ANNUAL PROGRAM ASSESSMENT FORM

Name of Program: Software Development

Report prepared by: Michael Knupp

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

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 which aligns to the mission statement of the College of Business and Husson University at large.

"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)**
No new faculty were added with a focus on the Software Development program.

Grants
- Team effort to secure a $2.2M grant from the Alfond Foundation. The grant serves the entire school and not the CIS program exclusively.
- Efforts underway to secure an additional Alfond grant for 2023-2024 and Congressional "ear-marked" funds for likely 2024 – 2025 academic year.

5) **Program Goals / Strategic initiatives (NECHE Standard 2, 5):**
Programmatic goals shown below are carried over from last year's internal assessment plan which only covered the Integrated Technology program. Note that the goals are not specific to the three individual programs in effect for Fall 2023, but more so all programs across the school. Going forward, a clearer delineation of school vs program goals will be made.

Goals from the <u>previous</u> year:	**Met / Not Met**	**Assessment summary:**	**Action**
Exceed 10.0 (average of the last five years) entering FR	Met	Data from Institutional Research - 2022: 16 2021: 18 2020: 10 2019: 6 2018: 9 5 Year Average = 59/5 = 11.8	No formal action plan needed at this time.
Have at least 3 FR students enrolled in each of the 3 IT concentration areas & Extended Reality for the Fall semester	Met	Data from Institutional Research - 2022 – CIS (2), SD (8), WEB (0), XR(5) 2021 – CIS (5), SD (11), WEB (0) 2020 – CIS (4), SD (6), WEB (0) 2019 – CIS (3), SD (3), WEB (0)	No action needed. Note that the Web concentration has been sunset, so it is to be expected the FR enrollment would be 0. While CIS saw 2 students, overall the goal is considered to be met. New CIS offerings for Fall 2023.
Exceed 15.0% (average of the last five years) Female students in program	No Met	Data from Institutional Research - 2022 – 2023: 7/56 (12.5 %) 2021 – 2022: 5/40 (12.5 %) 2020 – 2021: 3/42 (7.1 %) 2019 – 2020: 7/54 (13.0 %) 2018 – 2019: 8/54 (14.8 %) 5 Year Average = 12 %	No formal action plan needed at this time.
Conduct outreach to Technical Schools, High Schools and Community Colleges with the target of 2 visits per faculty member; one in the fall and one in the spring	Met	As of May 1, 2023... Through Outreach Specialist (Ashlie Page), visited 17 different schools and reached over 630 students.	No formal action plan needed at this time.

Goals from the <u>previous</u> year:	Met / Not Met	Assessment summary:	Action
Exceed 80% (average of the last five years) retention of incoming freshman (First fall to second fall) Note – retention means retained at Husson University	Not Met	Data from Institutional Research - 2021 à 2022: 64 % 2020 à 2021: 78 % 2019 à 2020: 83 % 2018 à 2019: 63 % 2017 à 2018: 67 % 5 Year Average = 71 %	No formal action plan needed at this time. Difficult to truly assess issues due to COVID impact on retention.
Exceed 66.7% (average of the last five years) retention of all degree students across multiple years (First fall to subsequent falls; older cohorts are measured to 4th fall, earlier cohorts are measured to 2nd or 3rd fall). Note – retention means retained at Husson University	Not Met	Data from Institutional Research - 2021 – 2022: 64% 2020 – 2022: 67% 2019 – 2021: 67% 2018 – 2021: 38% 4 Year Average = 59 %	No formal action plan needed at this time. Difficult to truly assess issues due to COVID impact on retention.
Exceed 27.6% (average of the last three years) 6th year graduation rate. Note – Graduation rates are published when the 6th year of the cohort has occurred.	Met	Data from Institutional Research - 2016 – 2021/2022: 63% 2015 – 2020/2021: 56% 2014 – 2019/2020: 55% 3 Year Average = 58 %	No formal action plan needed at this time.
The respective computer labs, associated hardware and utilized software meet contemporary requirements of the program and the students.	Met	Build out of capability model of XR Lab and hiring of XR Technologist, Tony Gerow. $40K Peabody 220 lab refresh underway and to be completed summer 2023.	No formal action plan needed at this time.
Full assessment mappings will be completed for all IT courses.	Met	Data from Internal Evaluation: (in conjunction with University Assessment Dept.) Programmatic outcomes for SoTI have been simplified and all IT courses have been mapped into the 5 programmatic outcomes	Need to update the Assessment website with the simplified programmatic outcomes and also need to map the XR courses.

Approved: Deans Council 7-20-22

Goals from the previous year:	Met / Not Met	Assessment summary:	Action
Develop one course that can be used as a Software Development elective.	Met	Data from Internal Evaluation: IT 265 – Intro to iOS App Development is being developed over the summer of 2023 and is being offered in the fall of 2023.	No formal action plan needed at this time.

Software Development Programmatic Goals for 2023 - 2024

Goals for the upcoming year:	Assessment planning:	Notes
Motivated to grow enrollment (target of 8 new SD students), advance marketing initiatives to build better brand awareness.	1. Continue with outreach campaign as led by Ashlie Page and evaluate the effort in spring 2024 2. Review SoTI website as it pertains to the SD pages and program to evaluate growth over the spring 2023 – spring 2024 time period	
Develop new SD elective opportunities.	1. IT 208 – Web Design and Development is planned to be developed over the summer of 2023 and is being offered in fall 2023. 2. IT 265 – Intro to iOS Development is planned to be developed over the summer of 2023 and is being offered in fall 2023. 3. IT 366 – Programming Principles for AR is planned to be developed over the fall of 2023 and is planned to be offered in spring 2024.	

Approved: Deans Council 7-20-22

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 (core and within CIS program)	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	Courses not offered during current academic year: IT 208, IT 321. Collection of online students in IT 482 created an incredible project the delivered a website centered on recycling.	No formal action required outside of standard advancement and maturation of course offerings. IT 208 is being developed over the summer 2023 to be delivered for the first time in fall 2023.
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	Courses not offered during current academic year: IT 321, IT 336. IT 261/262 courses enhanced to include student self-selected course projects. Course project and weekly coding assignment documentation requirements have been advanced to include more design and evaluate elements.	No formal action required outside of standard advancement and maturation of course offerings. IT 325/326 Algorithms and Data Structures I/II to be matured over the 2023-2024 academic year to include better assignments and assessment that will help serve to meet this outcome better.
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	Courses not offered during current academic year: IT 208, IT 321. IT 261/262 sequence upgraded documentation required in course project and weekly coding assignments to include more written communication. IT 351 includes professional journaling. IT 482 continues to include a video reflection on course project.	IT 208 is being developed over the summer 2023 to be delivered for the first time in fall 2023. IT 351 professional journaling can be advanced to include some directed prompts in order to push targeted reflection on certain IT related topics.

Approved: Deans Council 7-20-22

Student Learning Outcome	Courses mapped to SLO (core and within CIS program)	Summary for the given academic year	Action
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles	IT 336 IT 431 IT 471	Courses not offered during current academic year: IT 336. Small elements of the courses include legal and ethical principles, but room for growth.	In general, SoTI culture needs 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	While small in course coverage, collaboration and team dynamics continue to be a strength for SoTI CIS students.	No formal action required outside of standard advancement and maturation of course offerings.

The 2021 – 2022 assessment report included the following table of student learning outcomes. Results and notes have been updated for the data covering the 2022 – 2023 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 6/9 = 67% 9 students completed the exam. Aggregate score for the cohort was 55 %. The individual exam scores are (35, 56.25, 60, 71.25, 27.5, 62.5, 57.5, 73.75, 47.5).	No action items at this time. It is worthwhile to note that for the 2nd time, 2 students scored above 70% on the exam.
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 5/6 = 83.3 % (6 students: B-, C, A-, A, B+, A)	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 9 students took the exit survey <u>Average Value for Each Question</u> Q1 = 4.05 Q2 = 4.00 Q3 = 4.05 Q4 = 4.18 Q5 = 4.27 Q6 = 4.23 Q7 = 4.19 Q8 = 3.90 Q9 = 4.95 Q10 = 4.00	9/10 questions were above the 4.0 threshold with 1 question at 3.90. 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.
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 2022 SS: 2/2 2022 FA: 0/0 2023 SP: 1/1 3/3 (100%) met the mean score of 4.0 or higher.	Employer evaluations continue to come back very high.

Approved: Deans Council 7-20-22

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

The Software Development program is partially a return to previous efforts. We introduced a BS in Software Development years ago, but had trouble marketing it. We moved away from that offering when we implemented the Integrated Technology program. The Integrated Technology program with areas of concentration is being sunset with a move towards elevating the concentrations back to programs. As such, the Software Development (SD) program emerges and will be in full effect starting the fall 2023. The effort will strengthen the SD program.

The SD program offers 2 degrees; BS and BS/MBA. Both curriculums have been revised to include more flexible electives, new courses in mobile and web development, a required business presentations course (BA 300), and other small changes. The new degrees are branded as Software Development which will help with visibility, understandability, and also marketing.

The program has been strengthened by the curriculum changes put forth for fall 2023. The changes bring more specified software development courses to the curriculum. The program is also strengthened by having a modern lab space in Harold Alfond Hall. The addition of the XR Developer will also help to strengthen software development elective courses.

Peabody 220 will undergo a refresh in summer of 2023 that will include new student PCs, new instructor PCs, new work surfaces and storage, and other positive aesthetic changes in the room. This will help to modernize this lab for current students and to build a more marketable lab space for potential future students. This is important because software development students will use this lab for some of their coursework.

Enrollment has increased in the program for fall 2023. It is the strongest of our three programs. Fall 2022 had a nearly full IT 261 – Introduction to Computer Programming class for the 1st time that I can remember.

There are 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 stabilizing and working with the revised curriculum. 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.

All in all, the program is strong and is on track to continue to gain strength and advance.

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 as 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

Approved: Deans Council 7-20-22