings are held where individual course outcomes are compared and evaluated. Outcomes and the evaluation process is updated as needed to meet course and program outcomes.
 - Feedback from students, employers, and faculty are also evaluated and factored into course and curriculum changes.
 - Program outcomes are updated as needed to reflect feedback from the sources mentioned previously and as a result of changes in technology.
- How is the process of measuring and monitoring program-level student learning outcomes for making program improvements communicated to program stakeholders (including students, advisory members and employers, community members, and the University?)

- Link to TracDat results which shows the program's continued use of program-level student learning outcomes as one way to make program improvements.

See Appendix D

- Link to a curricular map outlining how program outcomes are addressed throughout the curriculum.

See Appendix E.

- Evaluate positive program improvements made over the last three years as a result of measuring program-level student learning outcomes.

As a result of the evaluation of the program outcomes, changes have been made to the upper level courses to better prepare graduates. ISYS 431 was added to the curriculum to ensure transfer students had sufficient system analysis skills for the capstone regardless of previous coursework. The course was then further refined to require a near master's level proficiency to make certain sufficient of a graduate's ability to perform within the workplace. The ISYS 489 capstone was restructured to use a SCRUM framework for the development process. This brought the course in line with current practices. The course was further refined to increase competition between development teams and allow for a more realistic workplace simulation. To better meet the

program's outcomes and prepare students for the ISYS 431/ISYS 489 courses, the database and intro programming have been updated. The resulted in the addition of a new database course ISYS 272 and the restructuring of ISYS 110.

- Has analysis of program-level student learning outcomes informed the program's short and long-term strategic plans?

Yes. In the short term, it influences the course content and how the material is presented. The outcomes require continued reevaluation of course content to remain current. Changes in content can require a reexamination of how the material is presented and proficiency assessed. In the long term, it requires faculty to undertake continued research in order to direct the path taken by the short term changes.

- What assistance from the university would be valuable in the establishment, monitoring, and reporting of the program-level student learning outcomes?

The university could help with the establishment, monitoring, and reporting of the program-level student learning outcomes by providing survey and statistical support. The creation of student surveys that are uniform across the institution would help program see how they are doing in relationship to the other programs on campus.

An office that would be responsible for sending out, collecting and tabulating surveys to employers and graduates. The surveys would focus on employer / graduate experience as related to the skill sets represented by the program outcomes. Additionally, it would help maintain contact with employers and graduates. This would need to be done on an annual basis.

The university could help with establishment, monitoring, and reporting of the program-level student learning outcomes by establishing a university baseline. With a university wide baseline, programs would know if they are performing up to the standards set forth by the university.

Uniform reports from the university would help Program Faculty find the information needed to assist in program-level student learning outcome reporting. The reports currently available to The Program make it very difficult to identify CIS majors if the individual has an additional major (dual or triple majors).

The university could provide programs with annual alumni survey results. Alumni surveys would allow programs to gauge how the student outcomes pursued in the program are serving students immediately after graduation,

as well as providing a longitudinal view of the relevance of program outcomes.

The university could provide support for Program Faculty to have time and resources for the analysis of the data provided. This support would be valuable beyond APR years in maintaining a constant review of the program outcomes. The resources should include funding for faculty to visit employers and internship sites.

1F. Program Profile

[Return TOC](#)

- **Apps, Admits, and Enrolled**

- Report the number of **applications** to the program over the past five years.
 - ON/OFF-CAMPUS

Program	2012	2013	2014	2015	2016
CIS - BS	58/20	62/25	45/26	54/35	53/24
CIS - AAS	n/a	n/a	9/0	24/0	13/0
ACCT/CIS -BS	3/0	7/0	9/0	5/0	6/0
Total on/off	61/20	69/25	63/26	83/35	72/24
TOTAL	81	94	89	118	96

- Report the number **admitted** to the program over the past five years.
 - ON/OFF-CAMPUS

Program	2012	2013	2014	2015	2016
CIS - BS	36/16	51/24	38/24	39/29	35/23
CIS - AAS	n/a	n/a	6/0	22/0	10/0
ACCT/CIS -BS	2/0	6/0	8/0	5/0	4/0
Total on/off	38/16	57/24	52/24	66/29	49/23
TOTAL	54	81	76	95	72

- Report the number **enrolled** into the program over the past five years.

Program	2012	2013	2014	2015	2016
CIS - BS	n/a	n/a	9/9	12/14	7/11
CIS - AAS	n/a	n/a	6/0	14/0	5/0
ACCT/CIS -BS	n/a	n/a	2/0	3/0	0/0
Total on/off	n/a	n/a	17/9	29/14	12/11
TOTAL	n/a	n/a	26	43	23

- Evaluate the overall “apps, admits, and enrolled” trends within the program.

Overall, in the state, enrollments in colleges has been on the decline, CIS/CIT programs enrollments has followed that same trend over the last 5 years. There was a slight surge in enrollments in 2015, about 29% more than the previous year but the trend remains. Enrollment drops again in 2016 by 22%.

- How does the program address “apps, admits, and enrolled” trends within the program (general) and how will the program address “apps, admits, and enrolled” trends reported (specific).

To address this issue, The Program is introducing new courses that could be attractive and make graduates more attractive to potential employers. In addition, The Program ensures that a Program Faculty member is present for every Freshman Orientation registration during the summer. The presence of Program Faculty ensures that students who want to change majors or are undecided about their major, can talk to Program Faculty about the relative merits of The Program.

- **Enrollment – Headcounts**

- Report the number of on-campus students enrolled in the program over the past five years.

On-Campus

Program	2012	2013	2014	2015	2016
CIS – AAS	13	13	12	26	20
CIS - BS	60	68	69	55	51
ACCT/CIS	5	11	9	14	9
TOTAL	78	92	90	97	80

- Report the number of off-campus students enrolled in the program over the past five years.

Off-Campus

Program	2012	2013	2014	2015	2016
CIS - BS	44	46	52	55	55

- Report the total number of students enrolled in the program.

Total On-Campus & Off-Campus

Program	2012	2013	2014	2015	2016
CIS – AAS	13	13	12	26	20
CIS - BS	104	114	121	110	106
ACCT/CIS	5	11	9	14	9
TOTAL	122	138	142	150	135

- Evaluate the ideal number of enrolled students given the available faculty, physical resources, and other present limitations or requirements. Provide a complete explanation as to how the number presented was determined.

Our ideal enrollment for students in The Program is 112 based on faculty resources available. This number is derived from the available faculty (7) and the Ferris State University student teacher ratio of 16/1. The 112 value is somewhat high, as two of The Program's faculty members share duties with the CIT program.

Current enrollment 135

Current number of faculty: 7

- If the current number of enrolled students is less than the ideal number, outline program plans to increase student enrollment.

The current number of enrolled students is greater than the ideal number. The Program currently has 135 students enrolled on-campus and off-campus.

- If the current number of enrolled students is equal to or greater than the ideal number, answer the following:
 - Evaluate the determination that the program is at or has exceeded capacity in relation to stated programs goals and strategic plan(s).

The stated goals are at risk with the current student/teacher ratio in terms of advising and the ability of the existing Program Faculty to maintain the relevance and currency of course offerings. The higher student/teacher ratio can affect The Program goals of developing analytical and critical thinking skills, by reducing the interaction of faculty with each student.

- Evaluate the option of increasing student enrollment in relation to stated program goals, program strategic plan(s), and current and projected market conditions.

The option to increase student enrollment would harm the stated goals of The Program. Increased enrollment, especially off-campus would not be sustainable with the current number of tenured and tenure-line faculty.

- What resources (facility, staff, space, equipment, etc.) would be required to increase enrollment?

To increase enrollment The Program would need 3 additional (new hires beyond the current number of Program Faculty) tenure-line Program Faculty. Retiring Program Faculty would need to be replaced. Additional classroom/class-lab space optimized for computer instruction would be needed to support the additional classes. With additional students, many of the courses in The Program would have to be offered each semester, or multiple sections would be needed in the semesters when the courses are offered. In addition to the aforementioned resources, the Program Faculty would require course release time to recruit new students.

Resources to support off-campus students would be needed as well. Off-campus locations would need to be upgraded to support the new courses. Network bandwidth at off-campus locations would need to be increased to support tele-delivery options for course instruction. Proctors for exams would be needed during exam times for the tele-delivered courses.

- What would the ideal number of enrolled students in the program be assuming the requisite additional resources were made available?

With 3 new faculty lines in the Program Faculty, the ideal number of enrolled students would be 160.

- Evaluate the overall “enrollment-headcounts” trends within the program.

There is no identifiable trend in the data in regards to student enrollment-headcount in The Program. Student enrollment number in the program have varied between 122 and 150 over the past 5 years, with no predictable pattern.

- How does the program address “enrollment-headcounts” trends within the program (general) and how will the program address “enrollment-headcounts” trends reported (specific?)

The Program Faculty discuss enrollment-headcount numbers each semester. Our values re compared with reported enrollments in the Information Systems discipline in the State of Michigan and Nationwide. The Program has no plan to address enrollment trends, as no university resources exist at the program level to assist with program level advertising or program level student recruitment.

- **Student Credit Hour Trends**

- Report the summer, fall, spring, and fall plus spring (F+SP) student credit hours generated over the past five years.

Student Credit Hours		Summer	Fall	Spring	F+SP
F+SP	Year				
ISYS	2011-2012	653	2828	2565	5403
	2012-2013	435	2406	2543	4949
	2013-2014	399	2616	2847	5463
	2014-2015	435	2886	2355	5241
	2015-2016	477	2601	2325	4926
	Average	480	2667	2527	5196

- Evaluate overall “student credit hour” trends within the program.

The Program experienced a significant drop summer 2011-2012 to 2012-2013, which the Program Faculty believe was during the period the Federal Government stopped financing summer school. After that point summer enrollment averages 436 SCH. The drop in SCH over the last three years, the Program Faculty believe, is caused by the demand for our ISYS 105 class. The Program had to drop offering roughly three sections (44 student per section) per semester over the past three years. ISYS 105 is not a part of the CIS major, but is a service course offered by The Program, in support of the College of Business. Enrollment in ISYS 105 is dependent on factors in other programs within the COB.

- How does the program address “student credit hour” trends within the program (general) and how will the program address “generated student credit hours” trends reported (specific).

The Program Faculty review SCH trends as the data becomes available each semester. The Program Faculty reevaluate demand for individual courses and make adjustments as needed. To address the ISYS 105 issue, The Program updated the outcomes for the ISYS 105 course by increasing the Excel® emphasis. Feedback from other programs within the College of Business indicated a desire to provide students with more experience with Excel. The requested change to ISYS 105 has resulted in the course being adopted as a part of the COB Core Curriculum. The course will become required for all College of

Business students required to satisfy the COB Core Curriculum in AY 2017-2018 or 2018-2019 academic year.

The Program Faculty also engage the faculty of other programs at Ferris State University, to explain the benefits of our classes to students of those other programs. Where possible, The Program will seek to assist other programs within the university by providing courses that meet the needs of students in those other programs. AS an example, the Program Faculty are examining the feasibility of offering ERP/SAP courses tailored to majors other than CIS majors.

- **Productivity**

- Report the summer, fall, spring, and fall plus spring (F+SP) SCH/FTEF for the last five years.

SCH/FTEF

	Year	Summer	Fall	Spring	Avg F+SP
CIS	2011-2012	318.02	321.28	308.83	630.50
	2012-2013	268.52	312.18	308.24	620.29
	2013-2014	200.43	327.00	333.82	661.04
	2014-2015	217.50	338.21	311.92	651.74
	2015-2016	237.09	287.65	288.82	576.40
	Average	248.31	317.26	310.33	627.99

- Report the university average SCH/FTEF

SCH/FTEF

	Year	Summer	Fall	Spring	Avg F+SP
University	2011-2012	150.30	232.91	221.49	454.51
	2012-2013	147.68	234.53	227.86	462.53
	2013-2014	141.26	238.18	230.82	469.11
	2014-2015	143.74	236.02	224.22	460.26
	2015-2016	146.13	230.71	225.57	456.41
	Average	145.82	234.47	225.99	460.56

- Evaluate overall “productivity” trends within the program including how the program SCH/FTEF compares with the University average.

The CIS program SCH/FTEF is 36% higher than the University average. The Program productivity has been higher than the Ferris State University average in each of the last 5 years. The Program’s productivity for 2015-2016 was down 11%. The Program Faculty believe this was the cause of the drop in demand for our ISYS 105 course. Including the 11% drop in productivity for The Program in AY 2015-20016, Program Faculty were still more productive than the university as a whole during AY -2015-2016.

- How does the program address “productivity” trends within the program (general) and how will the program address “productivity” trends reported (specific).

With the drop in demand for ISYS 105 we are offering fewer sections of the course, which should correct the SCH/FTEF. The ISYS 105 course allows cap of 44 students, and the course encountered a large change in demand during the Fall 2015 semester. The dip in demand caused several of the sections to be approximately 70% full. Since the Program reduced the number of sections of ISYS 105 being offered The Program is again filling most sections at 100% of rated capacity.

- **Enrollment – Residency**

- Report the number of enrolled students from Michigan (“residents”) and the number enrolled from out-of-state (“non-resident”) over the past five years.

TERM	MAJOR	Resident	Midwest Compact	Non-Resident
201208	CIS-BB	25	0	1
	CIS-BS	74	2	2
	CIS-AAS	13	0	0
	ACCT/CIS	4	0	0
201008	TOTAL	113	2	3
201308	CIS-BB	9	0	0
	CIS-BS	97	3	4
	CIS-AAS	13	0	0
	ACCT/CIS	10	0	0
201308	TOTAL	120	3	4
201408	CIS-BB	5	0	0
	CIS-BS	107	3	6
	CIS-AAS	12	0	0
	ACCT/CIS	9	0	0
201408	TOTAL	133	3	6
201508	CIS-BB	0	0	1
	CIS-BS	105	0	5
	CIS-AAS	26	0	0
	ACCT/CIS	14	0	0
2001508	TOTAL	145	0	6
201608	CIS-BS	100	0	6
	CIS-AAS	20	0	0
	ACCT/CIS	9	0	0
201608	TOTAL	129	0	6
	AVERAGE	128	1.6	5

- Evaluate overall “enrollment – residency” trends within the program.

Each year the majority of enrolled students were resident. In analyzing the 5 year average, 95% of The Program's students were resident, 01% of The Program's students were Midwest compact, and 04% of The Program's students non-resident. The trend continues to be that the majority of The Program's students are residents.

- How does the program address “enrollment – residency” trends within the program (general) and how will the program address “enrollment – gender” trends reported (specific).

Student recruitment is faculty intensive effort. There are no dedicated resources for recruitment provided to The Program at the university, college or department level. It is difficult to recruit students for the Midwest Compact with little to no recruiting resources. For recruitment to be beneficial, the effort must be regular and repeated. Without reliable resources to ensure a long-term commitment to recruiting from junior high schools and high schools, recruitment is not effective.

Faculty have limited time and resources to participate in recruiting and Program Faculty spend the limited time available dedicated to in-state recruiting events. These events include visiting ISD'S, community college IT classes, and community college recruitment events.

The Program Faculty has focused our recruitment effort on making The Program a top CIS program, in the hopes that a great program will attract students. The Ferris State University's College of Business CIS Program is rated as the #8 ranked program in the nation for 2017(by Accredited Schools Online.). No university resources have been made available to utilize this ranking in recruitment materials.

The Program does attract a few foreign students. Foreign students represent a largely un-tapped resources for The Program. Foreign students are slightly more profitable, on a per credit basis, for the university, as foreign students often pay full out-of-state tuition. However, resources for recruiting foreign students is non-existing to the program.

- Report the average age of enrolled students over the past five years.

TERM	MAJOR	Avg Age
201208	CIS-BB	28
	CIS-BS	26
	CIS-AAS	19
	ACCT/CIS	19
201308	CIS-BB	28
	CIS-BS	26
	CIS-AAS	22
	ACCT/CIS	20

201408	CIS-BB	29
	CIS-BS	26
	CIS-AAS	20
	ACCT/CIS	20
201508	CIS-BB	31
	CIS-BS	
	CIS-AAS	19
	ACCT/CIS	22
201608	CIS-BS	27
	CIS-AAS	20
	ACCT/CIS	23

- Report the average GPA of enrolled students over the past five years.

TERM	MAJOR	Avg. GPA
201208	CIS-BB	3.28
	CIS-BS	3.00
	CIS-AAS	3.03
	ACCT/CIS	3.31
201308	CIS-BB	3.18
	CIS-BS	2.99
	CIS-AAS	2.70
	ACCT/CIS	3.36
201408	CIS-BB	3.20
	CIS-BS	3.12
	CIS-AAS	2.66
	ACCT/CIS	3.32
201508	CIS-BS	3.11
	CIS-AAS	2.99
	ACCT/CIS	3.16
201608	CIS-BS	3.17
	CIS-AAS	3.08
	ACCT/CIS	3.15

- Report the average ACT of enrolled students over the past five years.

TERM	MAJOR	Avg. ACT
201208	CIS-BB	22.50
	CIS-BS	21.76
	CIS-AAS	22.15
	ACCT/CIS	24.00
	TOTAL	
201308	CIS-BB	24.00
	CIS-BS	21.34
	CIS-AAS	22.09
	ACCT/CIS	22.80
	TOTAL	
201408	CIS-BB	
	CIS-BS	21.96
	CIS-AAS	22.62
	ACCT/CIS	22.33
	TOTAL	
201508	CIS-BB	
	CIS-BS	21.83
	CIS-AAS	22.16
	ACCT/CIS	22.54
	TOTAL	
201608	CIS-BB	
	CIS-BS	22.42
	CIS-AAS	
	ACCT/CIS	23.25
	TOTAL	

- **Enrollment – Gender and Ethnicity**

- Report the number of enrolled students by gender over the past five years.
- Report the number of enrolled students by ethnicity over the past five years.
- Report the number of full time and part time students over the past five years.

TERM	Major	Enrolled	Male	Female	Unk	Black	Hisp	Native	Asian	White	Hawaiian	Multi	Foreign	Full Time	Part Time
201208	CIS-BB	26	21	5	0	2	1	0	1	21	0	0	1	11	15
	CIS-BS	78	62	16	2	5	0	1	0	65	0	3	2	46	32
	CIS-AAS	13	11	2	0	1	0	0	0	12	0	0	0	12	1
	ACCT/CIS	1	1	0	0	0	0	0	0	1	0	0	0	1	0
201208	TOTAL	118	95	23	2	8	1	1	1	99	0	3	3	70	48
201308	CIS-BB	9	8	1	0	0	1	0	0	8	0	0	0	3	6
	CIS-BS	105	79	26	2	11	1	0	1	85	0	1	4	64	41
	CIS-AAS	13	11	2	2	1	0	0	0	9	0	1	0	12	1
	ACCT/CIS	1	1	0	0	0	0	0	0	1	0	0	0	1	0
201308	TOTAL	128	99	29	4	12	2	0	1	103	0	2	4	80	48
201408	CIS-BB	5	4	1	0	0	0	0	0	5	0	0	0	1	4
	CIS-BS	116	88	28	1	6	3	0	4	92	0	3	7	67	49
	CIS-AAS	12	11	1	2	1	0	0	0	8	0	1	0	11	1
	ACCT/CIS	9	3	6	0	1	1	0	0	7	0	0	0	9	0
201408	TOTAL	142	106	36	3	8	4	0	4	112	0	4	7	88	54
201508	CIS-BB	1	0	1	0	0	0	0	0	0	0	0	0	1	0
	CIS-BS	110	95	15	2	6	5	1	4	87	0	3	1	60	46
	CIS-AAS	26	22	4	0	4	1	0	0	18	0	3	0	26	0
	ACCT/CIS	14	8	6	0	2	1	0	0	11	0	0	0	14	0
201508	TOTAL	151	125	26	2	12	7	1	4	116	0	6	1	101	46
201608	CIS-BS	106	89	17	2	4	7	0	3	86	0	3	1	60	46
	CIS-AAS	20	17	3	0	2	1	0	0	15	0	2	0	19	1
201608	TOTAL	135	112	23	2	7	9	0	3	108	0	5	1	87	48
	Average	134.8	107.4	27.4	2.6	9.4	4.6	0.4	2.6	107.6	0	4	3.2	85.2	48.8

- Evaluate overall “enrollment – gender and ethnicity” trends within the program.

Female enrollment within The Program has averaged 20% over the past 5 years. Female enrollment in the program has ranged from a low of 23 to a high of 36. The peak of female enrollment was in 2014, with 36 female students enrolled in the program representing, 25% of the students in The Program. There is no discernable pattern in the changes in the number of females enrolled in The Program.

Ethnic/minority enrollment in The Program has averaged 13% over the past 5 years. Ethnic/minority enrollment in the program has ranged from a low of 11 to

a high of 24. The peak ethnic/minority enrollment was in 2015, with 24 ethnic/minority students enrolled in the program, representing 16% of the students in The Program. . There is no discernable pattern in the changes in the number of females enrolled in The Program.

- How does the program address “enrollment – gender and ethnicity” trends within the program (general) and how will the program address “enrollment – gender” trends reported (specific).

There are no resources within The Program for recruitment of students. There are no resources from the AFIS Department which can be made available to The Program for the recruitment of students. There are no resources from the College of Business dedicated to The Program for the recruitment of students. There are no resources from Ferris State University dedicated to The Program for the recruitment of students. Full faculty load (4/4) and travel to off campus locations (in support of students in Grand Rapids, Muskegon and Traverse City) limit the time Program Faculty could dedicate to recruitment.

There are no resources from Ferris State University dedicated to promoting individual program within the university. There are no resources from Ferris State University dedicated to recruiting students for individual program within the university. Although The Program is currently rated #8 nationally, no resources exist to get information about The Program’s quality to perspective female or ethnic/minority perspective students.

The CIS Program does not have address “enrollment - gender and ethnicity” within its program. The CIS Program has no plans to address “enrollment - gender and ethnicity” trends within the Program. The Program Faculty have discussed the issue. The Program Faculty have no solutions for the acquisition of resources to address issues of “enrollment - gender and ethnicity” trends within the program.

- **Retention**

- Report the percentage of students who chose to enroll in a second year in the program after having completed their first (AKA – “first year retention”) over the last five years.

Ferris State University does not provide data at the program level for the retention rate of students within The Program. No data is provided for this section.

TERM	MAJOR	% Still Enrolled In Year 2
201108	CIS	
201208	CIS	
201308	CIS	
201408	CIS	

201508	CIS	
	Average	

- Evaluate overall “retention” trends within the program.

A large portion of the students enrolled in The Program start at our Community College partners. Without the inclusion of this data, no analysis of retention trend is meaningful for the CIS Program. Ferris State University does not provide data at the program level for the retention rate of students within The Program. No evaluation of such data is possible for this APR.

- How does the program address “retention” trends reported (specific).

A large portion of the students enrolled in The Program start at our Community College partners. Without the inclusion of this data, no analysis of a retention trend is meaningful for the CIS Program. Ferris State University does not provide data at the program level for the retention rate of students within The Program. The Program Faculty have modified courses and adjusted The Program’s course of study to make The Program more appealing to the current generation of students. These changes are not in response t “retention” trends, as no data exists to allow the Program Faculty to establish or track such trends.

- Program Graduates**

- Report the number of program graduates from the Big Rapids campus over the last five years.

Program	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CIS - AAS	6	3	2	3	2
CIS - BB	10	9	2	1	
CIS -BS	1	9	9	10	16
ACCT/CIS-BB	4				
ACCT/CIS-BS			2		2
TOTAL	21	21	15	14	20

- Report the number of program graduates from off campus over the last five years.

Program	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CIS - BB	14	8	4	4	
CIS -BS	4	3	9	15	15
TOTAL	18	11	13	19	15

- Evaluate overall “program graduates” trends within the program.
Given the sample size, combined with the small variances in the results, there is not statistically significant trend in graduate numbers over the past 5 years. The number of graduates has varied significantly over the past 5 years, with no discernable trend or trend-line in the results.

- How does the program address “program graduates” trends within the program (general) and how will the program address “program graduates” trends reported (specific).

Generally, the Program Faculty review the courses being offered each semester to ensure that courses within The Program are in line with current technology. The Program Faculty regularly review the course pre-requisites, to ensure that students are adequately prepared for course when those course start. The Program regularly reviews Transfer Agreements from our Community College partners, to ensure that students coming from our Community college partners are fully prepared for the rigor of course from Program Faculty.

Specifically, The Program has had the admission criteria altered, in an attempt to ensure that incoming students are adequately prepared for the rigor of a CIS program. Starting in AY 2017-2018, students must have a 2.5 GPA for admittance to the CIS Program. The prior requirement was a 2.35 GPA for admission to the College of Business.

To ensure that students are adequately prepared in the pre-requisite courses, The Program has modified courses with pre-requisites of other courses in The Program to require a grade of “C” or better for admission into the subsequent course. Grades of “C-“ or “D” will still allow students to pass the course, but will not allow the student to take the subsequent course in the prescribed sequence. These changes will take effect in AY 2017-2018.

The Program Faculty is considering the mathematics requirement for CIS BS majors, as well. The current mathematics requirement is MATH 114/115. MATH 115 is College Algebra. The Program Faculty is considering a change by requiring calculus as the minimum math requirement for CIS BS majors. There is discussion among the Program Faculty concerning the benefits of the problem solving flexibility taught by calculus courses, versus the same skill proffered by algebra.

- **Six Year Graduation Rate**

- Report the percentage of students initially enrolled in the program who either graduates from the program itself or from another FSU program over the past five years.

A large portion of the students enrolled in The Program start at our Community College partners. Without the inclusion of this data, no analysis of graduating trend is meaningful for the CIS Program. Ferris State University does not provide data at the program level for the six year graduation rate of students within The Program. No reporting of such data is possible for this APR.

- Evaluate overall “six year graduation rate” trends within the program.

A large portion of the students enrolled in The Program start at our Community College partners. Without the inclusion of this data, no analysis of graduating trend is meaningful for the CIS Program. Ferris State University does not provide data at the program level for the six year graduation rate of students within The Program. No evaluation of such data is possible for this APR.

- How does the program address “six year graduation rate” trends within the program (general) and how will the program address “six year graduation rate” trends reported (specific).

A large portion of the students enrolled in The Program start at our Community College partners. Without the inclusion of this data, no analysis of graduating trend is meaningful for the CIS Program. Ferris State University does not provide data at the program level for the “six year graduation rate” of students within The Program. The Program Faculty have modified courses and adjusted The Program’s course of study to make The Program more appealing to the current generation of students. These changes are not in response to “retention” trends, as no data exists to allow the Program Faculty to establish or track such trends.

Generally, the Program Faculty review the courses being offered each semester to ensure that courses within The Program are in line with current technology. The Program Faculty regularly review the course pre-requisites, to ensure that students are adequately prepared for course when those course start. The Program regularly reviews Transfer Agreements from our Community College partners, to ensure that students coming from our Community college partners are fully prepared for the rigor of course from Program Faculty.

Specifically, The Program has had the admission criteria altered, in an attempt to ensure that incoming students are adequately prepared for the rigor of a CIS program. Starting in AY 2017-2018, students must have a 2.5 GPA for admittance to the CIS Program. The prior requirement was a 2.35 GPA for admission to the College of Business.

To ensure that students are adequately prepared in the pre-requisite courses, The Program has modified courses with pre-requisites of other courses in The Program to require a grade of “C” or better for admission into the subsequent course. Grades of “C-“ or “D” will still allow students to pass the course, but will not allow the student to take the subsequent course in the prescribed sequence. These changes will take effect in AY 2017-2018.

The Program Faculty is considering the mathematics requirement for CIS BS majors, as well. The current mathematics requirement is MATH 114/115. MATH 115 is College Algebra. The Program Faculty is considering a change by requiring calculus as the minimum math requirement for CIS BS majors. There

are discussion among the Program Faculty concerning the benefits of the problem solving flexibility taught by calculus courses, versus the same skill proffered by algebra.

- **Graduate Average GPA**

- Report the average FSU GPA of program graduates over the past five years.

Program	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CIS - AAS	2.95	.00		.00	
CIS - BB	3.44	3.21	3.53	3.37	
CIS -BS	3.62	3.10	3.37	3.42	3.32
ACCT/CIS-BB	3.35				
ACCT/CIS-BS			.00		.00

- Evaluate overall “graduate average GPA” trends within the program.

The graduate average GPA for students earning the CIS BS dipped from 3.62 in AY 2011-2012 to 3.10 in AY 2012-2013. The graduate average GPA for students earning the CIS BS has oscillated within the band from 3.32 to 3.42 since that time. There is no clear trend in the changes in the graduate average GPA for students earning the CIS BS. Satisfaction with The Program’s interns and graduates has remained strong from employers of the graduates of The Program over this time.

Data from Ferris State University was not available regarding the GPA for AAS students for AY 2012-2013, 2013-2014, 2014-2015 or 2015-2016. Without such data, no trend analysis is possible. The collection of data on AAS students is difficult. Many of The Program’s AAS students are TIP students. TIP students often transferred to the CIS BS program, once the time/credits stipulated by TIP had been taken.

Ferris State University does not provide information the regarding the GPA for ACCT/CIS bachelor degree students for AY 2012-2013, 2013-2014, 2014-2015 or 2015-2016. . Without such data, no trend analysis is possible. No information was provided as to why the data was not available.

- How does the program address “graduate average GPA” trends within the program (general) and how will the program address “graduate average GPA” trends reported (specific).

A large portion of the students enrolled in The Program start at our Community College partners. Program Faculty regularly review the course offerings at our Community College partners to ensure that the course content provides students from The Program’s Community College partners with an adequate grounding in the topics need for success in The Program.

Generally, the Program Faculty review the courses being offered each semester to ensure that courses within The Program are in line with current technology. The Program Faculty regularly review the course pre-requisites, to ensure that students are adequately prepared for course when those course start. The Program regularly reviews Transfer Agreements from our Community College partners, to ensure that students coming from our Community college partners are fully prepared for the rigor of course from Program Faculty.

Specifically, The Program has had the admission criteria altered, in an attempt to ensure that incoming students are adequately prepared for the rigor of a CIS program. Starting in AY 2017-2018, students must have a 2.5 GPA for admittance to the CIS Program. The prior requirement was a 2.35 GPA for admission to the College of Business.

To ensure that students are adequately prepared in the pre-requisite courses, The Program has modified courses with pre-requisites of other courses in The Program to require a grade of “C” or better for admission into the subsequent course. Grades of “C-“ or “D” will still allow students to pass the course, but will not allow the student to take the subsequent course in the prescribed sequence. These changes will take effect in AY 2017-2018.

The Program Faculty is considering the mathematics requirement for CIS BS majors, as well. The current mathematics requirement is MATH 114/115. MATH 115 is College Algebra. The Program Faculty is considering a change by requiring calculus as the minimum math requirement for CIS BS majors. There are discussion among the Program Faculty concerning the benefits of the problem solving flexibility taught by calculus courses, versus the same skill proffered by algebra.

- **Graduate Average ACT**

- Report the average ACT of newly enrolled students into the program over the last five years.

Program	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CIS - AAS	0	0		0	
CIS - BB	24	21	0		
CIS -BS	0	20	21	23	22
ACCT/CIS-BB	24				
ACCT/CIS-BS			0		0

College of Business requirement is 19. Our average is 21 , 22.

- Report the average ACT of program graduates for the last five years. Evaluate overall “graduate average ACT” trends within the program including a comparison between average ACT at enrollment and average ACT of students graduating from the program.

Data provided by the university does not link to ACT scores of graduating students. No information is available to answer this question.

- How does the program address “graduate average ACT” trends within the program (general) and how will the program address “graduate average ACT” trends reported (specific).

Data provided by the university does not link to ACT scores of graduating students. The answer to this question (provided below) is based on the goal of the Program Faculty of ensuring that graduates of The Program are capable of processing, and receive, valuable, current and relevant instruction in pertinent technologies.

A large portion of the students enrolled in The Program start at our Community College partners. Program Faculty regularly review the course offerings at our Community College partners to ensure that the course content provides students from The Program’s Community College partners with an adequate grounding in the topics need for success in The Program.

Generally, the Program Faculty review the courses being offered each semester to ensure that courses within The Program are in line with current technology. The Program Faculty regularly review the course pre-requisites, to ensure that students are adequately prepared for course when those course start. The Program regularly reviews Transfer Agreements from our Community College partners, to ensure that students coming from our Community college partners are fully prepared for the rigor of course from Program Faculty.

Specifically, The Program has had the admission criteria altered, in an attempt to ensure that incoming students are adequately prepared for the rigor of a CIS program. Starting in AY 2017-2018, students must have a 2.5 GPA for admittance to the CIS Program. The prior requirement was a 2.35 GPA for admission to the College of Business.

To ensure that students are adequately prepared in the pre-requisite courses, The Program has modified courses with pre-requisites of other courses in The Program to require a grade of “C” or better for admission into the subsequent course. Grades of “C-“ or “D” will still allow students to pass the course, but will not allow the student to take the subsequent course in the prescribed sequence. These changes will take effect in AY 2017-2018.

The Program Faculty is considering the mathematics requirement for CIS BS majors, as well. The current mathematics requirement is MATH 114/115. MATH 115 is College Algebra. The Program Faculty is considering a change by requiring calculus as the minimum math requirement for CIS BS majors. There are discussion among the Program Faculty concerning the benefits of the problem

solving flexibility taught by calculus courses, versus the same skill proffered by algebra.

- **State and National Examinations**

- Report the percentage of program graduates who pass state or national certification or licensure examinations.
N/A
- Report the national average pass rates and compare program graduate pass rates to the national average.
N/A
- Evaluate overall “state and national examinations” trends within the program.
N/A
- How does the program address “state and national examinations” trends within the program (general) and how will the program address “state and national examinations” trends reported (specific)?
N/A

1G. Program Value beyond Productivity and Enrollment Numbers

[Return TOC](#)

- **Program Value beyond Enrollment Numbers**

- Highlight the positive impacts the program has on the department, college, and university that extends beyond enrollment, student credit hour, and other ‘hard’ measures of the program success.

The nature of the CIS discipline is such that as students gain a mastery of CIS skills, CIS students must also be able to communicate CIS concepts and work with non-technical individuals to achieve common goals. To these ends, the CIS program has a long history of collaborating with other disciplines and external entities on projects of concern to the university, community and society as a whole. This collaborative process results in the development of software to benefit university organizations and external non-profit organizations.

Additionally, students from all disciplines involved in our interdisciplinary projects participate in conferences and symposia relative to the projects being undertaken. By creating an environment where students from different disciplines must work together towards a common goal, the CIS program participates in a process that moves the learning process from the classroom to real world. This grounding in real-world skills allows students from all the disciplines involved to develop a pattern of achievement and success that gives them confidence to as they transition from the university to the outside world.

The Program also provides computer skills that are shared by CIS students with fellow students, roommates and family members. These computer skills include

issues of computer security. The sharing of computer skills leads to a general increase in the computer skill base of the community.

- **Highlight the positive impacts the program has on the community and other external stakeholders.**

By having the CIS students work collaboratively with other disciplines within the university on real world projects, the students become active participants in the solution to help solve real world problems. This is best exemplified by way of a recent project undertaken by the CIS capstone students for the benefit of the Coalition Against Slavery (CAS). In the process of developing a website for CAS, the students experienced the following:

- They collaborated with students from the Social Work and Event Planning programs.
- They worked with representatives from the CAS to develop a website to inform the public on human trafficking and slavery.
- They performed a public evaluation of their web site at a conference on human trafficking awareness.
- They worked with students from the Social Work and Event Planning programs at the conference on human trafficking awareness.
- They co-presented with their professor at the conference on human trafficking awareness.

As a result of the CIS students' community involvement, the course received an Academic Service Learning grant. Finally, the website developed by the CIS students may help free people from, or prevent people from becoming victims of, human trafficking and slavery.

1H. Program Flexibility and Access

[Return TOC](#)

- **Flexibility and Access**

- Report the number of offsite locations.

The Program offers courses leading to the CIS BS and Accountancy-CIS BS at 1 location each in Grand Rapids, Muskegon, & Traverse City.

- Report the online availability of program offerings.

Various Ferris State University General Education courses are offered online for off-campus students. Various College of Business Business Core courses are provided online, depending on student demand and the staffing availability of the CB program responsible for specific course offerings. ISYS 321, and ISYS 105 are frequently offered online. Other CIS program courses are available online as student demand and faculty availability dictate.

- Report options for evening or weekend classes.

Off-campus all FSU classes are offered in evening or on weekends. There are limited evening courses in The Program offered in the evenings. ISYS 431 and ISYS 489 are often offered on the weekend.

- Report options for accelerated program completion.

The Programs provides a 3-year completion plan for students.

- Report options for summer program offerings.

Student can take both General Education and Business core courses during the summer semester. The majority CIS core courses offered during summer are sections of for PROJ 320 Project Management and ISYS 321 Business Information Systems.

- Describe any multi entry points available for students entering the program.

Student may entry the program any time.

- Evaluate program trends related to “flexibility and access.”

The Program Faculty believe that The Program’s curriculum allows the flexibility for students to transfer into The Program at nearly any point in the student’s academic pursuit. Off-campus sites allow access for students that cannot afford to attend main campus.

- How does the program address “flexibility and access” within the program?

As the Program Faculty update and modernize The Program, an ever-present concern is to maintain currency with the community college who articulate with The Program. By reviewing the articulations with our community college partners, The Program can ensure that students have the smoothest possible transition from community college classes to courses in The Program.

The Program Faculty undertook the modernization of BUS 118, to allow for real-time, simultaneous tele-delivery of course content. With tele-delivery, onloine courses, and the presentation of off-campus courses by Program Faculty, and the CIS Program is one of the most flexible and accessible programs from Ferris. Flexible delivery makes The Program accessible through out community college articulation agreements with transfer guides to a large portion of the State of Michigan.

11. Visibility and Distinctiveness

[Return TOC](#)

- **Visibility and Distinctiveness**

- Highlight unique program features and benefits that provide a competitive advantage over competing programs.
 - Ferris State University's CIS program was recently rated 8th in the nation by Accredited Schools Online.
 - An internship is required of all CIS students. Students are encouraged to undertake multiple internships if possible in order to provide them with maximal experience and networking opportunities.
 - The CIS program at FSU places a strong emphasis on hands-on training. Every CIS class requires one or more of the following: hands-on assignments, projects and presentations.
 - The CIS program requires multiple courses in systems analysis design and implementation.
 - The CIS program maintains an active relationship with the CIS Advisory Board. In addition to meeting with the Advisory Board on an annual basis, we request written feedback from employers that evaluate the performance of our students during internships.
- Evaluate program policies and procedures designed to market and promote unique program features and benefits.
 1. Our internship program not only provides students valuable work experience, but also helps promote program with the participating companies.
 2. Required evaluations of our interns by companies demonstrated a 4.55 out of 5.0 level of readiness resulting from our hands on approach to learning and student involvement.
 3. Our CIS advisory board not only helps us to understand the needs of the companies that employ our graduates, but also allow us to promote new courses and changes to our existing curriculum to the business community.

- **Competitive Programs**

- Identify and describe competing programs.
 - Our primary competitors at the bachelor's degree level are Grand Valley State University, Western Michigan University, Oakland University, Wayne State University, Northern Michigan University, Saginaw Valley State University and Lake Superior State University. Among the universities listed, there are only minor differences between CIS degree program offered through Business Programs. Where a difference is apparent is with the

number of business courses required. We typically require a slightly larger number of business courses, as part of our Business Core, than required by other institutions. Example:

Northern Michigan University Core Business

ACT 230 Principles of Accounting I
ACT 240 Principles of Accounting II
FIN 351 Financial Management I
MGT 240 Organizational Behavior and Management
MGT 221 Business Law I: Legal Environment of Business
MGT 325 Operations Management
MGT 344 Managerial Communication
MKT 230 Introduction to Marketing
24 Credits

Ferris State University Core Business

ACCT 201 Princ. of Financial Accounting
ACCT 202 Princ. of Managerial Accounting
BLAW 321 Contracts and Sales
FINC 322 Financial Management 1
ISYS 321 Business Information Systems
MKTG 321 Principles of Marketing
MGMT 301 Applied Management
MGMT 370 Quality-Operations Mgmt
BUSN 499 Integrating Experience
27 Credits

- Evaluate competing program's features, benefits, or other modes of operation that represent a competitive advantage over FSU's program.
 1. There appears to be no significant differences to the core CIS courses between universities. However, larger institutions typically do offer more elective courses. It is not clear however that a larger number of elective CIS courses affords a competitive advantage.
 2. Many community colleges offer some introductory courses at lower tuition rates; this affects our enrollment at the associate degree level and the bachelor's level in the freshman and junior years.

- What features, benefits, or other areas of competitive advantage can be emulated from competing programs that would improve the program at FSU?

More elective options. However, this cannot be achieved without more faculty

- Evaluate program policies and procedures at FSU designed to benchmark competitor programs.

Ferris State University tracks the number of students that are accepted into the CIS program vs. the number that actually enroll. This gives an indication of the competitiveness of our program vs. other institutions. This assumes that all students accepted eventually go into CIS or IS programs and not a different major altogether.

- Outline specific plans for program improvement based on analysis of competing programs.
 1. Making prospective students aware of courses that can be taken in the CS, CIT, ISI and engineering programs that can count as electives toward a CIS degree could increase the programs appeal. It would give the appearance of a bigger program due to the additional options available.
 2. Additional articulation agreements and 2:2/3:1 degree programs with the community colleges could boost our enrolment at the junior and senior levels.

- **Preeminent Program**

- Identify and describe the preeminent program in the country similar to the program at FSU.

New Jersey Institute of Technology: "Newark, N.J.; The University's multidisciplinary curriculum and computing-intensive approach to education provides the technological proficiency, business know-how and leadership skills that future CEOs and entrepreneurs will need to succeed. With an enrollment of over 11,400 undergraduate and graduate students, NJIT offers small-campus intimacy with the resources of a major public research university." NJIT Website

- Evaluate how the preeminent program in the country may have risen to that level.

NJIT's program's success is based on following core strategic priorities:

1. Students – To support and increase the number of high-achieving students who graduate.
 2. Learning – To provide a challenging, hands-on and relevant curriculum.
 3. Scholarly Research – A commitment to national and international preeminence and industry engagement. (New Jersey Innovation Institute)
 4. Community – To engage locally, regionally and globally.
 5. Investments – To fund a complete spectrum of resources including human capital and physical infrastructure.
- What is the preeminent program in the country doing that the program at FSU could emulate to make program improvements?

NJIT differs from FSU in three key areas:

- Students – Support and increase the number of high-achieving students who graduate.
- Scholarly Research – Commit faculty and finances to the goal of achieving national and international preeminence in research and industry engagement.
- Investments – Fund a complete spectrum of resources including human capital and physical infrastructure.

In order to emulate NJIT, FSU would need to implement the following changes:

- Students - Increase the number of high-achieving students by raising our admission standards to selective or highly selective.
 - Scholarly Research – FSU would need to place more emphasis on and commit funds to research.
 - Investments – FSU would need update its facilities to accommodate current and future technology. In addition, FSU would need to recruit new faculty with specialties in areas currently not represented by current faculty.
- What would the program at FSU have to do in order to become the preeminent program in the country within ten years?
 1. Begin a \$100,000,000 capital campaign to fund The Program, so that The Program could function by drawing only on the interest on the capital raised..
 2. Build a new IT/CIS facility to accommodate current and future technologies.
 3. Hire world class faculty to conduct research.
 4. Retain a top-notch PR firm to elevate FSU's image to national/international status.

Section 2

Program Evaluation

2A. Demand

[Return TOC](#)

- Why do students enrolled in the program choose FSU?
 - Being a regional university, many students choose CIS program at FSU do to proximity to home.
 - Articulation agreements and 2:2/3:1 programs with community colleges allow students to take many common core, business core and CIS courses at lower cost, then transfer to FSU to complete the degree.
 - FSU's CIS program's high graduate employment rate makes the CIS BS attractive to students seeking a career in CIS.
 - FSU's CIS program's 8th rating in the nation makes it attractive to students both in and outside of the region.

- Would students enrolled in the program choose the program at FSU if they had to do it over again?

Information not available.

- Would students enrolled in the program recommend the program at FSU to others?

Information not available.

- Evaluate the projected market outlook for demand for program graduates.
 - The job outlook for our graduates is currently very good and expected to remain good through the mid-2020s. *(See the section on Employability of Graduates)*
- Would alumni choose the program at FSU if they had to do it over again?
 - 92% of graduates have indicated that most would choose the CIS program at FSU if they could start over again.
- Would alumni recommend the program at FSU to others?
 - 91% of graduates have indicated that most would recommend the CIS program at FSU.
- What do alumni say about the continued demand for program graduates?

- Anecdotal evidence from alumni working in companies that hire from FSU, and companies that attend the capstone presentations, indicate that the demand for FSU CIS graduates will remain high.
- What do faculty teaching within the program say about the continued demand for program graduates?
 - Faculty in the program concur with alumni that the demand for FSU CIS graduates will remain high.
- What do potential employers say about the continued demand for program graduates?
 - It is not possible for potential employers to comment about the demand for our graduates as they have no experience with them, and therefore cannot judge “continued demand” with the context of their business.
 - Potential employers, companies that already hire our graduates, indicate that the demand for FSU CIS graduates will remain high within their companies.
- What do advisory board members say about the continued demand for program graduates?
 - Advisory board members have indicated that demand from FSU CIS graduates will remain high within their companies.
- Evaluate overall “demand” trends within the program.
 - Trends within the program indicate a shift from the traditional programming, database and analysis courses, toward a curriculum that includes mobile applications, Human Computer Interaction (HCI) and Enterprise Resource Planning (ERP) systems.
- How does the program address “demand” trends within the program (general) and how will the program address “demand” trends reported (specific)?
 - The CIS faculty continually monitor trends in technology to modify existing courses and anticipate resource needs to adopt future technologies that will create new demands within the program.
 - The CIS program has responded to the trends by creating a new ERP course and updating the mobile applications course. Plans are underway for the creation of a new HCI course.

2B. Student Achievement

[Return TOC](#)

- Report the percentage of students who are members of a Registered Student Organization by year, for the past five years.

On-Campus

Program	2012	2013	2014	2015	2016
CIS – AAS, BS, and Acct/CIS students	78	92	90	97	80
Students in Registered Student Organizations	15	18	20	16	20
Percentage of Students in Registered Student Organizations	19%	19%	22%	16%	25%

- Report the percentage of students who are members of Student Government by year, for the past five years.

- **On-Campus**

Program	2012	2013	2014	2015	2016
CIS – AAS, BS, and Acct/CIS students	78	92	90	97	80
Students who are members of Student Government	1	1	2	1	3
Students who are members of Student Government	1%	1%	2%	1%	4%

- Report the percentage of students who are members of Honors Program by year, for the past five years.

Hard data on the percentage of CIS students who are members of the honors program has not been reported over the last five years. However, information obtained from the FSU Honors Program indicates that, in any given year, about 4% of CIS students are also honors students.

- Report the average number of hours a typical student in the program is engaged in paid employment.

Data on the average number of hours a typical student in the program is engaged in paid employment is not recorded. All though, all CIS students must undertake a paid internship requiring a minimum of 240 hours of work over the course of a semester.

- Highlight student achievement in research over the past five years.

Not relevant to our program.

- Highlight student honors and awards received over the past five years.

Student honors and awards are not recorded.

- Highlight student participation in community and other volunteer service.

See the section on *Program Value beyond Enrollment Numbers* for information.

- Evaluate program trends related to “student achievement.”

No program trends relative to “*student achievement*” have been observed.

- How does the program address “student achievement” trends within the program (general) and how will the program address “student achievement” trends reported (specific)?

No program trends relative to “*student achievement*” have been observed or reported.

2C. Employability of Graduates

[Return TOC](#)

- **Employment Post-Graduation**

- Report the number and percentage of program graduates employed in their field of study one year post-graduation.
 - Of those who responded to the Graduate Follow Up Survey for the last three years, 100% of graduates were employed in their field or continuing their education.
- Report the number and percentage of program graduates employed full time in their field of study overall.

- Of those who responded to the Graduate Follow Up Survey for the last three years, 100% of graduates were employed in their field or continuing their education.
- Report the number and percentage of program graduates employed part time in their field of study overall.
 - Of those who responded to the Graduate Follow Up Survey for the last three years, 70 graduates, 72% of graduates, were employed in their field or continuing their education.
- Report the number and percentage of program graduates employed outside of their field of study one year post-graduation.
 - Information not available.
- Report the number and percentage of program graduates employed outside their field of study overall.
 - Of those who responded to the Graduate Follow Up Survey for the last three years, 14 graduates, 14% of graduates, were employed outside their field.
- Report the number and percentage of program graduates accepted to graduate school one-year post graduation.
 - No data for this category exists for The Program.
- Report the number and percentage of program graduates accepted to graduate school overall.

Of those who responded to the Graduate Follow Up Survey for the last three years, 28 graduates, 30% of graduates, were accepted to graduate school overall.

- Report the average yearly salary for program graduates who have graduated from the program within the last three years.
 - Of those who responded to the Graduate Follow Up Survey for the last three years, the average annual salary was \$55,770.
- Evaluate program trends related to “employment post-graduation.”
 - Graduates of the program experienced a 100% employment rate after graduation. Given the ongoing shortage of professionals in the field this trend can be expected to continue. (See Appendix C)

- Graduates of the program enjoyed increased average salaries over the last three years with a 2015 average of \$60,307. Given the ongoing shortage of professionals in the field this trend can be expected to continue. (See Appendix C)
- How does the program address “employment post-graduation” trends within the program (general) and how will the program address “employment post-graduation” trends reported (specific)?
 - Our department is engaged in a continuing process of updating our courses and curriculum to meet the demands of changing technology and the needs of employers.
- **Stakeholder Perceptions of the Employability of Graduates**
 - Report alumni perceptions of the program’s ability to prepare graduates for a career in their field of study.
 - Of those who responded, employers rated our CIS students an overall 4.55 out of 5.0, with 1 being poor and 5 being exceptional, across 9 criteria for success. Those 9 criteria consisted of: Ability to Learn, Reading/Writing/Computation Skills, Listening & Oral Communication Skills, Creative Thinking & Problem Solving Skills, Professional and Career Development Skills, interpersonal & Teamwork Skills, Organizational Effectiveness Skills, Basic Work Habits and Character Attributes.
 - Report advisory board perceptions of the program’s ability to prepare graduates for a career in their field of study.
 - The advisory board perceptions mirrored those of the employers, see the question below. This is expected given the advisory board is made up of our graduates’ employers.
 - The advisory board expressed the need for HCI and SAP courses for our graduates. Also, they expressed the need to upgrade our mobile applications course.
 - Report employer perceptions of the program/s ability to prepare graduates for a career in their field of study.
 - Of those who responded, employers rated our CIS students an overall 4.55 out of 5.0, with 1 being poor and 5 being exceptional, across 9 criteria for success. Those 9 criteria consisted of: Ability to Learn, Reading/Writing/Computation Skills, Listening & Oral Communication Skills, Creative Thinking & Problem Solving Skills, Professional and Career Development Skills, interpersonal & Teamwork Skills,

Organizational Effectiveness Skills, Basic Work Habits and Character Attributes.

- Employers expressed the need for HCI and SAP courses for our graduates. Also, they expressed the need to upgrade our mobile applications course.
- Report program faculty perceptions of the program’s ability to prepare graduates for a career in their field of study.
 - In general, the faculty agree that our graduates are well prepared for their career. However, there is the realization that some course need to be updated and new courses added. See the last two questions for more details
- Evaluate career assistance opportunities available to students.
- The program employs several methods for career assistance.
 1. The AITP RSO regularly invites employers to campus to discuss opportunities within their companies.
 2. Employers regularly send the AITP RSO announcements of job openings.
 3. Employers are invited to attend the capstone presentations where future graduates and employers can make first contact.
 4. The COB internship program allows employers to gain experience with students and often results in job offers.
 5. On campus internship and job fairs offer future graduates a change to learn about opportunities in CIS.
- Evaluate trends related to “Stakeholder Perceptions of the Employability of Graduates.”
- Employers expressed the need for HCI and SAP courses for our graduates. Also, they expressed the need to upgrade our mobile applications course. The need for these courses and changes has increased over the past few years.
- How does the program address “Stakeholder Perceptions of the Employability of Graduates” trends within the program (general) and how will the program address “Stakeholder Perceptions of the Employability of Graduates” trends reported (specific)?
 - In general, we respond by evaluating the trends against trends in technology and our current resources. Those areas where we have the resources to address those trends, we implement specific changes in the program such and updating courses and additional courses.

2D. Faculty Composition and Engagement

[Return TOC](#)

- Organization

- Report the number of tenure-line or tenured faculty teaching within the program.

2016-2017 – Total tenure/tenure-line = 9

Dr. Andy Suhy-Tenure (35th year), Richard Hewer-Tenure (35th year), Clyde Hardman-Tenure (33rd year), Warner Myntti-Tenure (33rd year), Dr. Amy Buse-Tenure (22nd year), Dr. Jimmie Joseph-Tenure track (5th year), Dr. Felix Bollou-Tenure track (3rd year), Dr. Hira Herrington-Tenure track (2nd year), & Dr. Njenga Kinuthia-Tenure Track (1st year)

2017-2018 – Total tenure/tenure-line = 8

Dr. Andy Suhy-Tenure (36th year), Richard Hewer-Tenure (36th year), Dr. Amy Buse-Tenure (23rd year), Dr. Jimmie Joseph-Tenure (6th year), Dr. Felix Bollou-Tenure track (4th year), Dr. Hira Herrington-Tenure track (3rd year), Dr. Njenga Kinuthia-Tenure Track (2nd year), & Dr. Mohamad Alzoubi – (1st year)

- Report the number of tenure-line or tenured faculty teaching the majority of their load on the Big Rapids campus.

For the past 5 years, all tenure-line Program Faculty have taught the majority of their load on the Big Rapids campus.

- Report the number of tenure-line or tenured faculty teaching the majority of their load in off-campus locations.

For the past 5 years, no tenure-line Program Faculty have taught the majority of their load off-campus.

- Report the number of tenure-line or tenured faculty teaching the majority of their load fully online.

For the past 5 years, no tenure-line Program Faculty have taught the majority of their load fully online.

- Report the number of full-time temporary faculty teaching the majority of their load in off-campus locations.

For the past 5 years, no full-time temporary Program Faculty have taught the majority of their load off-campus.

- Report the number of full-time temporary faculty teaching the majority of their load fully online.

For the past 5 years, no full-time temporary Program Faculty have taught the majority of their load online.

- Report the number of adjunct faculty teaching within the program.

Total 7 adjunct faculty -

Faculty Load	Fall 14'	Spring 15'	Fall 15'	Spring 16'	Fall 16'	Spring 17'
Barbara Renne	.5	.5				
John Herrick	1.0	1.0	1.0	1.0	.5	.5
Trudy Borst	.75	.5	.75	.75	.75	.75
Maggie Brown	.25	1.0	.5	1.0	1.0	1.0
Vicky Deur	.5	.25	.25	.25	.5	.25
Scott Goethals	.75	.75	.25	.25	.25	.25
Carolyn Blake		.5		.5	.5	.5
Total FTE	3.75	4.5	2.50	3.75	3.5	3.25

- Report the number of adjunct faculty teaching the majority of their load on the Big Rapids campus.

Faculty Load	Fall 14'	Spring 15'	Fall 15'	Spring 16'	Fall 16'	Spring 17'
Barbara Renne	.5	.5				
John Herrick	.5	1.0	.5	1.0	.25	.5
Trudy Borst	.75	.5	.75	.75	.75	.75
Maggie Brown	.25	1.0	.5	.75	.75	1.0
Vicky Deur	.5	.25	.25			
Scott Goethals						
Carolyn Blake						
Total FTE	2.5	3.25	2.0	2.5	1.75	2.25

- Report the number of adjunct faculty teaching the majority of their load in off-campus locations.

Faculty Load	Fall 14'	Spring 15'	Fall 15'	Spring 16'	Fall 16'	Spring 17'
Barbara Renne						
John Herrick	.5		.5		.25	
Maggie Brown					.25	
Vicky Deur						
Scott Goethals	.25	.25	.25	.25	.25	.25
Carolyn Blake		.5		.5	.5	.5
Total FTE	.75	.75	.75	.75	1.25	.75

- Report the number of adjunct faculty teaching the majority of their load fully online.

Faculty Load	Fall 14'	Spring 15'	Fall 15'	Spring 16'	Fall 16'	Spring 17'
Barbara Renne						
John Herrick						
Maggie Brown				.25		
Vicky Deur			.25	.25	.5	.25

Scott Goethals	.5	.5				
Carolyn Blake						
Total FTE	.5	.5	.25	.5	.5	.25

- Evaluate the efficiency and effectiveness of the current structure.

The current structure relies heavily of temporary faculty to provide courses for The Program. The Program has 8 tenure or tenure-track faculty. One Faculty member is on loan to the administration, so that the courses are being covered by 7 active tenured or tenure-track faculty members.

Over the past 6 terms, temporary faculty have averaged 4.5 FTE per semester. As such, more than 1/3 of the FTE teaching load is being covered by non-tenured or non-tenure tack faculty. The Program has been fortunate to have very high quality temporary to rely on to cover courses within The Program.

Temporary faculty provide a beneficial and necessary life-line to cover courses within The Program. Temporary faculty do not, however, need to actively participate in the faculty functions of The Program. Temporary faculty do not advise students. Temporary faculty do not participate in college or university committees. Temporary faculty do not act as faculty advisors to RSOs. Finally, temporary faculty do not need to take a full load, reducing the predictability of teaching assignments.

- Evaluate positive aspects of the current structure.

The current structure provides quality teaching to our students. The current number of temporary faculty provides flexibility in covering courses. The current tenured and tenure-track faculty possess a wide range of skills and backgrounds, allowing The Program to teach a variety of courses.

- Evaluate opportunities for improving the current structure.

The Program needs to hire additional tenure-track faculty. A at greater than 50% of the teaching load, the College of Business accrediting bodies will not permit us to long go with more than 1/3 of our teaching coming form non-tenured/non-tenure track faculty.

An additional area which needs addressed is the issue of coverage depth. The Program needs additional faculty with skills in existing teaching areas, so that faculty can have backup in case a faculty member is unable to teach a given course in a semester due to scheduling conflict.

- **Curriculum Vitae**

- Report the name, highest degree earned, and average semester load for all tenure-line and tenured faculty.

Faculty	Highest Degree Earned	Average Semester Load
Richard Hewer	MBA	1.0 FTE
Dr. Andy Suhy	PHD	1.0 FTE
Clyde Hardman	MBA	1.33 FTE
Warner Myntti	MBA, MIS	1.0 FTE
Dr. Jimmie Joseph	PhD	1.0 FTE
Dr. Felix Bollou	PhD	1.0 FTE
Dr. Hira Herrington	PhD	1.0 FTE
Dr. Njenga Kinuthia	PhD	1.0 FTE

- Report the name, highest degree earned, and average semester load for all adjunct faculty.

Faculty	Highest Degree Earned	Average Semester Load
Trudy Borst	MISM	.75 FTE
John Herrich	MISM	1.0 FTE
Margaret Brown	MS	1.0 FTE
Vicky Deur	PhD	.5 FTE
Scott Goethals	MS	.5 FTE
Dave Robinson	PhD	.25 FTE
Carolyn Blake	MS	.5 FTE

- Link all copies of vitae for all tenure-line or tenured faculty.

- Link to copies of vitae for all adjunct faculty.



- Service**

- Highlight achievements in program, department, college, and university service for all tenure-line and tenured faculty over the last three years.

Dr. Felix Bollou

Program Service

1) Redesign of the database courses: I was redesign our two database courses. I have spent countless hours researching textbooks and material that can help me in redesigning these courses. The objective for the first course is bringing the

ISYS371 (SQL only) to a 200 level course with an emphasis on the introduction of the foundations of relational database and cover all the notions of a RDMS.

The second course (ISYS470) previously database administration course will now become a 300 level course that will introduce the advanced notions of RDBMS, advanced Transact SQL, Notions of Administration and Business Intelligence and Analytics.

2) Design of a new Enterprise Integration and Business Process Design course. I have designed the new course that is scheduled to start in the Fall of 2017.

College and University

1) I briefly served on the college website design committee.

2) I am currently serving on the college curriculum committee.

3) I also served on the university's Director for Online education hiring committee.

4) College of Business Website Committee (2016)

5) College of Business Curriculum committee (still serving)

6) University Director of Online Education search committee (2017)

7) Data Analysis for DWF students for the FCTL (ongoing)

8) Representing CIT/CIS at the dawgs days (2017)

9) Designing and supporting administrative and technical work for SAP®'s adoption at Ferris State University (ongoing).

10) Supported 1 independent study student for SAD (2016)

11) Supported 2 independent study students for SAD (2017)

12) Supported 3 independent study students for ERP (2017)

13) Advising 18 CIS students

Professor Clyde Hardman

Program Service

1) Coordinated class schedules, faculty schedules, adjunct faculty schedules.

2) Chaired hiring search committees for 3 tenure track faculty positions

3) Chaired hiring search committees for 2 adjunct faculty positions

4) Cover student advising for 4 off-campus sites. (150-200 students over last 3 years)

5) Served and Chaired 3 tenure track committees.

6) Coordinated all Off-campus sites as far as class schedule, articulations, faculty schedule, etc.

7) Coordinated the CIS updating proposal that touch each course in Major, and general education courses.

College and University

1) Served as Program Coordinator for both CIS and CIT programs.

2) Served as DTRC chair for AFIS department

Dr. Hira Herrington

Program Service

- 1) Job Search Committees: CIS position Spring 2016, 1st CIT position Spring 2017, 2nd CIT position Spring 2017
- 2) Curriculum:
 - Fall/Spring 2016 - Work on program APR
 - Spring 2016 - Update TracDat
 - Summer 2016 - Update content and/or descriptions and/or outcomes for the following courses: ISYS 110, ISYS 216, ISYS 316, ISYS 221, ISYS 288, ISYS 431 & ISYS 489

Course Updates

- 3) ISYS 110 - This course was redesigned to provide a better understanding of the fundamentals of computer systems, computer programming and software development. Python was adopted as the programming language and procedural programming as the programming paradigm. Students gain experience in programming and software development by writing software to solve simple real world problems.
- 4) ISYS 221 - This course was redesigned and updated to provide students a more current and comprehensive background in mobile application development. Android was adopted as the platform for the development, installation and testing of native applications across a range of mobile devices. Students gain experience in the design, coding, installation and debugging software through the development of applications and games which are pushed to, and tested on, mobile devices.
- 5) ISYS 288 - This course was redesigned and updated to provide students a more current and comprehensive background in web site development. The course focuses on Web application development techniques using HTML, CCS and JavaScript. Students gain experience in client side and server side scripting, and data base interfacing in PHP, by developing software utilizing Computer Human Interaction, information security, and session management to provide a real world context to their projects.
- 6) ISYS 216 – This course was updated to incorporate the latest changes and advances in the Java language and software development. Depreciated language constructs were replaced and an introduction to classes and object-oriented programming added. Students gain experience in Java and software development by writing applications to solve simple real world problems.
- 7) ISYS 316 - This course was updated to incorporate the latest changes and advances in the Java language and software development. The course focus was changed to include graphical user interfaces and advanced Java features to develop event-driven, client/server, Windows programs utilizing database access via network connections.

- 8) ISYS 431 – This course was redesigned to be research based and prepare students for ISYS 489 by requiring them to complete a detailed specification for the software to be developed in the capstone. The first half of the course focuses on advanced system analysis techniques. The second half of the semester involves interacting with a real client to develop a system specification to be used in the capstone. The Scrum framework for software development is also introduced in the second half of the course.
- 9) ISYS 489 – This course was redesigned to closely comply with the principles of the Scrum framework for software development. Students are required to develop the software designed in ISYS 431 using two week cycles for deliverables. Frequent contact with the client is required during each cycle. Soft skills are reinforced through documentation, reports and a public presentation of the completed software product.
- 10) Updated personal training and service
- 11) Training
- 12) The 7th Annual Scholarship of Teaching and Learning (SoTL) Academy (Spring 2016)
- 13) Course Design Institute (Summer 2016)
- 14) MyDegree Training (Summer 2016)
- 15) Advisor Training (Summer 2016)
- 16) Advising Retreat (Summer 2017)
- 17) Scrum Master Certification (Spring 2016)
- 18) Academic Service Learning Grant (Spring 2017)
- 19) SAP Training (Summer 2017 to Present)
- 20) Conferences Attended & Presentations
- 21) Presenter, Conference on Human Trafficking (Spring 2017)
- 22) Lighthouse Summer Symposium (Summer 2017)
- 23) University, College, Program and Community Service
- 24) Outstanding Service – Assessment Committee (2016 – 2017)
- 25) Outstanding Service – Committee on inclusion (2016 – 2017)
- 26) Certificate of Appreciation – 2017 Conference on Human Trafficking Awareness
- 27) Letter of Appreciation – Coalition Against Slavery (2017)
- 28) Cleanup and update of CIS/CIT TrackDat (Fall / Spring 2017)
- 29) Arranged for Guest Speakers to visit campus for ISYS 489 (Spring 2017)
- 30) Organized campus visit of IT Resources to discuss internships for CIS/CIT/ISIN and DSGN students. (Summer 2017)
- 31) Highlight achievements in program, department, college, and university service for all adjunct faculty over the last three years.
- 32) Research

33) Highlight achievements in research for all tenure-line and tenured faculty over the last three years.

Dr. Felix Bolou

I have kept my partnership with the Institute for Technology and Innovation at Ryerson University Toronto, which keeps me very active in my scholarly work. I am currently working on 2 research papers of my own and have contributed in revising 12 papers over the past 3 years.

Dr. Hira Herrington

September 2016 – Guest lecture on preliminary research in Cyber Security for Children to Event Planning and Social Work courses.

February 2017 – Gave presentation on preliminary research in Cyber Security for Children at COB monthly meeting.

April 2017 – Complete current research & give conference presentation on Cyber Security for Children.

Dr. Jimmie L. Joseph

Program Service

- Coordinated class schedules, faculty schedules, adjunct faculty schedules.
- Member hiring search committees for 3 tenure track faculty positions
- Member hiring search committees for 2 adjunct faculty positions
- Cover student advising for 2 off-campus sites. (100-150 students)
- Served as Faculty Representative on the Scriber hiring Committee
- AITP Co-Advisor for 2 years
- AITP Faculty Advisor for 1 year
- Chair of the COB Diversity Committee for 2 years
- Member COB Diversity Committee for 4 years
- Attended the AAC&U Boston 2016 Conference
-

College and University

- University General Education Committee for 3 years
-
- Served as DTRC chair for AFIS department

- Highlight achievements in research for all adjunct faculty over the last three years.

Maggie Brown

Microsoft Office Certification Research in relation to our Microsoft Office Proficiency test

Microsoft Work & Excel 2016 certification

- **Continuing Education**

- Highlight achievements in training, development and other continuing education by all tenure-line and tenured faculty over the last three years.

Dr. Felix Bollou

- 1) I took the Course Design Institute course last summer,
- 2) I took the Integrated Course Design course in the Spring 2016; both offered by the FCTL.
- 3) Currently enrolled in the Microsoft SQL server management course leading to Microsoft Associate Certification next summer.

Dr. Hira Herrington

January 2014 – Inducted into Delta Upsilon Iota honor society.

February 2015 – Completed PhD

March 2016 – Certified Scrum Master (CSM)

Conference Attendance:

The 7th Annual Scholarship of Teaching and Learning (SoTL) A...

The University of Findlay March 16, 2016 - March 17, 2016

2017 - Course Design Institute, Ferris State University, May 2016

Dr. Jimmie Joseph

- MyDegree Training 2013
- Advisor Workshop 2013
- Ferris Summer Course Design Institute 2015
- Certified Scrum Master Training, March 2016
- Attended the AAC&U Boston 2016 Conference
- Free The Textbook (Fall 2016)
- Free The Textbook (2017)
- Attended CCN Summer Working Connections for NSF funded training.
- Passed 6 ICCP Certification exams
- Became a Certified Scrum Master

▪

- Highlight achievements in training, development, and other continuing education by all adjunct faculty over the last three years.

Trudy Borst

Had the Real Estate continuing Ed. Also, went through Tax Preparer and Quickbooks to work at Lake Michigan Accounting--if that is anything you can use.

Maggie Brown

- FSU Seminar Instructor Training
 - Time Management (2015)
 - My Degree
 - Goal Setting
 - Diversity
 - MapWorks
 - Learning Preferences

- Financial Awareness

- Ferris Connect/Blackboard Collaboration Tools (2015)
- Tegrity Workshop (2015)
- Concur Training (2016)
- Course Design Institute (2016)
- Integrated Course Design Workshop (2016)
- Research Assignment Design (2016)
- Blackboard Collaborate Training (2017)
- Ongoing: Organize, prepare and revise (as needed) course materials; Ensure content level of course materials in exams has been covered in class

John Herrick

- I have had an online seminar training on Blackboard Collaborate and how to incorporate this into class work.
- I have had a seminar on Google documents, google forms, google drive, google survey and how to incorporate these into the classroom.

Scott Goethals

- Microsoft Ignite Conference each year
- GRRC conference in Grand Rapids

- **Stakeholder Perceptions of the Quality and Composition of Faculty**

- Evaluate current students' perception of the composition and quality of program faculty.

The perception of the program faculty by the current students in the CIS program is rather good. In fact, 38 % strongly agree and 43% of them agree that the faculty delivers understandable and quality instructions, care about their learning and master the subjects they teach. We must note that 14% expressed no opinion in this category of our inquiry especially with regards to their preparation for the job market.

- Evaluate overall student evaluation trends within the program.

The perception of current students of the CIS program is a 50/50 split. More precisely about 53% find the program excellent or good, when the rest suggest that the program is rather average or poor. This calls for concern. From the

survey conducted this year, only 11% of the current CIS students find the program excellent, 42% say that the program good but 32% of them suggest that the program is just average.

- How does the program address student evaluation trends within the program (general) and how will the program address student evaluation trends reported (specific)?

The program needs to better inform the students about the possible outcomes of the program and make certain that students understand the different majors and the prospective jobs for which The Program is providing preparation.

- Evaluate alumnus perceptions of the composition and quality of program faculty.

The CIS alumna seem to be very happy with the education received at Ferris State University. Alumna responding overwhelmingly praise the faculty and The Program. Over 94% of alumna responded that they are satisfied or very satisfied in the CIS field, and would recommend it. Better yet, over 70% claim to be using the skills acquired while attending Ferris State University. The responding alumna expressed a deep sense of belonging to the programming profession. Alumna even suggested that they were ready to come back to Ferris State University, if they had to.

- Evaluate overall alumnus evaluation trends within the program.

The CIS alumna seem to be very happy with the education they received at Ferris State University. Alumna responding overwhelmingly praise the faculty and the program. Over 94% % of alumna responded that they are satisfied or very satisfied in the CIS field, and would recommend it. Better yet, over 70% claim to be using the skills they acquired while attending Ferris State University. The responding alumna expressed deep a sense of belonging to the programming. They even suggested that they were ready to come back to Ferris State University, if they had to.

- How does the program address alumnus evaluation trends within the program (general) and how will the program address alumnus evaluation trends reported (specific)?

Alumna remarks and suggestions are taken very seriously by the CIS program; because the Program Faculty consider the alumna to be our best ambassadors outside the institution. Moreover, the general sense that alumna are very satisfied by the current delivery of the program is a sign that The Program is moving in the right direction.

- Evaluate advisory board members' perceptions of the composition and quality of program faculty.

The CIS Advisory Board perceives the CIS program as very strong and delivering up to the expectation of market needs. Overall, the CIS Advisory Board rated both the composition and quality of the program faculty 4.6 on a scale of 1 to 5.

- Evaluate overall advisory board evaluation trends within the program.

Overall, the CIS Advisory Board noted that the effort of The Program to be current and follow the trends of industry is commendable.

The CIS Advisory Board members encourage the CIS program to keep adapting its courses to today's fast changing Information Systems environment

- How does the program address advisory board evaluation trends within the program (general) and how will the program address advisory board evaluation trends reported (specific)?

The CIS program has always valued the feedback, remarks and comments from the CIS Advisory Board. Whenever feasible, suggestions from the advisory board have been implemented.

- **Program Policies and Procedures**

- How does the program provide opportunity and encouragement for program faculty to fully engage in teaching improvement activities, research, and service?

The Program encourages faculty to take advantage of teaching improvement activities, research and service. The program coordinator routinely circulates information on teaching improvement training being held by the Faculty Center for Teaching and Learning (FACTL). Weekly/bi-weekly meetings of the Program Faculty are used as an additional platform to disseminate information on training for teaching improvement. Examples of the recent training attended by Program Faculty include Free The Textbook, and the Ferris Course Design Institute.

Program Faculty are encouraged to seek industry recognized certification. The study for and taking of certification exams helps maintain currently of skills. The Program encourages the COB Administration to provide support skills training and certification.

The Program supports research among Program Faculty by supporting the case of faculty who apply for a sabbatical. Sabbaticals dedicated to strengthening the knowledge and skills of Program Faculty in sub-areas of the CIS discipline are reported back to the Program Faculty when the sabbatical ends and the faculty member reports on the sabbatical activities.

Service to The Program, the AFIS Department, the COB, and Ferris State University are encouraged and supported by The Program. Tenure-track Program Faculty are guided in selecting committees which will enhance the

university culture and community. Service is one of the criteria for consideration in granting tenure. Service is one of the criteria for consideration in supporting a Program Faculty member's application for sabbatical. These considerations are communicated to Program Faculty through mentoring and discussions at the weekly/Bi-weekly program meetings.

- How does the program provide opportunity and encouragement for program faculty to fully engage in student advising?

Formal student advising is performed by tenured and tenure-track faculty. Formal advising responsibilities are not assigned to a new faculty member until the Program Faculty member's 2nd year at Ferris State University. During the first year for a tenure-track faculty member, the faculty member receives mentoring from a senior member of the Program Faculty. That mentoring includes guidance on advising.

Near the end of the first year as a tenure-track faculty member, new Program Faculty are encouraged to attend MyDegree and advisor training. The training is usually offered by the FCTL in the spring and summer.

Faculty are also encouraged to become engaged with the RSO for The Program: AITP. Active involvement with AITP allows for informal advising opportunities. Field trips allow for unscripted interactions with students, covering a wide variety of topics. Interactions between Program Faculty and industrial professionals provide a template for interactions between the students and perspective employers.

- Evaluate the minimum qualifications for a tenure-line faculty within the program.

The minimum requirements for a tenure-line faculty applicant to be considered for a position on the Program Faculty is a Ph.D. in Information Systems or a related field (from an accredited university), and 5 years of experience in the field of Information Systems. The Program Faculty review the minimum qualifications prior to each position posting.

The Program Faculty feel that the importance of experience working in the field can not be over emphasized. The business curriculum requires that faculty be able to impart to students usable information of normative behavior in the workplace. The Program Faculty feel that purely theoretical knowledge of Information Systems is not sufficient to building a well-grounded undergraduate student. With no practical work experience designing, creating, implementing or supporting systems and the systems' users, a faculty member would not be able to convey to students what user-CIS professional interactions actually comprise.

- Evaluate the minimum qualifications for a full time temporary faculty within the program.

This position type does not exist within the COB.

- Evaluate the minimum qualifications for an adjunct faculty within the program.

The minimum requirements for an adjunct faculty applicant to be considered for a position on the Program Faculty is a master's degree in Information Systems or a related field (from an accredited university), and 5 years of experience in the field of Information Systems. The Program Faculty review the minimum qualifications prior to each position posting.

The Program Faculty feel that the importance of experience working in the field can not be over emphasized. The business curriculum requires that faculty be able to impart to students usable information of normative behavior in the workplace. The Program Faculty feel that purely theoretical knowledge of Information Systems is not sufficient to building a well-grounded undergraduate student. With no practical work experience designing, creating, implementing or supporting systems and the systems' users, a faculty member would not be able to convey to students what user-CIS professional interactions actually comprise.

- **Hiring and Retention**

- Evaluate the program's ability to hire and retain quality faculty at all levels.

In the last 5 years The Program has hired 4 tenure-track faculty. The first of those new hires to be considered for tenure was granted tenure. The Program has been able to find talented, qualified and motivated individual to fill vacancies generated through retirements and service to other parts of the university. Tenure track faculty within The Program are making generally good progress towards tenure at Ferris State University.

The success of tenure-track members of the CIS Program Faculty to achieve tenure is due in large part to the mentoring of new faculty by tenured Program Faculty. Notable for exceptional quality of mentoring has been Dr. Amy Buse. Dr. Buse is currently supporting the university in advancing the quality of MyDegree. Dr. Buse has continued dot mentor tenure-track faculty within The Program.

In addition to being provided with strong mentoring, new faculty are encouraged to participate in training from FCTL. The FCTL provides the entire Ferris State

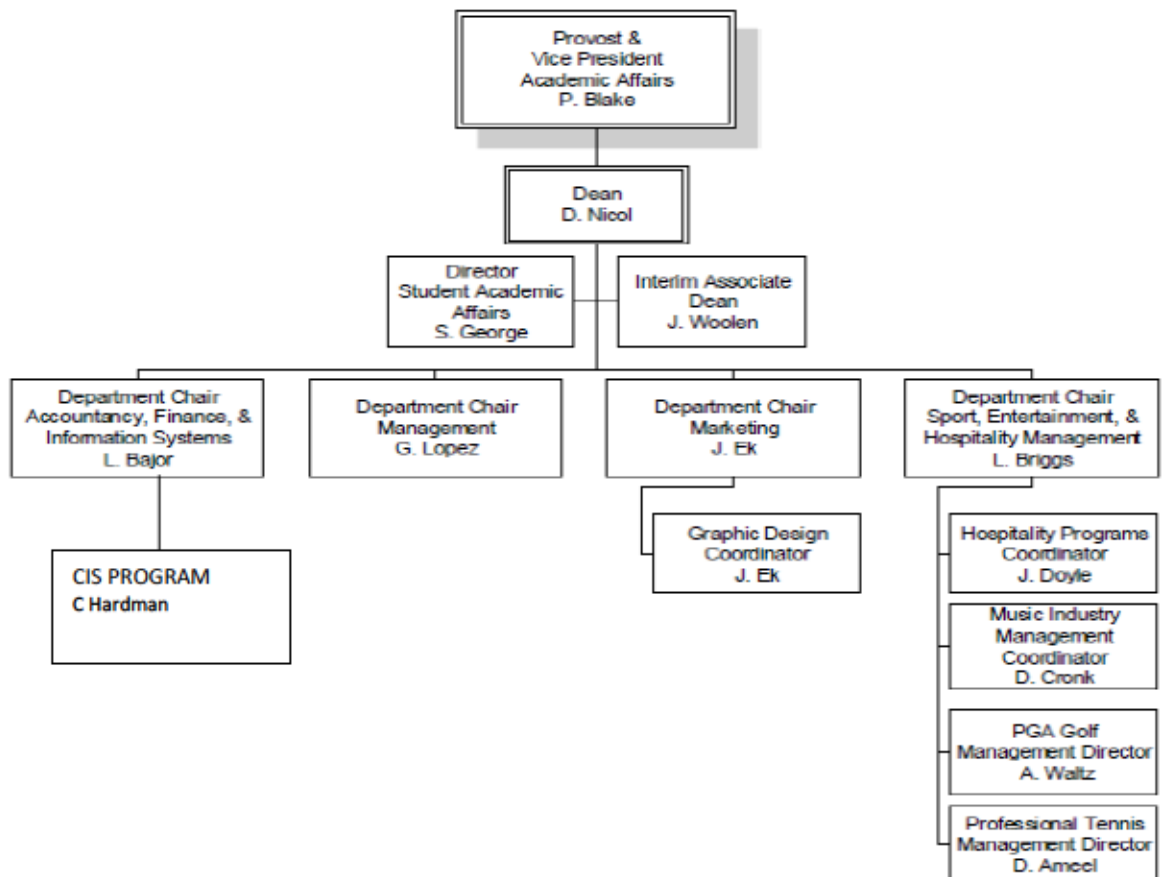
University faculty with world class training in teaching philosophies, methodologies and techniques. FCTL training provides Program Faculty with perspectives on teaching not directly tied to Information Systems issues.

2E. Program Administration and Support

[Return TOC](#)

- **Administration**
 - Include a copy of the organizational chart by college including the program's place within the overall unit structure.

COLLEGE OF BUSINESS



- Identify administrative positions by title that have program oversight up to and including the Dean of the college.

Dr. David Nicol, College of Business Dean
Dr. Larry Bajor, Accounting/Finance/Information System Department Chair
Clyde Hardman, CIS/CIT Program Coordinator

- Report the name, highest degree earned, and administrative experience for all administrative positions with program oversight.

Dr. David Nicol, PHD Management
18 years in business administration (from startups to \$billion corporations), including 10 years as a CEO
6 years as Department Chair of a graduate program
1 year as Associate Dean of a Business School
16 years as Dean of the College of Business

Dr. Larry Bajor, PHD Accounting
AFIS Department chair – 2+ years
Accounting Professor –
Labor Relations Representative @ Amax Coal Company – 2 years

Clyde Hardman, MBA
Associate Professor – 33 years
Coordinator of CIS/CIT programs for 18+ years.

- Evaluate the efficiency and effectiveness of the current structure.

The current administrative structure provides strong and steady leadership to The Program. Lines of communication are clear. All personnel in the administrative structure maintain an open-door policy which allows for easy access by Program Faculty.

The current administrative structure does not make maximum use of the skills of the administrators in the COB. The current administrative structure suffers from a lack of predictable budgeting from the university. It is not possible for the current administrative structure establish a 3-5 planning horizon, when budgets from university sources are based solely on yearly funding.

- Evaluate the positive aspects of the current structure.

Through many years in the COB, the administrators have acquired a deep understanding of the issues affecting education at Ferris State University. All of the administrators in this structure have industry experience to complement their academic experience. All of the administrators in the administrative

structure understand the skills needed by graduates of The Program. All of the administrators in the administrative structure strongly and consistently support efforts to implement measures that will improve the education and preparation of students in The Program.

- Evaluate opportunities for improving the current structure.

The addition of an Associate Dean for Academic/Student Affairs within the College of Business would allow the Dean to focus on fundraising and organizational issues. The benefits would be greater visibility for the College of Business and increased resources to support student achievement within the COB.

A funding planning horizon of 2-5 year would allow the administrative structure of the COB to effectively play resource utilization. Such a planning horizon would also permit the administration of the COB to determine long-term equipment replacement/upgrade/refresh cycles. Better long-term equipment planning would reduce costs to the COB and to Ferris State University.

- How does the program provide opportunities for program faculty and staff to discuss the program's place within the current structure with administrators who have program oversight?

Formal interaction between Program Faculty and the administrative structure are accomplished via regularly scheduled meetings. Program Faculty meet with The Program's program coordinator at a minimum of weekly/bi-weekly. The program coordinator attends the monthly AFIS Department meetings. The AFIS Department Chair attends the monthly AFIS meetings. The program coordinator, AFIS Department Chair and COB Associate Dean and COB Dean attend the monthly COB meetings. Twice per AY there are 2 COB meetings in a month.

Ad hoc interactions are frequent between Program Faculty and the administrative structure of the COP. All personnel in the administrative structure maintain an open-door policy which allows for easy access by Program Faculty. Program Faculty may freely schedule meetings with any member of the administrative structure, if a definite discussion time is desired.

- **Staff**

- Report the number of support staff (by title) assigned to the program.

Darlene Waring, Department Secretary

- Evaluate the efficiency and effectiveness of the current structure.

Ms. Waring's support of The Program is exemplary. The Program and Program Faculty could not function without her unwavering dedication to The Program, Program Faculty and students of the AFIS Department. Ms. Waring's efficiency and effectiveness are without parallel.

- Evaluate the positive aspects of the current structure.

The current support structure provides for timely and effective support of The Program, Program Faculty and students in The Program. Ms. Waring is a valuable repository of institutional knowledge regarding issues affecting The Program, Program Faculty, students in the program, and graduates of The Program. Ms. Waring maintains a pleasant and welcoming demeanor for all who need help or guidance within the Department.

- Evaluate opportunities for improving the current structure.

Given the number of programs within the AFIS Department, MS. Waring could likely use an assistant.

2F. Support Services

[Return TOC](#)

- FLITE
- Faculty Center for Teaching and Learning
- Tutoring Center
- Technology Assistance Center (TAC)
- Birkam Health Center
- Media Productions
- Institutional Research Board (IRB)
- Career Center
- Institutional Research and Testing
- University Advancement and Marketing (including web content)
- Diversity and Inclusion Office
- Educational Counseling and Disabilities Services
- Grounds and maintenance
- Other - please specify

2G. Facilities and Equipment

[Return TOC](#)

- **Space**
 - Provide a detailed accounting of all teaching space used by the program.
Business 130 - Classroom
 - Provide a detailed accounting of all laboratory space used by the program.
Business 104 – Computer Lab/Classroom

- Business 116 – Computer Lab/Classroom
- Business 118 – Computer Lab/Classroom
- Business 121 – Networking Lab/Classroom
- Provide a detailed accounting of all office and meeting space used by the program.
 - Business 348 – Hewer’s office
 - Business 330 – Suhy’s office
 - Business 328 – Buse’s Office
 - Business 326 – Myntti’s Office
 - Business 318 – Hardman’s office
 - IRC 229 – Kinuthia’s office
 - IRC 231 – Joseph’s office
 - IRC 229 – Herrington’s office
 - IRC 212M – Bollou’s office
 - IRC 221 – Herrich’s office (Adjunct)
 - IRC 222 – Borst’s office (Adjunct)
 - IRC 219 – Brown’s office (Adjunct)
- Provide a detailed accounting of all storage space used by the program.
 - None
- Provide a detailed accounting of all other space used by the program.
 - None
- Evaluate the adequacy of the space available for use by the program.

The office space for Program Faculty meets the current needs for most faculty. Dr. Herrington needs a higher credenza to accommodate a taller/larger monitor. The Program would benefit from dedicated storage space for equipment which must now be kept in Program Faculty offices when the equipment is not needed for a current lecture.

The program needs updated computer labs for teaching. BUS 118 was recently updated to specifications from Program Faculty. BUS 118 is functioning very well as a computer lab for CIS courses. BUS 118 is functioning well as a distance learning source for CIS courses. The upgrades to BUS 118 has increased demand for the resources of BUS 118 from COB programs other than CIS, as well as programs from colleges other than COB. BUS 118 is not oversubscribed.

The Program Faculty suggest that BUS 104 and BUS 116 be equipped with monitors in a manner similar to BUS 118. The upgrade from DLP projectors to televisions/monitors will vastly improve the usability of the upgraded classrooms. Once Bus 116 and/ or BUS 104 are upgraded, priority for scheduling those classrooms should reside with The Program.

BUS 118 was upgrade with cameras and microphones which make the room acceptable for tele-delivery of course content. The Program recommends that Ferris State University invest in an upgrade to at least one other room with capabilities equivalent to BUS 118 for course tele-delivery. Rooms Bus 116 and or BUS 130 would be good candidates for such an upgrade. After the upgrade in course tele-delivery capabilities to Bus 116 and or BUS 104, priority for scheduling those classrooms should reside with The Program.

- How does the program plan to address potential negative program impact as a result of the current state of space available for use by the program?

Program Faculty are currently working within the restrictions placed on course material presentation endemic to BUS 116 and Bus 104. Work rule restrictions limit changes that Program Faculty can make to the teaching space.

Program Faculty are currently awaiting a quote on the cost to install televisions/monitors in Bus 116. The Program will then seek forces of funding to upgrade the projector in BUS 116 to televisions/monitors.

What changes to the space available for use by the program would have a positive impact on program quality?

Upgrade the projector in BUS 116 and projectors in BUS 104 to televisions/monitors. Upgrade BUS 130 or a similar space to create a course tele-delivery environment. Provide The Program with priority scheduling in BUS 118 and the updated classrooms.

To enhance student programming access, a computer lab open extended hours would be helpful. Lab assistants for Bus 121 to enable students to use the computers in BUS 121 outside of class times would be helpful as well.

- **Computers**

- Provide a detailed accounting of the computers available for use in the classroom(s).
Business 104 – Computer Lab – 44 computer workstations
Business 116 – Computer Lab – 26 computer workstations
Business 118 – Computer Lab – 25 computer workstations
Business 121 – Networking Lab – 24 computer workstations
- Provide a detailed accounting of the computers available for use in faculty offices.

CIS faculty members have a personal Laptop computer available in their office. Currently we have 11 faculty, which includes full time adjuncts.

- Provide a detailed accounting of computer labs available for student use.

Computer labs (beyond classrooms) available for student use is BUS 105. This room is equipped with hardware and software sufficient for general business students. The computers in the BUS 105 lab are not sufficiently robust for CIS majors or minors. The Bus 105 lab is not open sufficiently long hours to support CIS majors and minors.

- Evaluate the adequacy of the computers (including software) used by the program.

The computers in Bus 121 are robust and adequate for their current use. The computers in BUS 121 were last upgraded in August of 2014. The computers in BUS 121 will need to be upgraded, but likely not replaced, within to 2 years.

The Program has no budget for software. As such, the Program Faculty has had to find freeware versions of the software for use in the labs and for use by students. Some of the software such as PHP, JavaScript, CSS andHTML5 require servers. The Program has no budget to purchase servers for use in courses using these programming languages.

ISYS 221 is the Mobile Apps development course. This course is using freeware versions of app development software. The paid versions have greater capabilities, but no funds exist to purchase the better version.

- How does the program plan to address potential negative program impact as a result of the current state of computers available for use by the program?

The Program will submit a request to refresh/upgrade the computers in BUS 121.

- What changes to the computers available for use by the program would have a positive impact on program quality?

- **Equipment**

- Provide a detailed accounting of the equipment available for use in the classroom(s).

Beyond computers and projectors (already addressed), the primary equipment available for use in classrooms used by Program Faculty are the student desks/workstations. The workstations/tables in BUS 121 were repurposed from other locations within Ferris State University in 2010. The workstations/tables in

BUS 1118 were replaced in AY 2015-2016, and are performing well. The workstations/tables in BUS 104 and BUS 116 are not sufficient for an adequate workstation for a student workstation using modern computer hardware. The long tables used by students in Bus 130 are not conducive to the group-team oriented work that needs to be done in that room.

- Provide a detailed accounting of the equipment available for use in the laboratory(s).

The Program does not employ laboratory workstations.

- Provide a detailed accounting of equipment available for student use.

The chairs and workstations used by students in classrooms supporting courses in The Program are generally acceptable. Desired improvements were noted above. The projectors in BUS 116 and BUS 104 need to be replaced with televisions/monitors.

- Evaluate the adequacy of the equipment used by the program.

The workstations/tables in BUS 121 were repurposed from other locations within Ferris State University in 2010. The workstations/tables are showing signs of disrepair and will need to be replaced within 2 years.

- How does the program plan to address potential negative program impact as a result of the current state of equipment available for use by the program?

The Program will be submitting requests to have the equipment in the affected areas updated/replaced.

- What changes to the equipment available for use by the program would have a positive impact on program quality?

Replacing the projectors in Bus 116 and BUS 104 would have a positive impact on the teaching environment in those locations. Upgrading/replacing the student workstations/tables in BUS 121 and BUS 130 would make those classrooms more amenable to the types of collaborative work which would allow Program Faculty to move the classroom experience up the scale of Bloom's Taxonomy. Adding tele-delivery capabilities to BUS 130 would facilitate the delivery of course content to remote locations.

Section 3

Perceptions of Overall Quality

[Return TOC](#)

- On a scale of 1 – 100 (with 100 representing the highest program quality achievable), rate the overall quality of the program.

The overall quality of The Program is 95.

- Summarize the reason(s) for the rating assigned.

Ferris State University's CIS program was recently rated 8th in the nation by Accredited Schools Online. The CIS Program of the College of Business of Ferris State University is rated #8 in the United States among all CIS Programs. This rating is not based on sister institutions. This rating is not based on institutions of a similar size, student body, entry GPA requirement, or funding level of the students or programs. The rating is among all CIS programs in the United States! Period.

- Outline recommended next steps to improve program quality.

Given the current rating of The Program and the Program Faculty, the teaching load and salary structure of the Program Faculty does not adequately reflect their value to the institution. Additional resources should be made available to recruit and retain faculty at the same level as the current Program Faculty. Further, resources should be made available to allow the current Program Faculty to reduce the number of preps from 6-8 per year to 2-3 per year.

Additionally, to maintain the quality of the Program Faculty resources should be made available for professional development (courses and certifications). Time should also be made available for professional development (course release), to that Program Faculty have the time to stay current and relevant in the fast paced and ever changing environment of Information Systems and Information Technology.

Dean's Comments: Computer Information Systems Program

Program Rating: 95

I believe the CIS program provides students with valuable preparation for a rewarding career. The faculty are dedicated to their field. Many recent faculty hires are bringing current/relevant workplace experience and knowledge to the learning experience. All faculty are committed to facilitating input from, and student interaction with, successful IS representatives of the workplace. All faculty are committed to providing a rigorous learning experience to equip our students for the workplace. Consequently, it is my impression that the program continues evolving in order to meet ever-changing market needs and expectations. Faculty are commended for their willingness to support their program by contributing to the procurement of SAP licensing for the first year.

Although I am confident that CIS is a high-quality program, I do believe it could benefit from a comprehensive strategic planning effort to address both long-term and short-term program needs as specified in the APR. With 41% (55 students) of CIS program enrollment off-campus, it will require a different approach from the past to ensure sustainability of this valued program. The fact that some of the same faculty support the CIT program (97 total students; 59% off-campus) further illustrates the need for strategic planning of program delivery and resource utilization.

Dr. Jim Woolen, CCP
Interim Associate Dean
College of Business

Tuesday, August 3, 2017

Section 4

Implementation of Findings

[Return TOC](#)

- How does the APR review process fit with the program's overall continuous quality improvement plans?

Given the speed of technological change, the Program Faculty must constantly evaluate the CIS program by scanning the environment and ensuring a good fit between The Program and the IS environment. Given the 4/4 load of the Program Faculty, with many faculty teaching 8 preps per academic year, time is a precious commodity. The APR review process negatively impacted The Program and the Program Faculty during the entire period of AY 2016-2017. Critical environment reviews and forward looking planning that is the norm for the Program Faculty was not able to be performed in favor of the rearward facing review of The Program necessitated by the APR process. The consensus of the Program Faculty is that the APR process had a negative impact on The Program's overall quality improvement planning.

The CIS faculty is rather lean, with no slack for providing course release to faculty to complete assignments beyond those expected in maintaining the ongoing quality of the program. Neither The Program's Committee Chair, nor any of the other Program Faculty, received release time to work on the APR. First year faculty were required to divert time from learning about Ferris State University and the student body of the College of Business, and use that time to create, distribute and analyze surveys. Tenure track faculty had to divert attention from the creation or maintenance of tenure packets, and work on APR review related information gathering.

Given the normal activities of the Program Faculty in keeping The Program relevant to industry, the Program Faculty cannot find time to fit the APR review process in The Program's quality improvement plans. It is hoped that this process will not repeat for some time allowing the Program Faculty to try to make up for the lost productivity necessitated by the APR review process during AY 2016-2017.

- How will program review results be communicated to program stakeholders?

The results will be shared with the CIS Advisory Board at the first CIS Advisory Board meeting after the results of the APR are finalized. The results will be shared with the COB Administration after the results of the APR are finalized. The results will not be shared with students in The Program.

- What are program plans for addressing opportunities for improvement uncovered as a result of the program review process?

The Program Faculty will seek Ferris State University resources to address the issues uncovered during the APR process. The Program Faculty will seek to resume the request for resources interrupted by the APR process.

- What are program plans for promoting program strengths and accomplishments to stakeholders uncovered as a result of the program review process?

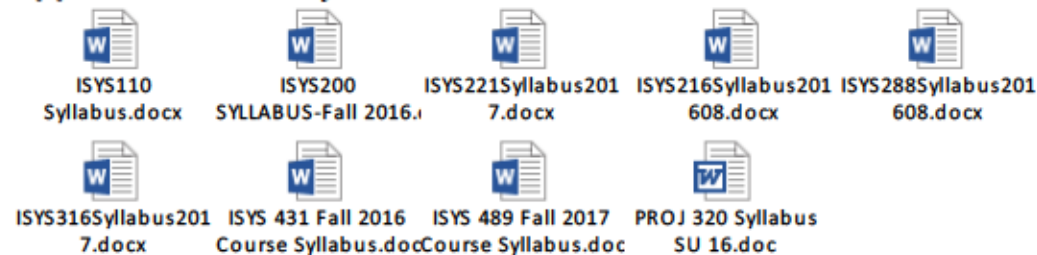
No resources are available from Ferris State University to promote individual programs. The Program Faculty does not foresee additional resources becoming available to promote The Program in the foreseeable future. The Program Faculty see no means to bring to fruition any plans to promote The Program, and will therefore direct the resources of The Faculty to maintain a quality and relevant program.

Section 5

Appendices

[Return TOC](#)

Appendix A: *Course syllabi*



Appendices B: *CIS Program Strategic Plan*



Appendix C: *Labor Market Analysis*

Introduction

The following summarizes the job outlook for our graduates. This paper is broken down into national and state prospects for graduates in technology fields. In a nutshell, the outlook for our grads is very promising. With growth in technology jobs expected through the mid-2020s.

Research

According to **United States Dept. of Labor**:

Employment of computer and information technology occupations is projected to grow 12 percent from 2014 to 2024, faster than the average for all occupations. These occupations are expected to add about 488,500 new jobs, from about 3.9 million jobs to about 4.4 million jobs from 2014 to 2024. In part, the growth is due to a greater emphasis on cloud computing, the collection and storage of big data. More everyday items are becoming connected to the Internet in what is commonly referred to as the “Internet of things,” and the continued demand for mobile computing.

The median annual wage for computer and information technology occupations was \$81,430 in May 2015, which was higher than the median annual wage for all occupations of \$36,200.

Source: <http://www.bls.gov/ooh/computer-and-information-technology/home.htm>

United States Dept. of Labor

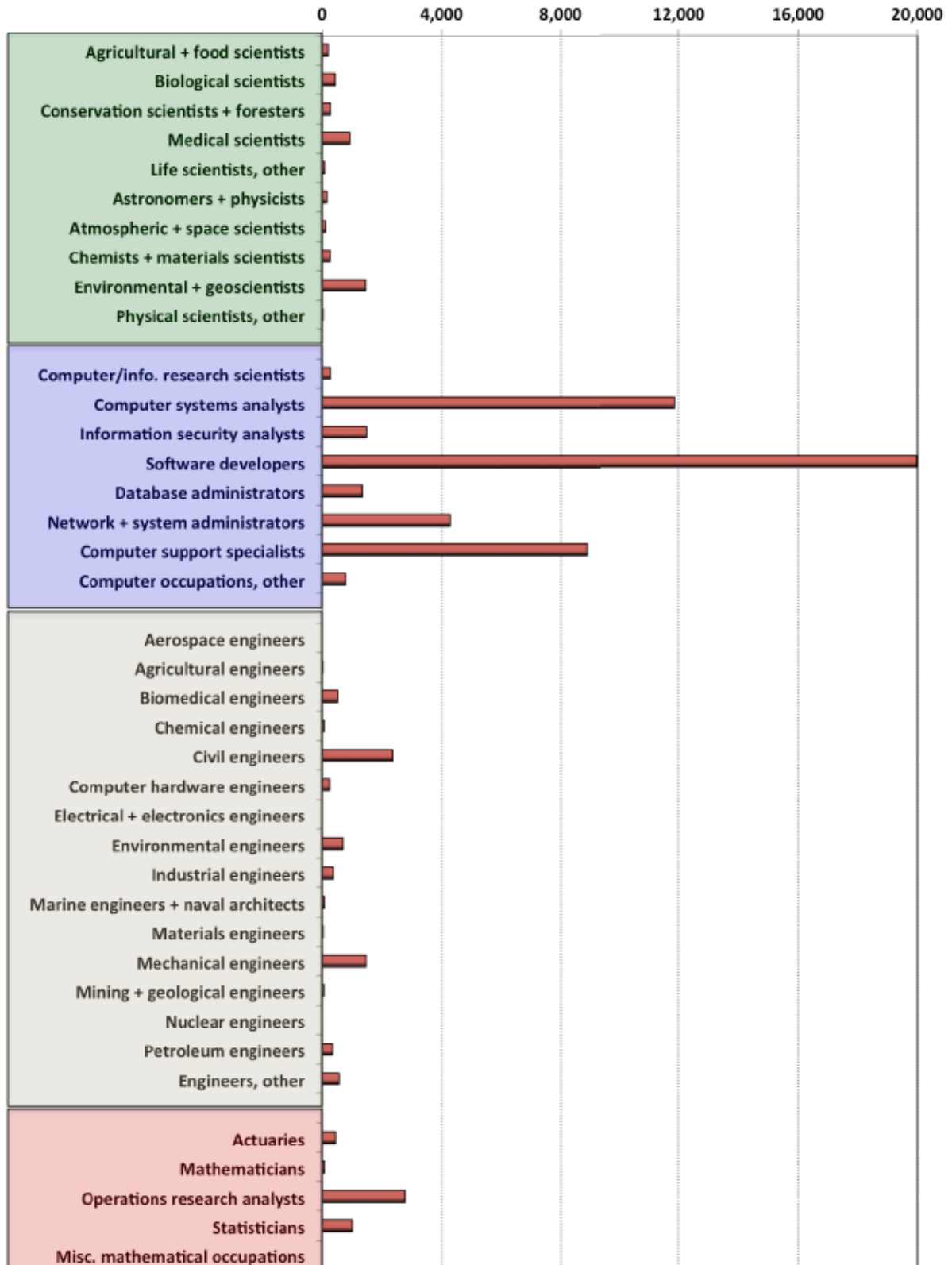
Publish Date: Thursday, December 17, 2015

Joel C. Adams of the ACM provides the follow summary:

As you can see from the chart below, the US-BLS (U.S. Bureau of Labor Statistics) predicts the four STEM careers with the most growth will all be in computing.

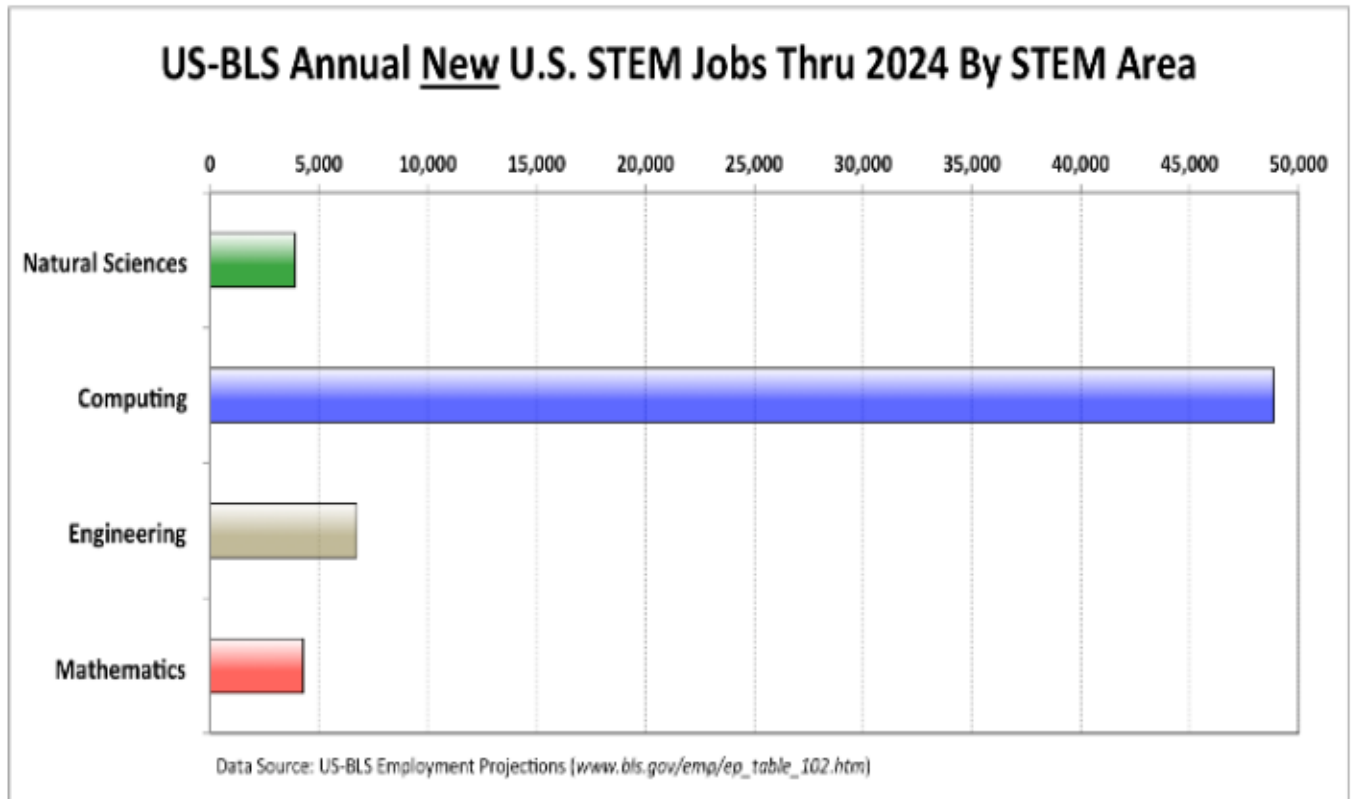
More precisely, the US-BLS predicts that each year between now and 2024, there will be **nearly 20,000 new software development jobs, nearly 12,000 new systems analysts jobs, over 8,000 new computing support jobs, and over 4,000 network/system administration jobs**. No other STEM area is expected to generate even 4,000 *New Jobs* per year.

US-BLS Annual New U.S. STEM Jobs Thru 2024



Data Source: US-BLS Employment Projections (www.bls.gov/emp/ep_table_102.htm)

The top four careers with the most opportunities are: *software development, systems analysts, computing support, and network/systems administration*. Aggregating the US-BLS projections to see the number of jobs per year in each STEM area, we get the following chart:



By Joel C. Adams, ACM April 30, 2016

<http://cacm.acm.org/blogs/blog-cacm/201784-us-bls-computing-employment-outlook-remains-bright/fulltext>

From the State of Michigan Government web site comes the following job outlook broken down by occupation; updated February 2015:

Computer programmers	Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.	Number of People in the Field: 15950	Total Average Annual Openings: 350	Median Annual Salary: \$64,300.00
-----------------------------	--	--------------------------------------	------------------------------------	-----------------------------------

Illustrative Examples: Computer Programmer Aide; Mainframe Programmer; Systems Programmer

Occupation Title	Occupation Description	Job Outlook Data		
Computer Programmers, Non R&D	Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.	Number of People in the Field: No Information Available	Total Average Annual Openings: No Information Available	Median Annual Salary: No Information is Available

Illustrative Examples: Credit Negotiator; Escrow Representative; Factorer

Occupation Title	Occupation Description	Job Outlook Data		
Computer Programmers, R&D	These persons spend the majority of their time performing research and development activities relating to computer programming.	Number of People in the Field: No Information Available	Total Average Annual Openings: No Information Available	Median Annual Salary: No Information is Available

Illustrative Examples: Credit Negotiator; Escrow Representative; Factorer

Occupation Title	Occupation Description	Job Outlook Data		
Computer software engineers, applications	Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working	Number of People in the Field: 9755	Total Average Annual Openings: 274	Median Annual Salary: \$75,170.00

individually or coordinating database development as part of a team. Exclude "Computer Hardware Engineers" (172061).

Illustrative Examples: Applications Developer; Programmer Analyst; Software Designer

Computer systems analysts	Analyze science, engineering, business, and all other data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software. Exclude persons working primarily as "Engineers" (172011 through 172199), "Mathematicians" (152021), or "Scientists" (191011 through 193099). May supervise computer programmers.	Number of People in the Field:16166	Total Average Annual Openings: 249	Median Annual Salary: \$72,180.00
----------------------------------	--	-------------------------------------	------------------------------------	-----------------------------------

Illustrative Examples: Health Systems Computer Analyst; Data Processing Systems Project Planner; Information Systems Consultant

Occupation Title	Occupation Description	Job Outlook Data		
Computer Systems Analysts, Non R&D	Analyze data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations.	Number of People in the Field:No Information Available	Total Average Annual Openings: No Information Available	Median Annual Salary: No Information is Available

Illustrative Examples: Credit Negotiator; Escrow Representative; Factorer

Occupation Title	Occupation Description	Job Outlook Data		
Computer Systems Analysts, R&D	These persons spend the majority of their time performing research and development activities involving electronic data processing.	Number of People in the Field:No Information Available	Total Average Annual Openings: No Information Available	Median Annual Salary: No Information is Available

Illustrative Examples: Credit Negotiator; Escrow Representative; Factorer

Occupation Title	Occupation Description	Job Outlook Data		
Database administrators	Coordinate changes to computer databases, test and implement the database applying knowledge of database management systems. May plan, coordinate, and implement security measures to safeguard computer databases.	Number of People in the Field:2624	Total Average Annual Openings: 66	Median Annual Salary: \$61,490.00

Illustrative Examples: Automatic Data Processing Planner; Database Design Analyst; Database Security Administrator

Network and computer systems administrators	(LAN/WAN Administrator) Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. Maintain network hardware and software. Monitor network to ensure network availability to all system users and perform necessary maintenance to support network availability. May supervise other network support and client server specialists and plan, coordinate, and implement network security measures. Exclude "Computer Support Specialists" (151041).	Number of People in the Field:6892	Total Average Annual Openings: 187	Median Annual Salary: \$55,820.00
--	--	------------------------------------	------------------------------------	-----------------------------------

Illustrative Examples: Network Control Operator; Network Security Administrator

Occupation Title	Occupation Description	Job Outlook Data		
Network systems and data communications analysts	(Internet Developer, Webmaster) Analyze, design, test, and evaluate network systems, such as local area networks (LAN), wide area networks (WAN), Internet, intranet, and other data communications systems. Perform network modeling, analysis, and planning. Research and recommend network and data communications hardware and software. Include telecommunications specialists who deal with the interfacing of computer and communications equipment. May supervise computer programmers.	Number of People in the Field: 5397	Total Average Annual Openings: 221	Median Annual Salary: \$63,730.00
Illustrative Examples: Systems Integrator				

State of Michigan Government

http://www.michigan.gov/documents/nwlb/report_215444_7.html

From the Detroit Free Press comes the following excerpt from a 2015 article:

Specialized IT security companies are also booming, particularly in the Ann Arbor area, where tech companies Duo Security, Barracuda Networks and Arbor Networks are flourishing.

A manufacturing comeback helped us dig out of the Great Recession, but the hottest Michigan jobs are now concentrated in other sectors, including some openings for ethical computer hackers improving corporate cybersecurity.

In 2015, Michigan is expected to add 59,400 jobs, but only 10% of those new positions will come from factories, according to the University of Michigan's annual economic forecast.

Instead, most of the new jobs in Michigan are in rapidly growing areas, including nursing, software development and network security.

"Those are just red-hot," said Mike Finney, the chief economic adviser to Gov. Rick Snyder.

What's problematic, however, is that many of the hottest jobs are going unfilled because there are few candidates with the necessary skills to handle them. Even in positions that don't require an advanced degree, employers sometimes have a difficult time finding qualified candidates.

Detroit Free Press

<http://www.freep.com/story/money/business/michigan/2016/01/02/5-trends-watch-state-economy/78012668/>

<http://www.freep.com/story/money/business/michigan/2015/01/04/michigan-hot-jobs/21235493/>

Summary

The job outlook for our graduates is currently very good and expected to be good through the mid-2020s.

Appendix D: *Student Learning Outcomes at the Program Level*

Student Learning Outcomes at the Program Level

Program - Computer Information Systems (B.S.)

Mission Statement: To provide an outstanding, flexible, supportive learning environment for students prepari

Advisory Board/Committee Meetings: Once per year

Next FSU Academic Program Review: 2017-2018

Accreditor Body: COB-Accreditation Council for Business Schools and Programs

Accreditor Body - Academic Year of Next Review: 2017-2018

College: COB

Program Closed?: No

<i>Outcomes</i>	<i>Assessment Methods</i>	<i>Results</i>
OUTCOME 1 SYSTEMS DESIGN AND IMPLEMENTATION - Students will design and implement a system in accordance with designated system specifications within a Outcome Status: Active	Project/Model/Invention - Criterion for Success: AT LEAST 70% OF STUDENTS WILL EXHIBIT COMPETENCY IN THIS OUTCOME	Reporting Period: 2015 - 2016 Classification: Inconclusive Spring 2016: Data not collected (03/10/21)

Planned Year(s) of Assessment:

Learning

Start Date: 04/10/2013

OUTCOME 2 DATABASE -

Students will analyze user requirements and design, create, and manage a database

Outcome Status: Active

Planned Year(s) of Assessment:

Learning

Start Date: 04/10/2013

Project/Model/Invention -

Criterion for Success: AT LEAST 70% OF STUDENTS WILL EXHIBIT COMPETENCY IN THIS OUTCOME

Reporting Period: 2015 - 2016

Classification: Inconclusive
Spring 2016: Data not collected (03/10/2016)

Reporting Period: 1 - No Action Required

Classification: Criterion Met
72% of the students met this outcome. (10/10/2016)

OUTCOME 3 PROGRAMMING -

Students will design, develop, and test algorithms to meet user requirements

Project/Model/Invention -

Criterion for Success: AT LEAST 70% OF STUDENTS WILL EXHIBIT

Reporting Period: 2015 - 2016

Classification: Inconclusive

06/07/2017

Generated by TracDat® a product of Nuventive

<i>Outcomes</i>	<i>Assessment Methods</i>	<i>Results</i>
<p>requirements. Outcome Status: Active Planned Year(s) of Assessment: Learning Start Date: 04/10/2013</p>	<p>COMPETENCY IN THIS OUTCOME</p>	<p>Spring 2016: Data not collected (03/10/2016) Reporting Period: 2 - Pending Action Classification: Criterion Not Met 57% of the students will exhibit competence in this outcome. (10/13/2015)</p>
<p>OUTCOME 4 PROJECT MANAGEMENT - Students will use effectively the appropriate communication tools in the allocation, monitoring, and measurement of resources to achieve project objectives within a</p> <p>Outcome Status: Active Planned Year(s) of Assessment: Learning Start Date: 04/10/2013</p>	<p>Project/Model/Invention - Criterion for Success: AT LEAST 70% OF STUDENTS WILL EXHIBIT COMPETENCY IN THIS OUTCOME</p>	<p>Reporting Period: 2015 - 2016 Classification: Inconclusive Spring 2016: Data not collected (03/10/2016)</p>
<p>old Outcome A - Provide the business industry with technology support of business computer systems by designing, developing, implementing, training, and maintaining business applications.</p> <p>Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning Start Date: 09/02/2008 End Date: 01/02/2012</p>	<p>Case Studies/Problem-based Assignments - In ISYS 288, students will design a web-based application in a team setting, and in ISYS 489, students will develop, document and present.</p> <p>Criterion for Success: Upon completion of ISYS 489, students will perform the following tasks: (1) requirements analysis; (2) systems planning; (3) preliminary design; (4) detailed design; (5) systems resources maximization; (6) formulate systems implementation plan; (7) write systems manual/s.</p> <p>Upon completion of ISYS 489, students will perform the following tasks: (1) implement the system; (2) write program</p>	<p>Reporting Period: 1 - No Action Required Classification: Criterion Met see related document (Capstone Results : (06/19/2009) Curriculum Change: Does Not Require Related Documents: CIS ASSESSMENT 2009. '07.docx</p>

Outcomes	Assessment Methods	Results
	implementation follow-up; (6) develop techniques an analyst requires in selling the systems decision Related Documents: assessment_result_ISYS488 Fall 2009.doc	
old Outcome B - Use information systems approach to explore and create business solutions. Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning Start Date: 09/02/2008 End Date: 01/02/2012		
old Outcome C - Facilitate team work and leadership in management of information Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning Start Date: 09/02/2008 End Date: 01/02/2012		
old Outcome 1 Systems Design - Implement the systems design specifications formulated in the ISYS 288 & ISYS 330 and ISY 371 classes; Perform an implementation activity schedule that is compliant with project Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning Start Date: 04/02/2012	Project/Model/Invention - Criterion for Success: At least 70% of students will exhibit competency in this outcome.	Reporting Period: 1 - No Action Requi Classification: Criterion Met 74 % of the students met this outcome. (1
old outcome 2 Database -	Project/Model/Invention -	Reporting Period: 1 - No Action Requi

Outcomes	Assessment Methods	Results
<p>will be able to write Web programming codes: (input screens; output screens; DB access for Create/Read/Update and Delete) and conduct system integration with deployment and</p> <p>Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning</p>	<p>Criterion for Success: At least 70% of students will exhibit competency in this outcome.</p>	<p>Classification: Criterion Met 91 % of the students met this outcome. (1</p>
<p>old outcome 3 Programming - Students will be able to prepare testing scripts and its schedule; conduct detailed program testing</p> <p>Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning</p>	<p>Project/Model/Invention - Criterion for Success: At least 70% of students will exhibit competency in this outcome.</p>	<p>Reporting Period: 1 - No Action Requ Classification: Criterion Met 79% of the students met this outcome. (1</p>
<p>old outcome 4 System Implementation - Students will be able to plan and perform post implementation activities</p> <p>Outcome Status: No Longer an Outcome Planned Year(s) of Assessment: Learning</p>	<p>Test - Internally Developed - Pre/Post or Post - Test Criterion for Success: At least 70% of students will exhibit competency in this outcome.</p>	<p>Reporting Period: 1 - No Action Requ Classification: Criterion Met 79% of the students met this outcome. (0</p>

Appendix E: Program - Computer Information Systems (B.S.) - Curriculum Mapping Learning Outcomes at the Program Level

Program - Computer Information Systems (B.S.) - Curriculum Mapping

Legend: (A) - Program Assessment, (I) - Introduced, (M) - Mastery, (R) - Reinforced

Outcomes	ISY S 110	ISY S 200	ISY S 216	ISY S 316	ISY S 321	ISY S 325	ISY S 330	ISY S 371	ISY S 470	ISY S 489	ISY S 491	ISY S 221	ISY S 288	ISY S 431
OUTCOME 1 SYSTEMS DESIGN AND IMPLEMENTATION					R	R	R			A, M, R		R	R	M
OUTCOME 2 DATABASE		I						R	A	A, M, R				M
OUTCOME 3 PROGRAMMING	I		R	A						A, M, R		R	R	
OUTCOME 4 PROJECT MANAGEMENT							I			A, M, R				M

Appendix E: Employer Evaluation of CIS Interns



Employer Evaluations of Interns

Appendix F: Alumni Survey results



CIS Alumni.pdf

Appendix G: CIS Advisory Board Survey



CIS Advisory
Committee.pdf

Appendix H: *CIS Advisory Board Summary of Comments*



2012CIS.CITAdvisoryBoardMinutes.pdf



2013CIS.CITAdvisoryBoardMinutesTracD:



2014Minutes.pdf



Minutes2016.pdf



MinutesAndBreakoutSessions2015.pdf

Appendix I: *Acronyms and Abbreviations*



APR Acronyms and
abbreviations.pdf

Signature page

[Return TOC](#)

Date _____

Professor Clyde Hardman, Emeritus
Associate Professor
CIS & CIT Program Coordinator

Date _____

Dr. Jimmie L. Joseph. MCITP, A+, Security+, Network+, Certified Scrum Master, ICCP CDMP, ICCP ISA
Assistant Professor of CIS and CIT
CIS & CIT Program Coordinator

Date _____

Dr. Lawrence H. Bajor Ph.D.
Department Chair
Accounting Finance and Information Systems

Date _____

Dr. Jim Woolen, CCP
Associate Dean College of Business
ACBSP Accreditation Co-Champion
Assessment Facilitator



SignaturePage.pdf

Signature page

[Return TOC](#)



Date 8/15/2017

Professor Clyde Anderson, Emeritus
Associate Professor
CIS & CIT Program Coordinator

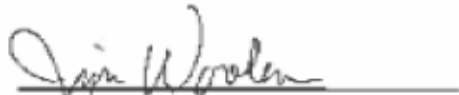


Date 8/15/2017

Dr. Jimmie L. Joseph, MCITP, A+, Security+, Network+, Certified Scrum Master, ICCP CDMP, ICCP ISA
Assistant Professor of CIS and CIT
CIS & CIT Program Coordinator

Date _____

Dr. Lawrence H. Bajor Ph.D.
Department Chair
Accounting Finance and Information Systems



Date 8/15/2017

Dr. Jim Woolen, CCP
Associate Dean College of Business
ACBSP Accreditation Co-Champion
Assessment Facilitator