

## 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 trends are average, but extremely strong. The retention rate is strongly impacted when enrollment numbers are low. For example, if enrollment is 2 for a given fall, if only 1 student changes their degree, this will show as a 50% retention rate. The retention rate is also likely impacted with the online students as that space tends to be more fluid than the in-person space. Additionally, the software development program was redesigned two years ago and we believe the product is better and will result in stronger retention numbers.

BS Software Development Retention Rate				
Fall Term	HU or Program	1 <sup>st</sup> -2 <sup>nd</sup> Year	1 <sup>st</sup> -3 <sup>rd</sup> Year	1 <sup>st</sup> -4 <sup>th</sup> Year
2018	HU	60%	20%	20%
	Program	60%	0%	0%
2019	HU	100%	100%	100%
	Program	67%	67%	67%
2020	HU	80%	20%	20%
	Program	80%	20%	0%
2021	HU	83%	83%	83%
	Program	83%	50%	33%
2022	HU	100%	100%	---
	Program	80%	60%	---
2023	HU	56%	---	---
	Program	56%	---	---

Retention Trends for Previous 6 Years...

1st - 2nd Year Within Husson / Within Program	80 % / 71 %
1st - 3rd Year Within Husson / Within Program	65 % / 39 %
1st - 4th Year Within Husson / Within Program	56 % / 25 %

Graduation Rates (2015 to 2021 cohorts in BS SD & BS SD/MBA programs). Per the Institutional Research Department, graduation rates are for students that originally started in the program.

BS Software Development Graduation Rate			
Fall Term	4-Year	5-Year	6-Year
2015	0%	0%	0%
2016	0%	0%	0%
2017	33%	33%	33%
2018	0%	0%	0%
2019	0%	33%	33%
2020	0%	0%	---
2021	50%	---	---

Another impactful measurement of graduation statistics is the number of conferred degrees. Conferred Degrees by Graduating Class (Summer/Fall/Spring). The number of conferred degrees is slowly increasing each graduation year.

2020 (SS 19, FA 19, SP20)	2
2021 (SS 20, FA 20, SP21)	2
2022 (SS 21, FA 21, SP22)	3
2023 (SS 22, FA 22, SP23)	4
2024 (SS 23, FA 23, SP24)	5
2025 (SS 24, FA 24, SP25)	6

### 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 Alford Foundation. This is the 2nd grant secured from the Alford 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.

5) **Program Goals / Strategic initiatives (NECHE Standard 2, 5):**

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 high schools while expanding the outreach into technical schools, community colleges, and high schools outside of the state of Maine.	<p>Continue with the outreach campaign as led by Ashlie Page and evaluate the effort in spring 2025 as documented by the number of events and number of student contacts.</p> <p>Compare application submissions and tuition deposits of current year against prior years.</p>	<p>Per data from the Outreach Specialist...</p> <p>72 different individual outreach seminars at 25 unique locations reaching 1066 students.</p> <p>Additional outreach included attending the Hannaford Associates Picnic for COB (300 attendees), Girl Scouts of Maine Build, Create, Innovate event (250 attendees) and the Brewer High School College/Career Fair with 700 attendees.</p> <p>Anecdotal experiences support many students who attend open house or accepted students days initially discovered Husson through the outreach efforts.</p>
	Participate in external technology fairs and competitions.	Itemize the number of events participated in with a target of at least 1.	While SOTI did not set up a table at SkillsUSA, the school was represented via faculty participation as judges in various events.
	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 2025 and the CS Summer of Fun 2025 Conference.
	Enhance and leverage the SoTI website and social media.	<p>Compare the current website against the website from last year and itemize updates/enhancements.</p> <p>Review the activity on social media platforms and evaluate engagement.</p>	<p>The Marketing Department continues to make small changes to the website and have taken ownership of social media postings.</p> <p>Additional work is needed to modernize and expand the information and visual aspects of the SOTI web pages.</p>

Strategic Goal	Operational Goal	Assessment Plan	Notes
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 in-person in a 15 week timeframe	Evaluate status of course build at the end of the current academic year.	Courses have been redesigned and will be offered in-person in the FA 2025 and SP 2026 semesters.
	Advance the course content and delivery of IT 265 - iOS Application Development.	Evaluate status of course build at the end of the current academic year.	Tharun T. delivered a matured version of IT 265 in FA 2024. Plans are underway to advance the course further.
	Redesign the structure and delivery of IT 321 - Systems Analysis and Design to add academic rigor and overall maturity of the course.	Evaluate status of course build and delivery at the end of the current academic year.	Michael Knupp was able to completely redesign the IT 321 course to properly fit into a 7 week online modality. In addition to strengthening the content of the course, a self-selected course project was added to the curriculum.
	Design a Certificate in Software Development.	Review the finalized certificate and then run annual reports to evaluate enrollment.	The certificate has been approved and will be available for official use starting in the Fall 2025 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
<p>1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify and apply solutions</p>	<p>IT 208 IT 223 IT 321 IT 431 IT 471 IT 481 IT 482</p>	<p>Staffing changes resulted in major pivots for course coverage of many of the software development courses. While this provided opportunity for some faculty, it was slightly disruptive for students.</p> <p>Michael Knupp was able to redesign and deliver a greatly enhanced version of IT 321 - Systems Analysis and Design.</p> <p>Marlon Lagulos was able to offer IT 431 – Principles and Practice in IT Security using the course he designed within the Davis Grant work.</p> <p>The IT 482 IT Capstone class had an enrollment of 14 students which is the largest enrollment in many, many years.</p>	<p>IT 223 is currently only offered in an online modality. The course will be offered in-person in the 2025-2026 academic year.</p> <p>IT 321 is also currently only offered online. Consideration should also be given to offering a live in-person section.</p>
<p>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</p>	<p>IT 261 IT 262 IT 321 IT 325 IT 326 IT 336 IT 410 IT 481 IT 482</p>	<p>All courses were offered during the current academic year.</p> <p>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.</p> <p>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 2025.</p>	<p>No specific actions needed.</p>

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	More written documentation and presentations were added for course projects in IT 261, 262, and 410.  Some advancements were made in the directed professional journaling assignments within the IT 351 CIS Internship course.	No additional action needed at this time.
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 (IT 351) and the group in senior capstone course (IT 482).  Two graduating seniors landed software development jobs at Tyler Technologies.	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 CIS students. They represent the larger student body of the school. Results and notes have been updated for the data covering the 2024 – 2025 academic year.

Student Learning Outcome	Assessment Tool & Results	Notes
<p>Direct: At least 80% of all graduating IT majors will score in the 50<sup>th</sup> percentile or higher in comparison to other peer institutions.</p>	<p>Peregrine Capstone Examination</p> <p>4/14 = 36%</p> <p>Exam Percentiles for 14: 4, 1, 99, 1, 35, &lt; 1, &lt; 1, &lt; 1, 60, 99, &lt; 1, &lt; 1, &lt; 1, &lt; 1</p> <p>Exam Scores for 14: 45, 43.75, 31.25, 68.75, 43.75, 50, 38.75, 32.50, 26.25, 38.75, 36.25, 56.25, 52.50, 83.75.</p>	<p>Many students did not score above the 50th percentile. Lower scores may be a result of more elective choices for business classes. Historically the business classes were more prescriptive. The high elective choice for students may have a negative effect on scores within the business related sections of the Peregrine exam.</p>
<p>Direct: On the IT 482 capstone project course, at least 80% of all graduating IT majors will demonstrate acceptable or exemplary levels (A or B).</p>	<p>IT 482 I.T. Project Development – Capstone</p> <p>13/14 = 93 %</p> <p>Final Grades: B+, A, B+, A, A, A-, A, B+, D, A, A-, A, B, A-.</p>	<p>Students in this cohort did exceptionally well in the capstone course. This was the instructor’s (Dr. Michael Knupp) first time through with the course. Future work needs to determine a better way to address individual accountability within the group project.</p>
<p>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</p> <p>Assessment Target: At least 90% of the questions will be answered with an average value of 4 or greater (4 = agree, 5 = strongly agree).</p>	<p>Peregrine Exit Survey</p> <p><u>Average Value for Each Question</u></p> <p>Q1 = 4.13</p> <p>Q2 = 4.14</p> <p>Q3 = 3.75</p> <p>Q4 = 4.35</p> <p>Q5 = 4.21</p> <p>Q6 = 4.46</p> <p>Q7 = 4.07</p> <p>Q8 = 3.82</p> <p>Q9 = 4.19</p> <p>Q10 = 4.19</p>	<p>8/10 questions were above the 4.0 threshold, and the other 2 are very close.</p> <p>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.</p>
<p>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.</p>	<p>Employer Evaluation</p> <p>2024 SS: 4/4</p> <p>2024 FA: 1/2</p> <p>2025 SP: 2/3</p>	<p>Employer evaluations continue to come back very high. In FA 2024, one student went off-grid and stopped responding in the class and to emails. In SP 2025, one student did not secure an internship and took an incomplete in order to complete the internship in SS 2025.</p>

## 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

Fall of 2024 marks the beginning of the 2nd year of a revised SD degree away from Integrated Technology. We are seeing positive results from this change. Enrollment continues to grow with signs of flatness from last year to this year. Courses are being revised and updated where needed. And facilities continue to improve to deepen the overall student experience. The data supports a solid upward trend in interest in the program and we are optimistic this will continue.

The academic offerings within the program have been strengthened this year. Based on staffing changes that occurred this year, courses are being covered by different faculty. This is bringing a fresh perspective. We continue to work with the curriculum to keep them modern and relevant. We continue to bring online classes into an in-person offering. The online offering of software development has been discontinued and we are teaching out the few remaining students. This effort is scheduled to be completed by Term 3 of 2027. We have navigated away from ECAP offerings and attention needs to be given to making at least IT 261 available as an ECAP class. Additionally, future work in a proficiency test (test out situation) for IT 261 would have high value for students that come to Husson with strong introductory programming skills.

The program continues to be strengthened by having a modern lab space in Harold Alford Hall (HAH). In order to fully support all software development classes, and all extended reality classes, a refresh of HAH 207 has been designed and is scheduled for implementation in summer of 2025. The new space will include upgraded student PC's, an upgraded instructor PC, and a new remote server that allows students to virtually connect into a high powered Windows environment.

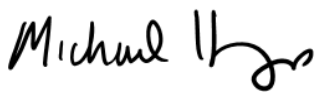
Enrollment in the program is steady from the previous year. The software development program continues to show the strongest enrollment of our three programs.

There continue to be limited budget needs for the Software Development program. The current small operational budget for SOTI should ensure the small needs of the program are met. The third Alford Grant of \$1.56M will mainly support personnel costs within SOTI.

Looking forward into the next academic year, in addition to facilities improvements, we will focus on maturing the assessment of the SD program and elevating individual courses. The team is actively involved with the Office of Assessment and the Davis Grant work. We are optimistic that the growing trend of international students will continue, but it is under attack. Enhancing our marketing through outreach and our online presence will continue to play a key role in our overall growth. Lastly, consideration needs to be given for how to backfill for the two lost faculty positions. The current staffing model is a limiting factor to growth of the curriculum and the school at large.

Data visualizations follow this summary to help tell the story of positive growth in program interest and enrollment.

Thanks,



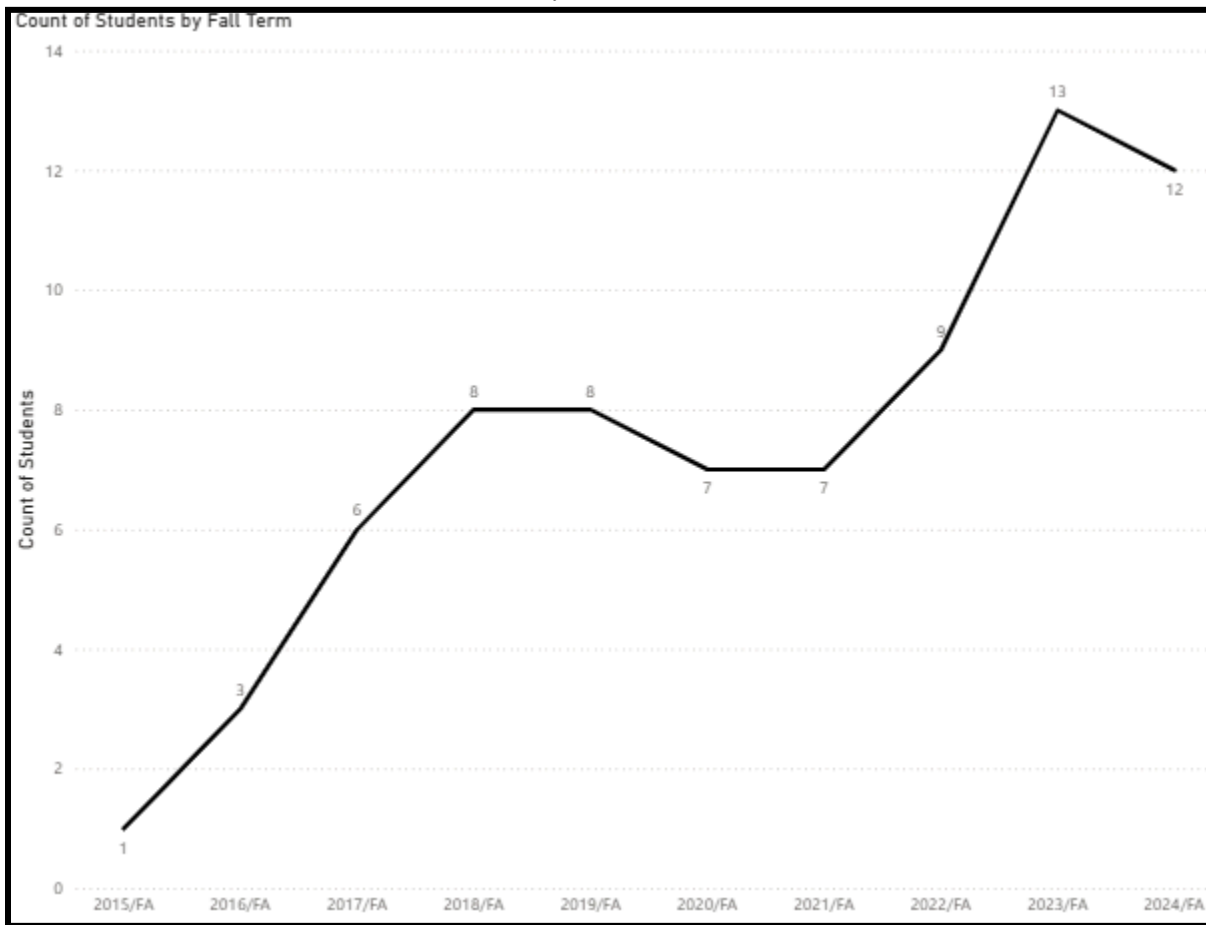
Michael Knupp, PhD  
Assistant Professor & Director of the School of Technology and Innovation

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.

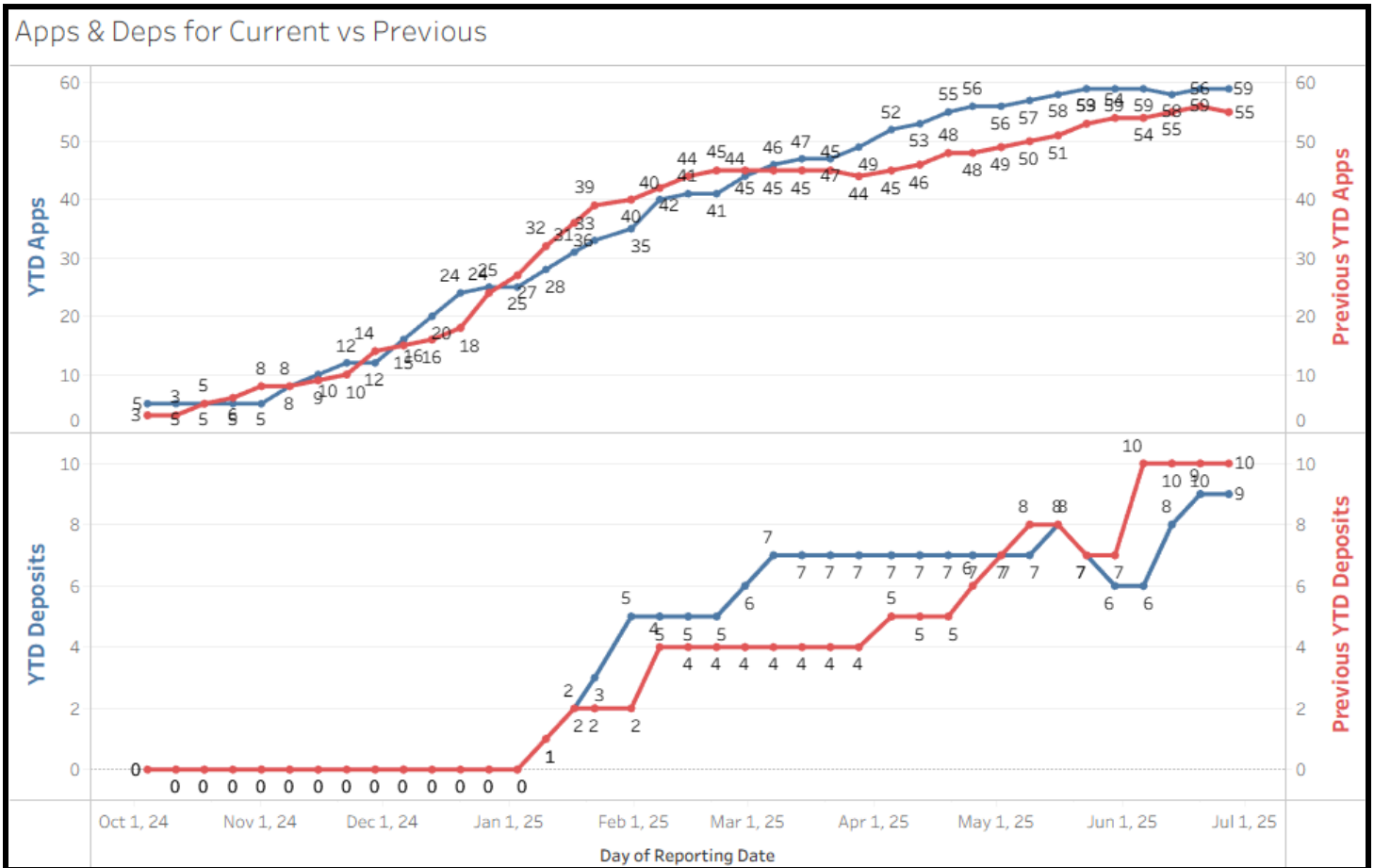
Enrollment trends for Entry First Year and Transfer SD students



Enrollment trends for All SD students



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 2025-2026 academic year and the red trend lines reflect the previous year of 2024-2025. The data supports a steady trend as compared to the previous year. We are optimistic that these numbers will continue to increase in the coming recruitment cycle.



## Appendix I

Ten targeted IT questions included on 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