ANNUAL PROGRAM ASSESSMENT FORM

Name of Program: Software Development

Report prepared by: Michael Knupp

1) **Please list the degree offerings:**
   a. BS Software Development (Current)
   b. BS Software Development / MBA (Current)
   c. BS Integrated Technology – SD (Pre Fall 2023)
   d. BS Integrated Technology – SD / MBA (Pre Fall 2023)
   e. BS Software Development (legacy ~ pre Integrated Technology)

2) **Progression /Graduation update (NECHE 8)**

Retention (dating back to 2015; within specific degrees identified above. Raw percentages are reported and are not a weighted average based on cohort count.)

1st to 2nd Year Retention Average = 81 % [100, 100, 67, 60, 100, 83, 57]
1st to 3rd Year Retention Average = 73 % [100, 100, 67, 20, 100, 50]
1st to 4th Year Retention Average = 78 % [100, 100, 67, 20, 100]

Graduation Rates (2014 cohort only. Few students in the program and Integrated Technology program came after 2016.)

4-year graduation rate = 33 %
5-year graduation rate = 33 %
6-year graduation rate = 67 %

3) **Program's Mission Statement (NECHE standard 1):**

The mission statement of the program is the mission statement for the School of Technology and Innovation (SoTI). The SoTI mission statement aligns to the mission statement of Husson University and the College of Business by emphasizing student engagement, experiential learning, excellence of teaching, and contribution to a greater community.

"The School of Technology and Innovation provides high quality, student centric, experiential education, delivered by engaged faculty in partnership with the community, to prepare students for professional careers and leadership positions while enhancing regional economic development."

4) **Faculty updates (NECHE Standard 6)**

New Faculty

- Sedore, Alexander: Adjunct faculty in graduate IT business analytics courses
- Wyatt, Craig: Adjunct faculty in undergraduate software development courses

Grants

- Team effort to secure a $500K grant from the Alfond Foundation. This is the 2nd grant secured from the Alfond Foundation and serves the entire school and not the CIS program exclusively. A 3rd and final grant has been submitted for the upcoming academic year.
- Secured $500K+ Congressional "ear-marked" funds for 2024 – 2025 academic year. These funds support the entire school and are not specifically dedicated to the CIS program.

Approved: Deans Council MM-DD-YYYY

5) **Program Goals / Strategic initiatives (NECHE Standard 2, 5):**
In prior reports, the programmatic goals and strategic initiatives included elements that were largely outside of the realm of SoTI control. Additionally, the goals did not easily lend themselves to a more granular program viewpoint. After consultation with the Office of Assessment, guidance was provided on how to better craft goals that the SoTI team can directly influence. The goals have a stronger tie to strategic initiatives, have more specific programmatic operational goals, and are positioned for easier assessment. The following is the result of that effort. The strategic goals offered are school level. Where appropriate, operational goals are more program focused.

Strategic Goal	Operational Goal	Assessment Plan	Notes
Build SoTI brand awareness in an effort to increase application submissions and overall enrollment into the SoTI programs.	Specifically through the Outreach Specialist, deepen existing relationships and visitation with regional highschools while expanding the outreach into technical schools, community colleges, and high schools outside of the state of Maine.	Continue with the outreach campaign as led by Ashlie Page and evaluate the effort in spring 2024 as documented by the number of events and number of student contacts. Compare application submissions and tuition deposits of current year against prior years.	Per data from the Outreach Specialist… 90 different individual outreach seminars at 34 unique locations reaching 1306 students.
	Participate in external technology fairs and competitions.	Itemize the number of events participated in with a target of at least 1.	Dr. Wright took 2 SD students to SkillsUSA 2024 where they served as judges for the Computer Programming competition.
	Serve as host facility for technology related events.	Itemize the number of events participated in with a target of at least 1.	Host site for Husson Alive 2024, Maine Media Camp 2024, and Girls Who Code Camp 2024.
	Enhance and leverage the SoTI website and social media.	Compare the current website against the website from last year and itemize updates/enhancements. Review the activity on social media platforms and evaluate engagement.	Limited to no changes with the various website pages. Perhaps attention will be refocused to the website in 2024-2025. Social media posts continued, but intermittently. Need to better coordinate with Husson Marketing Department.
Mature facilities and curriculum to ensure relevancy, foster student engagement, and promote high academic rigor.	Redesign IT 325 and IT 326 - Algorithms and Data Structures 1 and 2 to be delivered online in a 7 week timeframe	Evaluate status of course build at the end of the current academic year.	Both IT 325 and IT 326 were redesigned for an online 7-week delivery. A pilot of both classes was successfully run with a directed study student.

Strategic Goal	Operational Goal	Assessment Plan	Notes
	Design and deliver IT 265 - iOS Application Development.	Evaluate status of course build at the end of the current academic year.	Tharun T. taught this class for the first time in fall 2023. He is redesigning and enhancing over the summer of 2024 for a fresh delivery in fall 2024.
	Design and deliver IT 208 - Web Design and Development	Evaluate status of course build at the end of the current academic year.	Scott T. successfully taught the pilot class of the new IT 208 course. Content will be slightly modified for the fall 2024 delivery.
	Redesign and deliver IT 336 - Scripting for the Web	Evaluate status of course build at the end of the current academic year.	Scott T. successfully delivered the pilot class for the redesigned IT 336 class. Modifications included game design and implementation with a “Space Invaders” style game. Final exam included self selected enhancements to an existing game application.
	Redesign IT 601 - Business Analytics Essentials for the Profession to be delivered online in a 7 week timeframe	Evaluate status of course build at the end of the current academic year.	Alexander S. successfully redesigned IT 601 and has offered multiple sections in the last year. Will need to revisit the class in 2024-2025 to determine any needed adjustments.
	Implement a self-selected course project in IT 262	Evaluate project implementation at the end of the current academic year.	A self-selected project was implemented in IT 262. The project was completed over 6 different iterative steps. Project deliverables were enhanced to include more functional requirements, more visual design elements, more milestone determination and explanation, and more summary and reflection. Students also presented their final projects at the end of the semester.

6) **Curricular mapping / Outcome assessment (NECHE Standard 4, 8)**

- Please review and update the current curricular mapping and ensure syllabi reflect the mapping found at the official Husson Mapping Site (HERE)
- Please update the progress made on specific learning outcomes below. If specific external tools are used (i.e. Praxis, Peregrine, etc.) be sure to include them.

Student Learning Outcome	Courses mapped to SLO	Summary for the given academic year	Action
1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify and apply solutions	IT 208 IT 223 IT 321 IT 431 IT 471 IT 481 IT 482	All courses were offered during the current academic year. Professor Traylor designed and ran IT 208 for the 1st time in fall 2023. The course will be slightly redesigned and offered again in fall 2024. Professor Lagulos was able to offer IT 431 – Principles and Practice in IT Security for the first time in multiple semesters. His knowledge has advanced this course and will be essential to continue the maturation of the course. Collection of online students in IT 482 created an incredible project the delivered a website centered on recycling.	IT 223 is currently only offered in an online modality. Consideration should be given to offering a live in-person section. IT 321 is also currently only offered online. This course should be reviewed and likely redesigned to add rigor and relevancy. Consideration should also be given to offering a live in-person section.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline	IT 261 IT 262 IT 321 IT 325 IT 326 IT 336 IT 410 IT 481 IT 482	All courses were offered during the current academic year. IT 261 and IT 262 course projects enhanced to allow for self-selected projects that are guided in an iterative fashion. More documentation and reflection added in the project requirements. Professor Traylor designed and ran IT 336 for the 1st time in spring 2023 after many years of not running. The course will be slightly redesigned and offered again in spring 2024.	No specific actions needed.

Student Learning Outcome	Courses mapped to SLO	Summary for the given academic year	Action
3. Communicate effectively in a variety of professional contexts	IT 208 IT 261 IT 262 IT 321 IT 325 IT 326 IT 351 IT 410 IT 431 IT 471 IT 481 IT 482	As mentioned above, more written documentation and presentations were added for course projects in IT 261 and IT 262.	IT 351 professional journaling can be advanced to include some directed prompts in order to push targeted reflection on certain IT related topics.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles	IT 336 IT 431 IT 471	IT 431 enhancements pushed us further into the professional responsibilities of IT security.	In general, SoTI culture needs to evolve to push the overall professionalism standards for our students. Each course should have more targeted areas with regards to legal and ethical issues.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline	IT 223 IT 351 IT 482	Positive results from the internships and the small group in IT 482 completed a great group project in game design and development.	No formal action required outside of standard advancement and maturation of course offerings.

The Peregrine Exam is delivered in the IT 482 - IT Project Development class that all CIS and Software Development students take. The results are not parsed for only SD students. They represent the larger student body of the school. Results and notes have been updated for the data covering the 2023 – 2024 academic year.

Student Learning Outcome	Assessment Tool & Results	Notes
Direct: At least 80% of all graduating IT majors will score in the 50th percentile or higher in comparison to other peer institutions.	Peregrine Capstone Examination 2/4 = 50% (Percentiles for 4: 11, 46, 79, 96) 4 students completed the exam. Aggregate raw score for the cohort was 54 %. The individual exam scores are 44, 50, 58, 66.	No action items at this time.
Direct: On the IT 482 capstone project, at least 80% of all graduating IT majors will demonstrate acceptable or exemplary levels (A or B).	IT 482 I.T. Project Development – Capstone 4/5 = 80 % (6 students: A, A, A, A, F)	Students in this cohort did exceptionally well in the capstone course.
Indirect: The Peregrine Exit survey targets 10 individual IT related goals. Student self-assess each goal as either Strongly Agree, Agree, Neutral, Disagree or Strongly Disagree Assessment Target: At least 90% of the questions will be answered with an average value of 4 or greater (4 = agree, 5 = strongly agree).	Peregrine Exit Survey 4 students took the exit survey <u>Average Value for Each Question</u> Q1 = 4.00 Q2 = 4.05 Q3 = 3.75 Q4 = 4.19 Q5 = 4.20 Q6 = 4.10 Q7 = 3.76 Q8 = 3.55 Q9 = 4.05 Q10 = 3.85	6/10 questions were above the 4.0 threshold with 4 questions at or above 3.5. No student reported a score lower than 3 (neutral) on any question. See Appendix I for the specific verbiage of these ten questions. The questions touch each of the 5 core program outcomes, which can be viewed in Appendix II. Q8 addresses databases. The IT 410 Database Design class has been offered online in 7 weeks. In Fall 2024, the class will be offered in person over 15 weeks.
Indirect: IT 351 Employer Evaluation. At least 80% of all graduating students will receive a mean score of 4.0 (agree / strongly agree) on their internship employer evaluation.	Employer Evaluation 2023 SS: 7/7 2023 FA: 0/0 2024 SP: 3/3 10/10 (100%) met the mean score of 4.0 or higher.	Employer evaluations continue to come back very high.

Approved: Deans Council MM-DD-YYYY

7) **Executive Summary:**
   - Please provide a summary of the major findings of the annual report.
   - Be sure to address all that are applicable:
     - Significant achievements
     - identified opportunities
     - Identified threats or challenges
     - Adequacy of resources
     - Budgetary considerations

Last year's report noted that the Software Development program was partially a return to previous efforts in the space roots and that the fall of 2023 would be the first fall with the revised degree. The SD program offers 2 degree options; BS and BS/MBA. The data supports a consistent trend in interest in the program and we are optimistic this will continue, if not increase.

The academic offerings within the program have been strengthened this year. A couple new classes were offered; IT 208 and IT 265. Multiple classes were redesigned; IT 325, IT 326, IT 336. Other classes such as IT 261 and IT 262 saw smaller improvements.

The program continues to be strengthened by having a modern lab space in Harold Alfond Hall (HAH). As documented in the Extended Reality program assessment report, the addition of the XR Developer has helped to strengthen software development elective courses. In addition to the modern spaces in HAH, the lab in Peabody 220 continues to be important within the program. The refresh of Peabody 220 that was eluded to last year was completed. Over the summer of 2023, the lab was completely overhauled with new student PCs, a new instructor PC, new work surfaces and storage, and other positive aesthetic changes in the room. The modernization of the space not only serves our current students, but also provides a marketable space for prospective students.

Enrollment in the program increased for fall 2024. The software development program continues to show the strongest enrollment of our three programs. Looking to Fall 2024, the IT 261 – Introduction to Computer Programming class, is fully enrolled at 24 students.

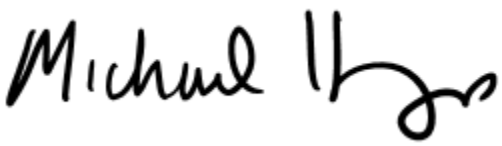
There continue to be limited budget needs for the Software Development program. The current small capital budget for SoTI should ensure the small needs of the program are met.

Looking forward into the next academic year, we will focus on small curriculum advances in IT 202 and IT 265. Future efforts with regards to recruitment will continue to ensure the program has a viable student base. Enhancing our marketing through outreach and our online presence will play a key role.

It should also be noted that future attention should be given towards the online offering of Software Development. Efforts in curriculum development, course scheduling, and proper staffing are key areas.

All in all, the program is strong and is on track to continue to gain strength and advance. There are some data visualizations that follow this summary that help to tell the story of positive growth in program interest and enrollment.

Thanks,



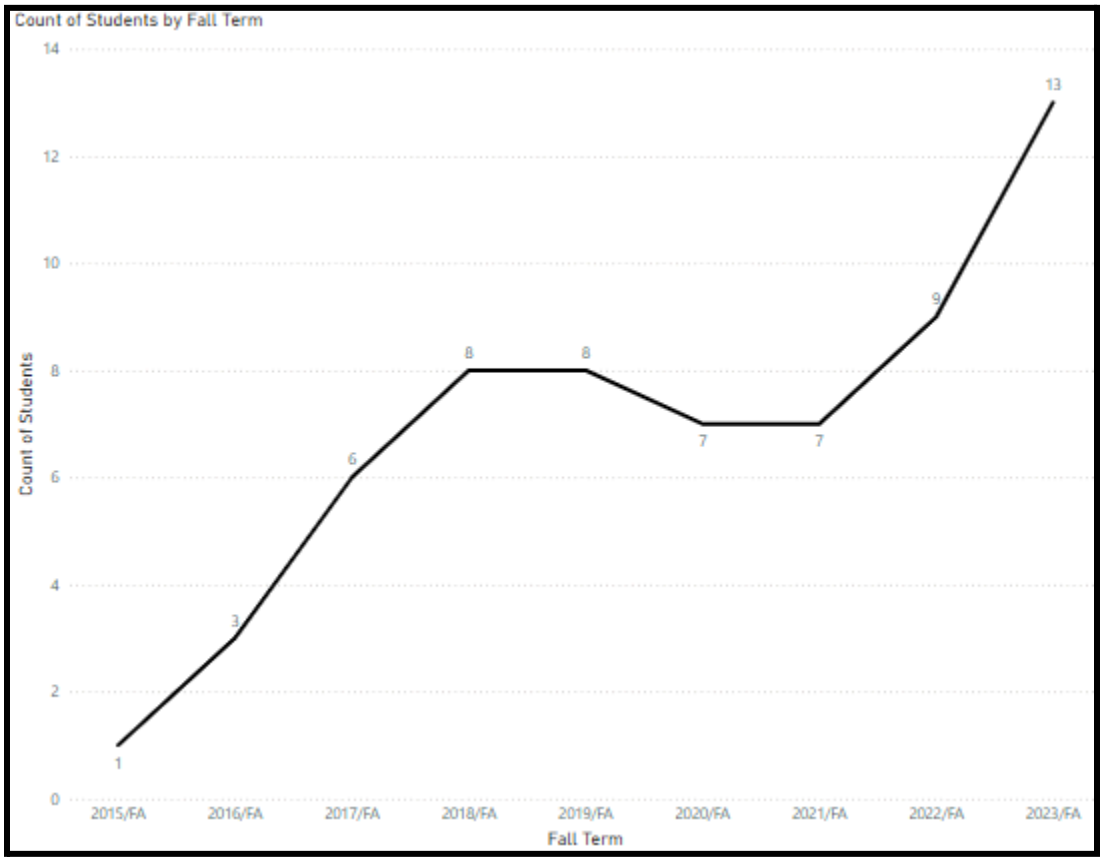
Michael Knupp, PhD
Assistant Professor & Director of the School of Technology and Innovation

Approved: Deans Council MM-DD-YYYY

Overall Program Health Data

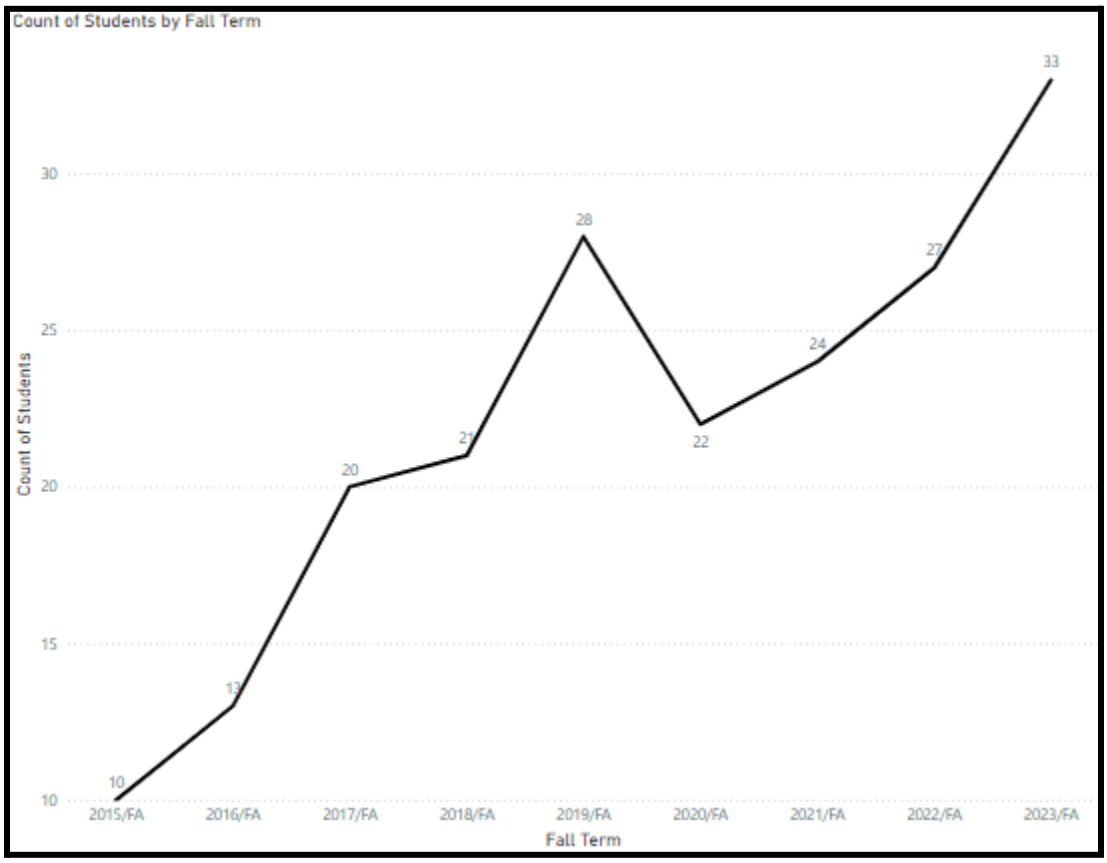
Enrollment trends - monitoring enrollment is a vital part of assessing the overall health of a program. SoTI is in a building phase and the Software Development program is showing slow, but steady growth. The graphs below provide visual support of the upward enrollment trends.

Enrollment trends for Entry First Year and Transfer SD students



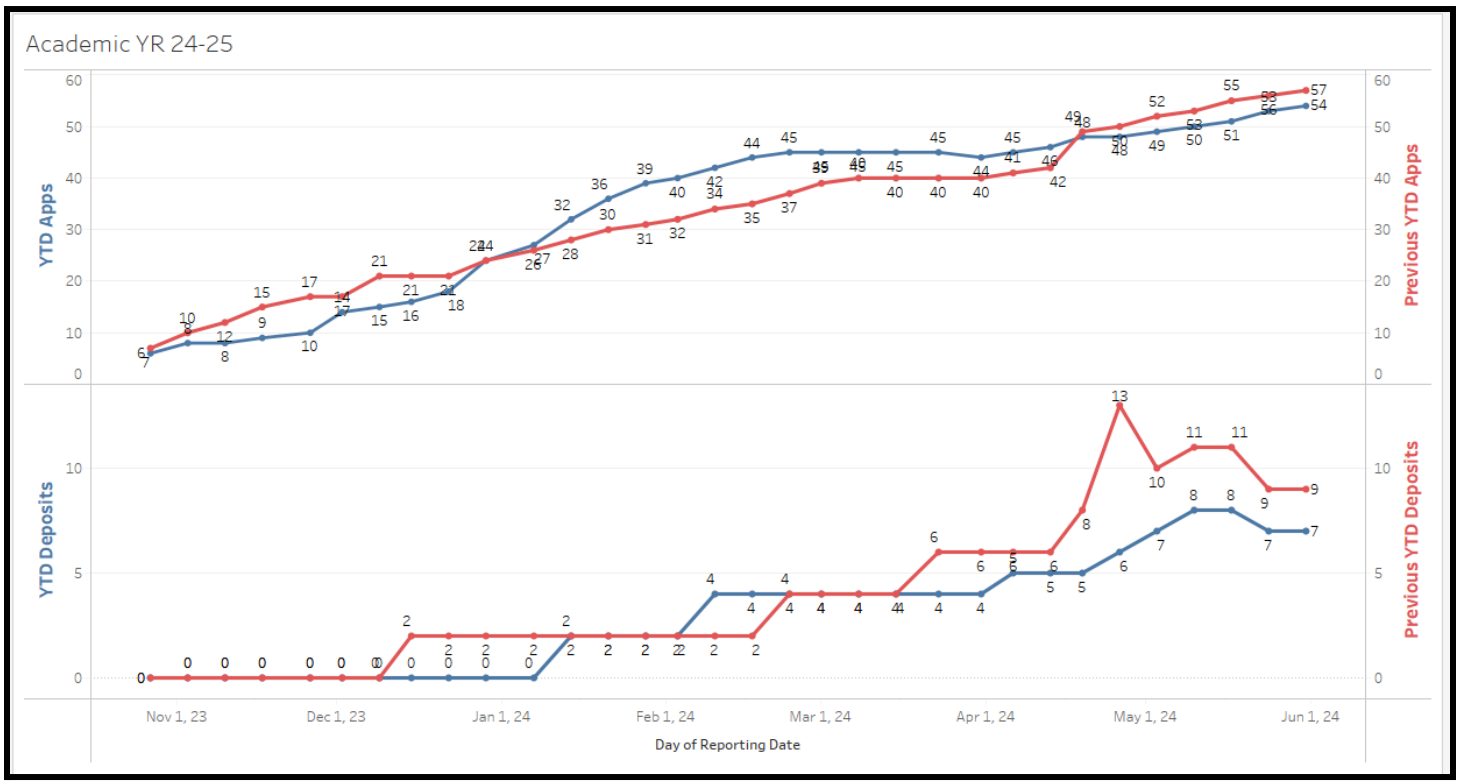
Approved: Deans Council MM-DD-YYYY

Enrollment trends for All SD students



Approved: Deans Council MM-DD-YYYY

The following chart shows consistent application counts and tuition deposits for the current academic year as compared to the previous. The blue trend lines reflect the upcoming 2024-2025 academic year and the red trend lines reflect the previous year of 2023-2024. While it is encouraging to note that numbers have not significantly decreased, we are optimistic that the counts can be increased in the upcoming recruiting cycle.



Approved: Deans Council MM-DD-YYYY

Appendix I

Ten targeted IT questions included on 2021 Peregrine Exit Survey:

1. I am able to integrate the core areas of business to inform my decision making.
2. I am able to apply legal and ethical principles in business to organizational decision making.
3. I am able to apply business-related quantitative and qualitative methods and tools to formulate management decision alternatives.
4. I am able to demonstrate leadership skills.
5. I am able to demonstrate professional business communication.
6. I have the ability to work with diverse colleagues in team situations.
7. I am able to demonstrate knowledge of computer hardware and software infrastructure.
8. I am able to construct appropriate database solutions using computer software.
9. I am able to apply project management practices and principles.
10. I am able to utilize computer technology solutions to address business policies and practices.

Appendix II

Programmatic outcomes were formalized in 2018 – 2019 academic year and amended slightly in 2020 – 2021 to draw focus and attention to the five key nouns that each programmatic outcome aligns to.

Program Outcome #1: **[Problem Solvers]** Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions

Program Outcome #2: **[Creators]** Design, Implement and Evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline

Program Outcome #3: **[Communicators]** Communicate effectively in a variety of professional contexts

Program Outcome #4: **[Professionals]** Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles

Program Outcome #5: **[Collaborators]** Function effectively as a member or leader of a team that is engaged in activities appropriate to the program's discipline