



Computer Science [CSCI]

Cycles included in this report:

Jun 1, 2024 to May 31, 2025

Program Name: Computer Science [CSCI]

Reporting Cycle: Jun 1, 2024 to May 31, 2025

1 Is this program offered via Distance Learning?

2 Is this program offered at an off-site location?

No

2.1 If yes to previous, provide addresses for each location where 50% or more of program credits may be earned.

3 Example of Program Improvement

2020-2021:

Solidified the course work and ran the following classes for students:

- CSCI 180 - Switched from C Part 1 to Python
- CSCI 281 - Switched from C Part 2 to Java Part 1
- CSCI 282 - Switched from Java to Java Part 2
- CSCI 310 - Computing Ethics

2021-2022:

Students begin to return to on-campus classes Fall 2021. Development begins on new Datamining, Robotics, Machine Learning, and Cyber Defense courses. Students are still responding well to the new changes.

Additional changes in curriculum to take effect in the 2022-2023 catalog year:

- MATH 185 set as a pre-requisite for CSCI 308
- Statistics removed as a pre-requisite for CSCI 429
- Datamining, Robotics, and Machine Learning courses added to course list

2022-2023:

Students are still responding well to the changes and overall coding readiness for higher level courses is becoming evident. The first rounds of the new Robotics, Machine Learning, and Cyber Defense courses are offered to students.

Additional changes in curriculum to take effect in the 2023-2024 catalog year:

- Separating CSCI 491 (senior seminar) into CSCI 492 (1hr fall class) and CSCI 493 (3hr spring class).
- Requiring CSCI 310 (Ethics) and COMM 201 (Fundamentals of Public Speaking) instead of the current Philosophy class (PHIL 254).
- CSCI 321 is removed from the curriculum. The class concept will now be replaced by BADM 374 and taught by business department faculty.
- CSCI 180 is modified to allow MATH 113/MATH 170/MATH 175/MATH177 as pre/co-requisites. Decision made to allow students to begin work on computer science courses earlier even if they are not yet ready for MATH 190
- CSCI minor removes the three-hour class restricted elective choices, and adds two 3hr 300 /400 level CSCI/CPEN/ELEN free choice elective courses. Total credits for minor changed from 15hrs to 18hrs.
- Cyber Security minor is in development and will be offered. 21hrs - seven classes.

2023-2024:

Students are still responding well to the changes and overall coding readiness for higher level courses is becoming evident. The new cyber security minor is gaining interest and students are beginning to add it to their degree plan for Fall 2024.

Plans are in the works for a new cyber security concentration - plans to roll out the concentration depend upon further BOR funding and analysis of interest in the associated minor.

The first round of the new Dev Ops course is being offered to students.

Meetings discussing moving content in the first four CSCI classes to meet student needs have taken place. Students state they need practice on algorithms implementation earlier due to programming competitions and internship interviews. A study is taking place to assist in rearranging the course content and assessments. Current plan:

- CSCI 308 currently contains and assesses all data structures.
- CSCI 180, 281, 282 will now take on the non-advanced data structures, algorithms, and implementations from CSCI 308
- CSCI 308 will focus on Theory, Trees, and Graphs.

2024-2025:

- The **Cyber Security Concentration** was added in 2024-2025, as we planned last year (2023-2024). This new concentration will improve JOB PLACEMENT for our graduates. Dr. Bei used existing CSCI classes such as CSCI 424 (Introduction to Networking) and CSCI 486 (Operating Systems Administration II), and she added a bunch of new courses such as CSCI 475 (Dev Ops), CSCI 474 (Cyber Defense), CSCI 476 (Ethical Hacking) to the curriculum.
- During 2023-2024, the CSCI faculty and the department head Dr. Vasan decided to add an **AI Concentration**. In 2024-2025, the CSCI faculty added the new AI Concentration which includes CSCI 425 (Introduction to AI Part I), CSCI 435 (Introduction to AI Part II), CSCI 431 (Machine Learning), CSCI 436 (Data Mining), CSCI 437 (Neural Networks), and CSCI 408 (Formal Language Theory).
- CSCI 491 is being concurrently taught with CSCI 492/493. This is going well, because our students have multiple options. The students are being served better because they have more time, and they have the ability to collaborate with engineering. The transition from 491 ----> 492/493 is going very well, and Dr. Lavergne is working with students that want to finish the capstone in ONE semester, as well as those that want to finish the capstone in TWO semesters.
- **CERTIFICATIONS:**
 - Two students were certified in Cyber Security; this is obtained with the TestOut Certification. These students are seniors in Computer Science and worked under the guidance of Dr. Bei.
 - Eight students were certified in Hybrid Server Pro: Core (Microsoft and Azure), also with TESTOUT. These students were mentored by Professor Rhonda Anderson.
 - One student was certified with the Network Pro TESTOUT certificate. Guided by Dr. Bei.
 - One student got the Network Pro CompTIA certificate

4 Program Highlights from the Reporting Year

2021-2022:

Students begin to return to on-campus classes Fall 2021. Development begins on new Datamining, Robotics, Machine Learning, and Cyber Defense courses. Students are still responding well to the new changes. The beginnings of a new online APR software development project begins with hiring students, creating web page templates, and initial database, webpage, and pdf report development.

2022-2023:

Students are still responding well to the changes and overall coding readiness for higher level courses is becoming evident. The first rounds of the new Robotics, Machine Learning, and Cyber Defense courses are offered to students. Additional changes in curriculum to take effect in the 2023-2024 catalog year: Total credits for CS minor changed from 15hrs to 18hrs. Other modifications made to give students more options, computing ethics, and a better introduction to their senior project class. (see Program changes section). More changes possible after McNeese Future Search conference results.

Fall 2022 Dr. Lavergne becomes new computer science coordinator. The new online APR software development project adds three more students for back end web development and a statistics dashboard. Roadmaps are updated for the three concentrations and minor for posters.

2022-2023:

- LaSpace Senior Design Undergraduate Research Team secured second place in poster competition in LSU Discover Day.
- Video Game and Data Analysis Research group submitted survey papers for review in preparation for undergraduate research conference next semester.
- Received TASC (Development of VR Lab) Grant. \$48k
- Submitted BOR grant proposal for Cyber Security Lab enhancement, equipment, and education. Toward minor in Cyber Security. \$170k
- 300+ students from high schools attended Computer Science Student projects during E-Week.
- Industry experts came for E-Week to deliver talks on contemporary CS topics to current CS students.
- Certifications
 - One student - Cyber Security
 - Two students - MS 70-742 Windows Server 2016
 - 14 students - First level of Kuka Robot Language
- Received 4k for LaSpace Senior Undergraduate Research Grant.
- Submitted Proposal 2023-2024 La Space Senior Undergraduate Research Grant.
- Received \$4k for McNeese Computer Science Tutoring Center.
- Received Shearman Grant for OTTER. Autonomous Transport Device. \$6k.

2023-2024:

- LaSpace Senior Design Undergraduate Research Team presented poster at LSU Discover Day.
- Received BOR Cybersecurity grant for Cyber Security Lab enhancement, equipment, and education, towards minor in Cyber Security. \$100k
- We submitted and got approved for the Cyber Security Minor in the Catalog for Fall 2024
- Submitted BOR grant proposal for Cyber Security Lab enhancement, equipment, and education. Toward a Concentration in Cyber Security. \$120k and not awarded.
- Submitted ITRS grant proposal for 3D modeling with assistance from LA LIDAR. \$120k and not awarded.
- Received \$4K LaSpace Senior Design grant.
- Submitted a proposal for LaACES Project \$12K.
- Submitted Shearman Grant for Virtual Reality Lab, \$4,500, not awarded.
- Received TASC Grant for DREW 228 and 235 (\$29,344) upgrades to include projectors, electrical and accessories.
- EP grants includes
 - research for building environmental monitoring systems with FPGA's
 - tutoring center
 - data research for python libraries
 - developing a DevOp class
 - online Annual Performance Review project continuation
- Certifications
 - One student - Cyber Security
 - Three students - MS 70-742 Windows Server 2016
 - Five students - Kuka Robot training.
- Collaboration to co-host workshop at IEEE Big Data Conference 2025 with University of South Alabama.
- 600+ students from high schools attended Computer Science Student projects during E-Week.
- Industry experts came for E-Week to deliver talks on contemporary CS topics to current CS students.
- Some of the highlights of Capstone includes - AI gestures, machine-learning, robotics, rover, game development and data analysis for patterns. They presented their final presentations on Capstone Day, April 26, 2024.
- 2 teams from ACM participated in ICPC programming competition in Fall 2023.
- MAA participation and poster presentation.
- Computer Science students as part of NSBE attended national convention, Atlanta 2024.
- Computer Science students as part of NSBE hosted Hackathon at McNeese in February 2024.
- New classes added for Fall 2024: Dev Op (CSCI 475), Cyber Defense (CSCI 474)
- Training for Student Organization Advisors and Student Leaders, at La Jeunesse Room, McNeese State University, Lake Charles, LA, on 01-31-2024 during 5:30 pm – 8:30 pm. The ACM chapter office bearers and the ACM advisor attended the training session on how to build and maintain a student club/chapter.
- Departmental presentation/summary: As a follow-up to the above event on 1-31-2024, the ACM Chapter advisor Dr. Menon presented a 30-minute summary of the talk by Ms. Jacqueline Clark and Mr. Dave Kelly, to the ENCS Student Leaders, ENCS Faculty Advisors, and Department Head Dr. Vasan on 02-17-2024 (Wednesday), in Drew 117.

2024-2025:

- LaSpace LaACES Undergraduate Research Team presented poster at LSU Discover Day.
- We submitted and got approved for the Cyber Security Concentration in the Catalog for Fall 2025
- We submitted and got approved for the AI Concentration in the Catalog for Fall 2025
- Re-submitted ITRS grant proposal for 3D modeling with assistance from LA LIDAR. \$120k and not awarded.
- Submitted a proposal for LaACES Project \$17K.
- Received TASC Grant for the VIRTUAL REALITY Lab in DREW 228 (\$25,000). It is for goggles, computer, and a TV. Dr. Lavergne wrote the grant and she will administer it. This will be used in CSCI 432 (3-D Virtual Reality with Unity).
- EP grants include:
 - Conference Travel Funds
 - ACM Student Chapter development, including Officer training, miscellaneous expenses, internal competitions, MFT support, Prizes for Outstanding students
 - Research project, Environmental Monitoring System Using FPGA, supervising two students
 - ICPC Programming Competition related expenses (at LSU- Baton Rouge), including support for student registration, travel expenses for students and coach, food, etc.
 - Data research for python libraries
 - CCSC Conference expenses including printing posters for our McNeese students, Student Registration, and miscellaneous conference expenses
 - Expenses for printing posters for the McNeese Undergraduate Research Symposium on 3-27-2025.
- Certifications
 - Two students - Cyber Security
 - Two students - Computer Network
 - Eight students were certified in Hybrid Server Pro: Core (Microsoft and Azure), also with TESTOUT. These students were mentored by Professor Rhonda Anderson.
- Collaboration to co-host workshop at IEEE Big Data Conference 2025 with University of South Alabama.
- 600+ students from high schools attended Computer Science Student projects during E-Week.
- Industry experts came for E-Week to deliver talks on contemporary CS topics to current CS students.
- Some of the highlights of Capstone includes - AI Resume Generation, Machine Vision with Kuka Robots, Intrusion Detection System, Visualization Prediction Rules, Procedural Generation with Advanced Mathematics, Game Development, Flood Modeling with Engineering. The students presented their final presentations to faculty and industry experts on Capstone Day, April 28, 2025.
- 4 teams from ACM participated in ICPC programming competition in Fall 2024.
- MAA participation and poster presentation.
- Computer Science students as part of NSBE attended national convention, Chicago 2025.
- Computer Science students as part of NSBE hosted Hackathon at McNeese in February 2025.
- New classes added for 2024-2025: Dev Ops (CSCI 475, in Fall 2024), and Cyber Defense (CSCI 474, in Spring 2025)
- 36th CCSC: SC Conference held at McNeese State University for the first time.

5 Program Mission

Provide students with a solid grounding in computer science, enable students to become effective problem solvers, foster the students' ability to effectively convey their technical knowledge and encourage students to become responsible computer science professionals. The degree will prepare students for a career in the field of computer science or for admission into a graduate program in computer science or a related field of study. Stakeholders: graduate schools, employers.

6 Institutional Mission Reference

This degree supports the University's fundamental mission to successfully educate undergraduate students to meet the needs of regional employers. The program provides graduates with the critical thinking and problem solving skills required to support regional economic development. It provides opportunities for student internships in local industry and prepares students to become effective employees.

7 Assessment and Benchmark CSCI 308 Coursework

Assessment: The rubric evaluation of CSCI 308 - Advanced Data Structures and Algorithms assesses the following Performance Criteria about ABET SLO A.

Students should have an ability to apply knowledge of computing and mathematics appropriate to the discipline (ABET SLO A).

1. Apply mathematics to obtain the general formula for the sum of a sequence of terms, seen in the student's ability to perform a proof by induction.
2. Apply knowledge of computing and mathematics to develop recursive and non-recursive solutions to a broad variety of problems.
3. Apply the necessary math to derive and/or explain the best case, worst case, and average case complexities of certain important problems in Computer Science.

Benchmark: An average score of 3.25/5.00 is the desired achievement level. A benchmark of 3.25 on a 5-point scale for the rubric evaluation of "CSCI 308 - Advanced Data Structures and Algorithms" for each of the SLOs is set.

Prior to 2019-2020, the benchmark was 3.00 on a 5-point scale

Prior to 2016-2017, the benchmark was 2.00 on a 3-point scale.

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7.1 Data PC1: Analyze complex computing problems

PC1: (Before 2020) Apply mathematics to obtain the general formula for the sum of a sequence of terms, seen in the student's ability to perform Analysis of Algorithms (Big Oh, counting primitive operations, and asymptotic analysis).

PC1: (As of 2020) Demonstrate a knowledge of the most general data structures in Computer Science - GRAPHS - and identify, explain, represent, and differentiate between the two basic techniques used to implement graphs, i.e., Adjacency Matrices and Adjacency Lists

Academic Year	Average score on PC1
2020-2021	4.04/5.00
2021-2022	4.67/5.00
2022-2023	4.13/5.00
2023-2024	4.39/5.00
2024-2025	4.23/5.00

7.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

Additional work on graphs needed to improve score. More practice using the structures and more visual/hands on examples should help. Graphs at the end of the class could result in lack of motivation as students are getting ready for the end of the semester.

2021-2022:

The benchmark was met.

2022-2023:

The benchmark for this period has been met. A small drop in assessment values was seen due to students being used to pandemic level education from high school and early university. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. I believe more background information on mathematics, coding, and moodle usage may help bring the scores higher.

2023-2024:

The benchmark for this period has been met. A small rise in assessment values was seen due to the addition of more examples, background, and moodle practice exercises provided. I will no longer be teaching CSCI 308 starting Fall 2024, but I will pass these results on to the next professor.

2024-2025:

Students are doing well. The students are working well in CSCI 308, implementing algorithms that deal with arrays, linked lists, trees, and graphs. They are doing well, and the best ones go on to ICPC programming competitions. The benchmark was met.

7.2 Data Recursive and non-recursive solutions

PC2: Apply knowledge of computing and mathematics to develop recursive and non-recursive solutions to a broad variety of problems.

Problems Assessed (as of 2020):

Demonstrate a knowledge of a more sophisticated (clever) data structure in Computer Science - the HEAP - and understand the tradeoffs involved in representing a heap by a tree vs. an array
Demonstrate a knowledge of a dynamic data structure, the Singly Linked List, and understand the tradeoffs involved in:

- 1) maintaining just a head node, VERSUS
- 2) maintaining both a head node and a tail node.

Academic Year	Average score on PC2
2019-2020	4.04/5.00
2020-2021	4.04/5.00
2021-2022	4.42/5.00
2022-2023	4.36/5.00
2023-2024	4.36/5.00
2024-2025	4.29/5.00

7.2.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

Additional work on Graphs needed to improve score. More practice using the structures and more visual/hands on examples should help. Graphs at the end of the class could result in lack of motivation as students are getting ready for the end of the semester.

2021-2022:

The benchmark was met.

2022-2023:

The benchmark for this period has been met. A small fluctuation in assessment values was seen, possibly due to students being used to pandemic level education from high school and early university. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. I believe more background information on mathematics, coding, and moodle usage may help bring the scores higher.

2023-2024:

The benchmark for this period has been met. A small rise in assessment values was seen due to the addition of more examples, background, and moodle practice exercises provided. I will no longer be teaching CSCI 308 starting Fall 2024, but I will pass these results on to the next professor.

2024-2025:

Lots of additional tree and graph problems were done in class. The students were able to complete the work in class and lab, and their work in class was reflected in the Closed Book Final Exam. The students were given industry standard problems on the Final Exam, and they met the benchmark. Also, our Computer Science Industry Advisory Board (CS IAB) recommended adding CRITICAL THINKING to our Program Educational Objectives (PEOs). We are already implementing it, even though we are only required to start in 2025-2026.

7.3 Data Sorting Algorithms

PC3: (Before 2020) Apply the necessary math to derive and/or explain the best case, worst case, and average case complexities of certain important problems in Computer Science.

PC3: (After 2020) Demonstrate a knowledge of the tradeoffs involved in picking a simple and brute-force a sorting algorithm such as Bubble Sort or Selection Sort versus a more sophisticated sorting algorithm such as Quick Sort or Merge Sort.

Academic Year	Average score on PC3
2020-2021	4.04/5.00
2021-2022	4.28/5.00
2022-2023	4.52/5.00
2023-2024	4.5/5.00
2024-2025	4.37/5.00

7.3.1 Analysis of Data and Plan for Continuous Improvement

2021-2022:

The benchmark was met.

2022-2023:

The benchmark for this period has been met. A small fluctuation in assessment values was seen, possibly due to students being used to pandemic level education from high school and early university. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. I believe more background information on mathematics, coding, and moodle usage may help bring the scores higher.

2023-2024:

The benchmark for this period has been met. A small dip in assessment values was seen due to the need for more background and moodle practice exercises provided. I will no longer be teaching CSCI 308 starting Fall 2024, but I will pass these results on to the next professor.

2024-2025:

Benchmark has been met. Students worked on practice problems throughout the semester, and this helped in the mid-term exam and in the final exam.

8 Assessment and Benchmark CSCI 308 Coursework

Assessment: The rubric evaluation of CSCI 308 - Advanced Data Structures and Algorithms assesses the following Performance Criteria about ABET SLO B.

Students should have an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution (ABET SLO B).

1. Demonstrate knowledge of sorting - one of the most studied problems in Computer Science - and identify computing requirements appropriate to its solution - array versus tree solutions, and recursive versus iterative solutions.
2. Analyze various problems in Computer Science and define and specify the computing requirements for its solution using the big-Oh Notation, such as $O(n)$, $O(n \log n)$, $O(n^2)$, $O(n^3)$, $O(2n)$, etc.

Benchmark: An average score of 3.50/5.00 is the desired achievement level. A benchmark of 3.50 on a 5-point scale for the rubric evaluation of "CSCI 308 - Advanced Data Structures and Algorithms" for each of the SLOs is set.

Prior to 2019-2020, the benchmark was 3.00 on a 5-point scale.

Prior to 2016-2017, the benchmark was 2.00 on a 3-point scale.

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8.1 Data Trees vs Arrays

PC1: Demonstrate knowledge of sorting - one of the most studied problems in Computer Science - and identify computing requirements appropriate to its solution - array versus tree solutions, and recursive versus iterative solutions.

Academic Year	Average score on PC1
2020-2021	4.07/5.00
2021-2022	4.44/5.00
2022-2023	4.13/5.00
2023-2024	4.25/5.00
2024-2025	4.27/5.00

8.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

More examples and hands on experience with proofs and Big Oh needed to help students become more comfortable with writing proofs and assigning performance values to algorithms.

2021-2022:

The benchmark was met.

2022-2023:

The benchmark for this period has been met. A small drop in assessment values was seen due to students being used to pandemic level education from high school and early university. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. I believe more background information on mathematics, coding, and moodle usage may help bring the scores higher.

2023-2024:

The benchmark for this period has been met. A medium rise in assessment values was seen due to the addition of more examples and Moodle practice exercises provided. I will no longer be teaching CSCI 308 starting Fall 2024, but I will pass these results on to the next professor.

2024-2025:

Benchmarks were met. Nothing to add. Students that were not adequately prepared with prerequisite knowledge met the instructor for special training and review sessions in the office. CSCI 308 is the last course in the CSCI 180->281->282->308 sequence, and our students who do not do well in CSCI 308 will be unable to proceed to advanced CSCI 400 level courses. Therefore, students in CSCI 308 need to meet certain rigorous criteria. We discussed these with ABET in their site visit in October 2024, and they were happy with our data and our recommendations.

8.2 Data PC2:Analyze various problems in Computer Science using big-O

PC2:Analyze various problems in Computer Science and define and specify the computing requirements for its solution using big-Oh Notation, such as $O(n)$, $O(n \log n)$, $O(n^2)$, $O(n^3)$, $O(2n)$, etc.

Academic Year	Average score on PC2
2020-2021	3.78/5.00
2021-2022	4.42/5.00
2022-2023	4.13/5.00
2023-2024	4.17/5.00
2024-2025	4.31/5.00

8.2.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

More examples and hands on experience with proofs and big oh needed to help students become more comfortable with writing proofs and assigning performance values to algorithms.

2021-2022:

The benchmark was met.

2022-2023:

The benchmark for this period has been met. A small drop in assessment values was seen due to students being used to pandemic level education from high school and early university. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. I believe more background information on mathematics, coding, and moodle usage may help bring the scores higher.

2023-2024:

The benchmark for this period has been met. A small rise in assessment values was seen due to the addition of more mathematics background and moodle practice exercises provided. I will no longer be teaching CSCI 308 starting Fall 2024, but I will pass these results on to the next professor.

2024-2025:

All benchmarks were met. Lots of Big-Oh notation problems were on the exam. The students were able to solve them.

9 Assessment and Benchmark CSCI 310, 386/486 and 413 Coursework

Assessment: The rubric evaluation of CSCI 386 - Operating System Administration I and CSCI 413 - Software Engineering II assesses the following Performance Criteria about ABET SLO E.

Prior to 2020-2021, the assessment was a rubric evaluation of CSCI 410 - Software Engineering I and CSCI 413 - Software Engineering II.

Students should have an understanding of professional, ethical, legal, security and social issues and responsibilities (ABET SLO E).

1. Identify ethical codes or standards commonly accepted in the computer science profession.
2. Identify specific social/ethical/legal issues relevant to the computing profession and evaluate appropriate and inappropriate responses to hypothetical instances of those issues.

Benchmark for PC1: An average score of 3.25/5.00 is the desired achievement level. A benchmark of 3.25 on a 5-point scale for the rubric evaluation of CSCI 386 - Operating System Administration I and CSCI 413 - Software Engineering II.

Prior to 2019-2020, the benchmark was 3.00 on a 5-point scale.

Benchmark for PC2: An average score of 3.50/5.00 is the desired achievement level. A benchmark of 3.50 on a 5-point scale for the rubric evaluation of CSCI 386 - Operating System Administration I and CSCI 413 - Software Engineering II.

Prior to 2017-2018, the benchmark was 3 on a 5-point scale.

Prior to 2016-2017, the benchmark was 2 on a 3-point scale.

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9.1 Data Identify ethical codes or standards - 310/410/413/386

PC1: Identify ethical codes or standards commonly accepted in the computer science profession.

CSCI 413 (includes data from CSCI 410):

Academic Year	Average score on PC1
2020-2021	2.72/5.00
2021-2022	4.71/5.00
2022-2023	4.37/5.00
2023-2024	4.05/5.00
2024-2025	4.27/5.00

CSCI 486 (effective Spring 2021):

Academic Year	Average score on PC1
2020-2021	4.6/5.00
2021-2022	4.19/5.00
2022-2023	4.19/5.00
2023-2024	—
2024-2025	4.19/5.00

CSCI 310 (effective Spring 2023, not offered Spring 2024, will be offered Fall 2024):

Academic Year	Average score on PC1
2022-2023	4.67/5.00
2023-2024	—
2024-2025	3.83/5.00

9.1.1 Analysis of Data and Plan for Continuous Improvement Ethics

2020-2021:

Most students only identified one code correctly. Some student identified none. Should arrange the lectures and talk about Code of Ethics at the beginning of this course and give more practice.

2021-2022:

The benchmark was meant. The department wants another year of data before re-evaluating the benchmark, due to the after effects of the hurricanes and pandemic.

2022-2023:

- CSCI 310: We concentrated on discussing ethical issues that were not clear cut. After each student presented their topic, they were asked to lead discussion using "OPEN ENDED" questions. This was a difficult concept for them to understand. they always had "yes/no" questions. Multiple times I had to work with them to rephrase the question to be open ended. I think this might be a product of all the testing done in primary/secondary schools the they have done, yes/no, right wrong, what's to discuss. It seems that some students have forgotten how to think or even how to question themselves.
- CSCI 413: Overall, students did well on the final exam. For continuous improvement, students should apply more practice to lab simulations and lab questions. Students are allowed the opportunity to do this, but many do not take advantage of it. To further encourage this, students could be given bi-weekly discussion questions to stimulate conversations on the concepts learned for a particular chapter(s).

2023-2024:

- CSCI 310: Not offered Spring 2024 due to Dr. Anderson retiring.
 - CSCI 310 is going to become the new main class ethics will be assessed in since its entire focus is the ACM code of ethics for computing.
 - CSCI 310 was not offered in Spring 2024 due to faculty retirement. It will be offered again starting in Fall 2024.
- CSCI 413: For PC2, some students did not identify all the issues and reasons. More case studies should be provided to the students as practice. Most students followed the code of ethics when working on the final project and contributed to the final project. The score is better compared with the score in Spring 2023.
- CSCI 386/486 will no longer be used for assessment of ethics after this year.

2024-2025:

- CSCI 310: To serve our McNeese students better, we decided to offer CSCI 310 in BOTH Fall 2024 and Spring 2025. We had never done that before. The courses went very well. Overall, the students did very well on the assessment data. However, some students could extend their CRITICAL THINKING skills by justifying their statements.
- CSCI 413: For PC1, the benchmark was met adequately.

9.2 Data Identify social/ethical/legal issues in CS - 310/410/413/386

PC2: Identify specific social/ethical/legal issues relevant to the computing profession and evaluate appropriate and inappropriate responses to hypothetical instances of those issues.

CSCI 413 (includes data from CSCI 410):

Academic Year	Average score on PC2
2020-2021	3.36/5.00
2021-2022	4.00/5.00
2022-2023	4.19/5.00
2023-2024	4.02/5.00
2024-2025	4.15/5.00

CSCI 486 (effective Spring 2021):

Academic Year	Average score on PC2
2020-2021	4.53/5.00
2021-2022	3.57/5.00
2022-2023	4.24/5.00
2023-2024	—
2024-2025	-

CSCI 310 (effective Spring 2023, not offered Spring 2024, will be offered Fall 2024):

Academic Year	Average score on PC2
2022-2023	4.67/5.00
2023-2024	—
2024-2025	4.28/5.00

9.2.1 Analysis of Data and Plan for Continuous Improvement Ethics 2

2020-2021:

Most students only identified one code correctly. Some student identified none. Should arrange the lectures and talk about Code of Ethics at the beginning of this course and give more practice.

2021-2022:

The benchmark was met. The department wants another year of data before re-evaluating the benchmark, due to the after effects of the hurricanes and pandemic

2022-2023:

- CSCI 310: We concentrated on discussing ethical issues that were not clear cut. After each student presented their topic, they were asked to lead discussion using "OPEN ENDED" questions. This was a difficult concept for them to understand. they always had "yes/no" questions. Multiple times I had to work with them to rephrase the question to be open ended. I think this might be a product of all the testing done in primary/secondary schools the they have done, yes/no, right wrong, what's to discuss. It seems that some students have forgotten how to think or even how to question themselves.
- CSCI 413: Overall, students did well on the final exam. For continuous improvement, students should apply more practice to lab simulations and lab questions. Students are allowed the opportunity to do this, but many do not take advantage of it. To further encourage this, students could be given bi-weekly discussion questions to stimulate conversations on the concepts learned for a particular chapter(s).

2023-2024:

- CSCI 310: Not offered Spring 2024 due to Dr. Anderson retiring. CSCI 310 is going to become the new main class ethics will be assessed in since its entire focus is the ACM code of ethics for computing. CSCI 310 was not offered in Spring 2024 due to faculty retirement. It will be offered again starting in Fall 2024.
- CSCI 413: For PC2, some students did not identify all the issues and reasons. More case studies should be provided to the students as practice. Most students followed the code of ethics when working on the final project and contributed to the final project. The score is better compared with the score in Spring 2023.
- CSCI 386/486 will no longer be used for assessment of ethics after this year.

2024-2025:

- CSCI 310: Students met the benchmark. Both in Fall 2024 and in Spring 2025.
- CSCI 413: For PC2, the benchmarks were met.

10 Assessment and Benchmark CSCI 309/413/491 Coursework

Assessment: The rubric evaluation of CSCI 309 - Database Management Systems and CSCI 491 - Seminar assesses the following Performance Criteria about ABET SLO D.

Prior to 2020-2021, the assessment was a rubric evaluation of CSCI 413 - Software Engineering II.

Students should demonstrate an ability to function effectively on teams to accomplish a common goal (ABET SLO D).

1. Contribute to team objectives through active participation in team activities.
2. Contribute to team objectives through performance of individual assigned tasks.
3. Contribute to team objectives through productive interdisciplinary activities.

Benchmark: An average score of 3.25/5.00 is the desired achievement level. A benchmark of 3.25 on a 5-point scale for the rubric evaluation of CSCI 309 - Database Management Systems and CSCI 491 - Seminar.

Prior to 2019-2020, the benchmark was 3.00 on a 5-point scale.

Prior to 2016-2017, the benchmark was 2.20 on a 3-point scale.

Files:

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10.1 Data Active participation in team activities

PC1: Contribute to team objectives through active participation in team activities.

CSCI 413: (spring only)

Academic Year	Average score on PC1
2020-2021	4.38/5.00
2021-2022	4.25/5.00
2022-2023	4.71/5.00
2023-2024	4.18/5.00
2024-2025	-

CSCI 309: (fall only)

Academic Year	Average score on PC1
2020-2021	4.67/5.00
2021-2022	4.56/5.00
2022-2023	4.09/5.00
2023-2024	3.42/5.00
2024-2025	3.66/5.00

CSCI 491: (spring only)

Academic Year	Average score on PC1
2020-2021	4.24/5.00
2021-2022	4.74/5.00
2022-2023	4.62/5.00
2023-2024	4.50/5.00
2024-2025	4.77/5.00

10.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

Student performed as expected. More work restricting topic types etc needs to be implemented.

Students performed as expected. More direction and status reports possibly needed to help students who are not participating enough in their project.

2021-2022:

The benchmark was met.

2022-2023:

- CSCI 309 and 491: The benchmark for this period has been met. A small fluctuation in assessment values was seen, possibly due to students being used to pandemic level education from high school and early university. They lack experience working directly with others and as a team due to lockdown/Hurricanes. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. More personal attention should be paid the students to help raise their experience level.
- CSCI 413: Students did well in this year's final projects. The evaluation of their systems can be further improved.

2023-2024:

- CSCI 309: More hands on instruction in 309 will be beneficial. Student grades were lower this semester due to issues with cheating. More vigilance will be required in order to combat this in the future.
- CSCI 491: Students performed very well. This was our best year for report documents. Splitting 491 into 492 and 493 will also be beneficial.
- CSCI 413: Students did well in this year's final projects. The evaluation of their systems can be further improved.

2024-2025:

- CSCI 413: No longer using 3.5 in CSCI 413 in Assessment data.
- CSCI 309: Lab days allocated for group collaboration
- CSCI 491: No changes needed, because we are doing well and we are meeting benchmarks.

10.2 Data Team - performance of individual assigned tasks

PC2: Contribute to team objectives through performance of individual assigned tasks.

CSCI 413:(spring only)

Academic Year	Average score on PC2
2020-2021	4.38/5.00
2021-2022	4.25/5.00
2022-2023	4.14/5.00
2023-2024	4.18/5.00
2024-2025	-

CSCI 309: (fall only)

Academic Year	Average score on PC2
2020-2021	4.92/5.00
2021-2022	4.80/5.00
2022-2023	4.09/5.00
2023-2024	5.00/5.00
2024-2025	4.66/5.00

CSCI 491: (spring only)

Academic Year	Average score on PC2
2020-2021	4.05/3.00
2021-2022	—
2022-2023	4.62/5.00
2023-2024	5.00/5.00
2024-2025	4.77/5.00

10.2.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

Student performed as expected. More work restricting topic types etc. needs to be implemented.

Students performed as expected. More direction and status reports possibly needed to help students who are not participating enough in their project.

2021-2022:

The benchmark was met in CSCI 309, no data was collected for 491.

2022-2023:

- CSCI 309 and CSCI 491: The benchmark for this period has been met. A small fluctuation in assessment values was seen, possibly due to students being used to pandemic level education from high school and early university. They lack experience working directly with others and as a team due to lockdown/Hurricanes. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. More personal attention should be paid the students to help raise their experience level. In addition, more granular goals may help.
- CSCI 413: Students did well in this year's final projects. The evaluation of their systems can be further improved.

2023-2024:

- CSCI 309: More hands on instruction in 309 will be beneficial. Student grades were lower this semester due to issues with cheating. More vigilance will be required in order to combat this in the future.
- CSCI 491: Students performed very well. This was our best year for report documents. Splitting 491 into 492 and 493 will also be beneficial.
- CSCI 413: Students did well in this year's final projects. The evaluation of their systems can be further improved.

2024-2025:

- CSCI 413: No longer using 3.5 in CSCI 413 in Assessment data.
- CSCI 309: Lab days allocated for group collaboration
- CSCI 491: No changes needed, because we are doing well and we are meeting benchmarks.

10.3 Data Team - productive interdisciplinary activities

PC3: Contribute to team objectives through productive interdisciplinary activities.

CSCI 413: (spring only)

Academic Year	Average score on PC1
2020-2021	4.38/5.00
2021-2022	4.25/5.00
2022-2023	4.14/5.00
2023-2024	4.18/5.00
2024-2025	-

CSCI 309: (fall only)

Academic Year	Average score on PC1
2020-2021	4.67/5.00
2021-2022	4.80/5.00
2022-2023	4.09/5.00
2023-2024	3.42/5.00
2024-2025	3.16/5.00

CSCI 491:(spring only)

Academic Year	Average score on PC1
2020-2021	4.24/5.00
2021-2022	4.74/5.00
2022-2023	4.62/5.00
2023-2024	4.50/5.00
2024-2025	4.77/5.00

10.3.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

Student preformed as expected. More work restricting topic types etc needs to be implemented.

Students preformed as expected. More direction and status reports possibly needed to help students who are not participating enough in their project.

2021-2022:

The benchmark was met.

2022-2023:

- CSCI 309 and CSCI 491: The benchmark for this period has been met . A small fluctuation in assessment values was seen, possibly due to students being used to pandemic level education from high school and early university. They lack experience working directly with others and as a team due to lockdown/Hurricanes. Students with lower ACT scores are being given a wonderful opportunity to study at McNeese, and we have been working tirelessly to bring them up to speed for their success. More personal attention should be paid the students to help raise their experience level. In addition, more granular goals may help.
- CSCI 413: Students did well in this year's final projects. The evaluation of their systems can be further improved.

2023-2024:

- CSCI 309: Students performed very well. This was our best year for report documents.
- CSCI 491: Students performed very well. This was our best year for report documents. Splitting 491 into 492 and 493 will also be beneficial.
- CSCI 413: Students did well in this year's final projects. The evaluation of their systems can be further improved.

2024-2025:

- CSCI 413: No longer using 3.5 in CSCI 413 in Assessment data.
- CSCI 309: Lab days allocated for group collaboration
- CSCI 491: No changes needed, because we are doing well and we are meeting benchmarks.

11 Assessment and Benchmark CSCI 491 Coursework

Assessment: The rubric evaluation of CSCI 491 - Seminar assesses the following Performance Criteria about ABET SLO G.

Students should have an ability to analyze the local and global impact of computing on individuals, organizations, and society (ABET SLO G).

1. Identify and orally discuss an international diversity component in the computing field.
2. Identify and orally discuss expert opinion/statistical analysis/evidence impacting the computing field.

Benchmark for PC1: An average of 3.30/5.00 is the desired achievement level. A benchmark of 3.30 on a 5-point scale for the rubric evaluation of "CSCI 491 - Seminar" for each of the SLOs is set.

Prior to 2017-2018, the benchmark was 3.00 on a 5-point scale.

Prior to 2016-2017, the benchmark was 2.00 on a 3-point scale.

Benchmark for PC2: An average of 3.00/5.00 is the desired achievement level. A benchmark of 3.00 on a 5-point scale for the rubric evaluation of "CSCI 491 - Seminar" for each of the SLOs is set.

Prior to 2016-2017, the benchmark was 2.00 on a 3-point scale.

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11.1 Data Discuss an international diversity - in the computing field.

PC1: Identify and orally discuss an international diversity component in the computing field.

Academic Year	Average score on PC1
2020-2021	4.67/5.00
2021-2022	4.47/5.00
2022-2023	4.62/5.00
2023-2024	5.00/5.00
2024-2025	4.77/5.00

11.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

The new benchmark was met in 2020-2021. Concerns about cheating addresses with more policing and plagiarism training. No other action is needed. The data collected will be monitored for possible benchmark change.

2021-2022:

The new benchmark was met in 2021-2022. Concerns about cheating addresses with more policing and plagiarism training. No other action is needed. The data collected will be monitored for possible benchmark change.

2022-2023:

The new benchmark was met in 2022-2023. Cheating policing and plagiarism training has helped greatly with academic dishonesty issues of previous semesters. No other action is needed. The data collected will be monitored for possible benchmark change.

2023-2024:

The new benchmark was met in 2023-2024. No other action is needed. The data collected will be monitored for possible benchmark change.

2024-2025:

The benchmark was met in 2024-2025. No other action is needed.

11.2 Data Discuss expert opinion/statistical analysis/evidence

PC2: Identify and orally discuss expert opinion/statistical analysis/evidence impacting the computing field.

Academic Year	Average score on PC2
2020-2021	4.92/5.00
2021-2022	4.47/5.00
2022-2023	4.62/5.00
2023-2024	5.00/5.00
2024-2025	4.77/5.00

11.2.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:

The new benchmark was met in 2020-2021. Concerns about cheating addresses with more policing and plagiarism training. No other action is needed. The data collected will be monitored for possible benchmark change.

2021-2022:

The new benchmark was met in 2021-2022. Concerns about cheating addresses with more policing and plagiarism training. No other action is needed. The data collected will be monitored for possible benchmark change.

2022-2023:

The new benchmark was met in 2022-2023. Cheating policing and plagiarism training has helped greatly with academic dishonesty issues of previous semesters. No other action is needed. The data collected will be monitored for possible benchmark change.

2023-2024:

The new benchmark was met in 2023-2024. No other action is needed. The data collected will be monitored for possible benchmark change.

2024-2025:

The benchmark was met in 2024-2025. No other action is needed.

12 Assessment and Benchmark Alumni Survey

Assessment: Alumni Survey questions targeting ABET SLO B.

Benchmark: A benchmark of 2.00 on a 3-point scale for the Alumni Survey.

12.1 Data

Academic Year	Alumni Survey Average
2020-2021	—
2021-2022	—
2022-2023	—
2023-2024	2.50/3.00
2024-2025	—

* Assessment data for Alumni Surveys were not assessed from 2018 - 2023 as Computer Science did not have regular access to Survey Monkey until Spring 2024.

12.1.1 Analysis of Data and Plan for Continuous Improvement Alumni Survey

2020-2021:

The data was not collected due to the continuation of the COVID-19 pandemic and multiple hurricanes hitting campus.

2021-2022:

The benchmark was met in 2021-2022 with improvement from the previous year seen. No action is needed. The data collected will be monitored for possible benchmark change.

2022-2023:

The benchmark was met in 2022-2023 with improvement from the previous year seen. No action is needed. The data collected will be monitored for possible benchmark change.

2023-2024:

The benchmark was not met in 2023-2024 with only 5 student responses, with only 2 completed.

Currently our Alumni feel they were minimally prepared for analyzing/applying complex solutions to computing problems they encounter in their line of work. Observation of this assessment will continue as we move into the next review period. Some student suggestions and comments request more hands-on projects. The CIC plans to discuss adding more of these throughout the program to meet students' needs and raise their confidence. In contrast, the employers feel our students are prepared to meet the challenges they may encounter in their careers with scores ranging from well prepared to exceptionally prepared.

The data collected will be monitored for possible benchmark change.

2024-2025:

The data was not collected for 2024-2025 Calendar Year